

TECHNOLOGY IN THE ONLINE NEWSROOM:  
THE USE OF COLLABORATIVE TOOLS  
IN VIRTUAL TEAM MANAGEMENT

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Master of Arts

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By  
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The undersigned, approved by the dean of the Graduate School, have examined the  
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TECHNOLOGY IN THE ONLINE NEWSROOM:  
THE USE OF COLLABORATIVE TOOLS IN VIRTUAL TEAM MANAGEMENT

Presented by Kirstin A. McCudden,

A candidate for the degree of Master of Arts in Journalism,

And hereby certify that, in their opinion, it is worthy of acceptance.

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# TABLE OF CONTENTS

Acknowledgements .....	ii
Table of Contents .....	iii
List of illustrations .....	v
Abstract.....	vi
Chapter 1: Introduction .....	1
Emergence of Virtual Teams.....	1
Technology .....	2
Significance of Study .....	3
Outline of Paper.....	5
Common Terms.....	7
Selection of Case Study: Choosing the Virtual Team at <i>Swisster</i> .....	10
Designing the Semester .....	11
About <i>Swisster</i> .....	12
Limitations .....	14
Chapter 2: Research Design and Methods .....	17
Rationale for Choosing Qualitative Methods for This Study.....	17
Weaknesses and limitations in the methodology .....	18
Exploring relevant ethnographic research.....	20
A Methodology for Understanding Organizational Outcomes .....	22
Chapter 3: A Theory at the Crossroads of Organizational Research and Technology .....	25
An Evolving Theory .....	26
Weaknesses and Limitations in Technological Determinism .....	27
Technology As a ‘Building Block’ to Organizational Dynamics Research .....	29
Technology and Organizational Research: ‘Inextricably Related’ .....	30
Chapter 4: Literature Review.....	32
Collaborative Tools and Organizational Dynamics .....	32
Managing virtual teams.....	33

Choosing technology: suggestions for managers.....	35
<b>Tool-Specific Research: Exploring Computer Supported Work Teams.....</b>	<b>38</b>
Lotus Notes.....	39
Meeting Web.....	41
NetMeeting.....	42
LISTSERVE.....	42
<b>Technology Use in the Newsroom .....</b>	<b>43</b>
<b>Chapter 5: Findings .....</b>	<b>47</b>
<b>Organizational Structure .....</b>	<b>48</b>
The <i>Swisster</i> team.....	48
Tools accessibility for <i>Swisster</i> team members.....	49
<b>Expectations .....</b>	<b>50</b>
“It’s more of a news magazine ...”.....	50
<b>Communication.....</b>	<b>51</b>
E-mail is king.....	52
Meetings: “I don’t see the benefit.” .....	54
Other interaction and feedback.....	58
<b>Chapter 6: Analysis .....</b>	<b>60</b>
<b>Research Question 1: On what basis are tools chosen? .....</b>	<b>60</b>
Observation.....	60
Discussion.....	62
<b>Research Question 2: Does the richness of chosen tools affect the product? .....</b>	<b>64</b>
Observation.....	64
Discussion.....	65
<b>Chapter 7: Conclusions and Discussions .....</b>	<b>67</b>
<b>Implications from theory .....</b>	<b>68</b>
<b>Limitations .....</b>	<b>70</b>
<b>New research questions raised by study .....</b>	<b>69</b>
<b>Practical purposes of research and conclusion .....</b>	<b>70</b>
<b>Appendix I <i>Swisster</i> Stringer Study .....</b>	<b>72</b>
<b>Appendix II Representation of the <i>Swisster</i> Newsroom .....</b>	<b>76</b>
<b>References.....</b>	<b>77</b>

## LIST OF ILLUSTRATIONS

Figure	Page
1. Interaction Willingness by Medium	56
2. General Interaction	58

TECHNOLOGY IN THE ONLINE NEWSROOM:  
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**ABSTRACT**

This case study gives a detailed description of the tools employed in the management of a news-producing virtual team. The research uses field observation and interviews to identify patterns of internal communication in an attempt to better understand the influence and uses of technology on organizational dynamics in general and media management in particular. The findings from this case study reinforce research suggesting that communication patterns and organizational structure, more than specific tools, play an important role in virtual team management. It also emphasizes the role of leadership as an important factor in tool choice and effectiveness. As organizations increasingly rely on virtual teams, managers are ever more tasked with effective supervision and can benefit from these findings.



# **CHAPTER 1: INTRODUCTION**

## **Emergence of Virtual Teams**

Rapid advancements in globalization and technology have both enabled and made necessary geographically dispersed teams for many industries. The emergence of virtual teams to overcome geographic differences has introduced new efficiencies and deficiencies to team dynamics, a solution that has itself generated new challenges leads to a demand for new solutions.

More than 19 million people were working online as early as 2001, and two out of every three Fortune 500 companies were using tele-commuters by 2002 (Kirkman, Rosen, Gibson, Tesluk, & McPherson, 2002). As virtual team arrangements became more common in the business world, scholarly research began to address their development. Early virtual team research focused first on the description of such teams then on the teams' organization and general effectiveness. Due to this original focus, the benefits and drawbacks of virtual teams are well documented. On the positive side, the best talent for a project can be assembled into a flexible and efficient team, while negatives focus on how lack of face-to-face communication creates a lack of trust, and teams sometimes have difficulty or outright failure in communicating (Araujo, 2004; Jarvenpaa & Leidner, 1999; Malhotra & Majchrzak, 2005).

For companies looking to harness their value, these qualitative and quantitative measurements offer insight to the organizational dynamics necessary to manage virtual

teams. Shifting from face-to-face to virtual teams requires not only new applications of technology, but also a rethink in team management.

## **Technology**

By definition, a virtual team is one that relies upon technology for its organizational processes, but management is not dictated by those technologies. Choice and application of these tools – be it lean media such as instant messaging, or rich media such as video-conferencing – affects communication, work flow and, ultimately, work product. As the use of virtual teams proliferates across all types of organizations, new software is being rapidly developed to aid in the management of geographically dispersed staffs. Software such as Microsoft's NetMeeting and IBM's Lotus Notes and applications such as instant messaging and Skype are examples of tools available to organize work teams and their products. Despite the constant introduction of collaborative tools into the marketplace, a limited amount of research on specific software effects on virtual management and a dearth of scholarship on news-producing virtual teams implies the research outlined here can have significant relevance for the future of media management. Managers do not lack for an abundance of communication tools, but need to define their teams' needs in tool choice rather than be defined by the technology.

For example, the 2003 article "Virtual Teams and the Appropriation of Communication Technology: Exploring the Concept of Media Stickiness" suggests a disconnect between previous virtual team research and technological communication research: "Virtual team researchers are mainly focused on problems of interaction faced by such teams, and less on the way teams appropriate communication tools" (Huysman,

et al., 2003). The article argues that because the components of virtual organizations – e.g. the individuals, teams, and departments – are electronically linked, more focus should be paid to communication systems.

Similarly, in his 1997 article, “Virtual Teams versus Face-to-Face Teams: An Exploratory Study of a Web-based Conference System,” Warkentin aggregates previous research to assert that there is substantial evidence suggesting virtual teams communicate less efficiently than face-to-face groups (Warkentin, Sayeed, & Hightower, 1997). Inefficient communication exchange retards the growth of relational, or interpersonal links, which are crucial to positive outcomes such as enhanced creativity and motivation, increased morale, better decisions, and fewer process losses (Beranek & Ben, 2005; Warkentin, et al., 1997).

Both teams of researchers situated their analyses on the effects of specific software on virtual teams. The assertions in these articles suggest an evolution of virtual team research from general awareness and documentation to a deeper probing of group dynamics and communication efficacy. Because virtual teams communicate strictly through electronic systems, and relational links are crucial to the success of these teams, it follows that more attention should be paid to the electronic systems and tools that develop information exchange and relation links.

### **Significance of Study**

As part of that evolution, this thesis project aims in part to aggregate previous research on specific communication tools used by real and academically created virtual teams and then situate that research within an analysis of a case study of an existing

news-producing virtual team. Culminating with proposed practical implications from the case study and research analysis, this thesis suggests potential beneficial consequences for management dynamics in general and media managers in particular.

Specifically, combining an ethnographic study of the online news Web site *Swisser* with an analytical comparison of scholarship available on specific tools, this thesis intends to further examine organizational change in journalism by asking the questions: When managing a geographically dispersed, or virtual, team, on what basis are communicative tools chosen?

How does the type of technology used to establish internal communications affect the newsgathering process?

For purposes of this research, the documented growth and prevalence of virtual teams can be thought of as one leg in the tripod of factors creating a basis for the examination at hand. The other two legs are organizational dynamics – specifically media management – and the use of technology and its role in the communication process. Together, these entwined factors will be examined through an appropriately accommodating theoretical lens of sociomaterialism, which attempts to take into account both organizational culture and technology.

The research performed here aims to better understand the impact and uses of technology on modern-day media organizational dynamics. As managers are increasingly faced with the administration and organization of a dispersed group, this research places greater emphasis on the management process and rationale behind tool use.

This leads to an examination of other questions for the case study, including: How rich is the current technology used by a news-producing virtual team, and does that level of richness seem appropriate for the particular team, when compared to scholarly research? In the management of a virtual staff, how important is tool use versus communication patterns and organizational structure?

## **Outline of Paper**

The remainder of this thesis begins by defining frequently used terms and identifying their importance within this paper. An introduction to the virtual team at the center of this case study and a basic framework for the observation follows.

Next, the rationale for approaching this research question with a qualitative methodology is laid out. A descriptive summary and relevant scholarly evaluation of the fieldwork attempted in this project will help explain how the chosen methodology is well suited for understanding the organizational dynamics at play.

The complex relationship between these organizational dynamics and the dependency of virtual teams on technology leads to a discussion of the progressive theoretical lenses used to examine the information gathered here. Understanding the multiple lenses of technological determinism and research associated with its evolutionary theoretical partner, sociomaterialism, attempts to frame this project in a relevant academic context.

Next, a literature review aggregates available scholarship on virtual team management and specific tools used in communication processes for computer supported work teams. These academic tool-based projects are important not only for their insight

on particular technologies but also for their similar conclusions on communication patterns and structure.

A case study analysis follows the literature review, with an in-depth discussion of the findings made during the observational sessions.

In an attempt to answer the research questions laid out at the beginning of this project, the specific data gathered during fieldwork are then synthesized with the previously outlined tool-specific academic research. With an understanding of its limitations, the resulting analysis leads to conclusions and suggestions for virtual team management, suggestions for future research and practical uses for the research performed.

## COMMON TERMS

Before delving into the specifics of the research, an explanation of commonly used terms and concepts will assure consistency and clarity throughout this paper.

The basic unit of interest in this organizational dynamics study is a virtual team, or group of workers separated by distance. For their case study of travel agency Sabre Inc., researchers Kirkman, Rosen et al. first defined the team and its communication: “Virtual teams are groups of people who work interdependently with shared purpose across space, time, and organization boundaries using technology to communicate and collaborate” (Kirkman, et al., 2002, p. 67). The emphasis on the technological dependency of communication and geographical dispersion distinguishes this type of team from a co-located one, or team that has the option to communicate face-to-face (Bell & Kozlowski, 2002; Workman, 2005).

In the previously mentioned 2003 article, “Virtual Teams and the Appropriation of Communication Technology: Exploring the Concept of Media Stickiness,” a group of researchers in The Netherlands explain the type of communication composition necessary for virtual teams as Computer Supported Cooperative Work, supported in daily practice by Computer Mediated Communication Systems (Huysman, et al., 2003). The terms CSCW and CMCS will be used in this paper as references to the technology-based communication systems and work patterns inherent in virtual teams.

Beyond the terms used for the general composition of work systems, this research attempts to understand specific computer-mediated communication systems, or types of software and applications, available to managers in facilitating internal communication. Through a literature review of scholarship on specific tools, the media at the center of this project's focus vary widely in availability, cost, and knowledge necessary for their utilization, all factors to be considered throughout this research and as a manager.

To narrow the focus of this research, however, the collaborative tools at the center of this project's inquiry are divided by their temporal boundaries. The types of software and technology will be grouped in categories such as synchronous communication, or that exchanged in real time, and asynchronous communication, or that occurring at differing times, as well as by depth of information transmitted, such as rich or lean transmissions. For example, the write-only prospect of e-mail is considered a lean, asynchronistic medium while video conferencing is a rich synchronistic form of communication that employs images and sound.

Just as a physical toolbox includes many implements of varying purposes, the collaborative tools at the disposal of managers are technological advancements of various degrees and purposes. If a person-to-person e-mail can be considered a small hammer then a published blog post could be seen as a sledgehammer for its comparative reach. Throughout this project, the term collaborative tool will refer to any of the implements available to manage teams. However, just as a sledgehammer wouldn't be used to hang a picture, these collaborative tools need also be appropriate for their assigned task.



While the research mentioned here will be examined in greater depth in the literature review section of this proposal, highlighting these distinctions and definitions among repeating terms early creates a foundation for more in-depth analysis.

## **SELECTION OF CASE STUDY: CHOOSING THE VIRTUAL TEAM AT *SWISSTER***

The chosen site for this case study is the Geneva, Switzerland-based online news Web site *Swisster*. *Swisster* was chosen for several reasons. First, its headquarters is the geographically closest English language newsroom for this Geneva-based researcher, thus limiting project costs and avoiding language-barrier issues. The small team size of ten – two full time staff and eight freelance stringers – also makes the data particularly manageable for a project of this limited length. As a former newspaper designer, copy editor and reporter, this researcher understands the basic rules of news production and was able to respect the workflow while understanding the relevance of a majority of activities. This includes awareness of the focus and concentration necessary for thorough editing at specific times, the rhythm of assignment-based communication and the fervor of approaching daily deadlines.

It is hoped that the limited previous contact with *Swisster*'s Editor created enough rapport necessary for detailed observation and relevant data gathering while a cultural foreignness prevented the researcher from becoming too much a part of the process. It is also hoped that this researcher performed as unobtrusive observation as possible, though the difficulties of this is discussed further in the limitations portion of this section.

## **Designing the Semester**

To approach the question of media use and potential impact on news production, the research plan was organized similar to that of a professional project, with data gathered during qualitative observation compared against relevant scholarly articles.

This case study attempts to use participant observation, a type of ethnographic study, to gather information on technology use in a natural news-producing virtual team setting. The researcher observed a virtual team manager's use of communication tools during the workweek for seventeen days over a period of six weeks. During each observational period, notes and informal interviews were hand recorded then transcribed on the same day. Hand-written notes were then destroyed after project completion. No audio was recorded.

Structured surveys with the group of stringers, executed in March, further established and lent context to observed and recorded technology use. By creating personal reports of the rationale for uses and preferences of team members, non-management perspectives were made available for analysis. By concentrating research around the complementary techniques of ethnography and surveys, results were better balanced for a deeper understanding of technology use and efficacy in managing a virtual news team. As described more fully in the section on the methodology of ethnography, it is hoped that this fieldwork best lends itself to understanding the organizational dynamics at play in the *Swisster* newsroom.

With a focus on the manager's use of tools and methods to facilitate communication processes with his team, observation began in February 2010 and continued through

March 31st. The hours of observation remained the same – from 8:30 a.m. to 1 p.m. – to coincide with the morning’s deadline, but the days of the week were varied for randomizing results as well as to fit with the Editor’s schedule.

After initial observations and interviews were completed, the gathered information was compared against scholarly research and placed in a larger frame of reference. This approach, outlined in more detail in the Research Design and Methods section below, allows for this thesis to conclude in a professional analysis, focusing on suggestions for communication alternatives for news-production virtual teams and future research possibilities.

### **About *Swisster***

Access to a majority of content on [Swisster.ch](http://Swisster.ch), a Web-only news site for the English-speaking residents of Switzerland, is based upon subscriptions, giving the editors and reporters the advantage of knowing more precise details about its readers than most news organizations. Staff members may in fact have more access to demographics on the roughly 4,000 subscribers than descriptions of co-workers. *Swisster* headquarters is tucked away inside the offices of French-language daily *Tribune de Genève*, also owned by *Swisster*’s parent company Edipresse. The official corporate address hardly matters to the staff, however, because the team never meets professionally in a physical space. The product’s Editor works most days from the Geneva headquarters, while an Assistant Editor, and the only other full-time staff member, has a workstation in the office but performs the majority of his work from his home office. About eight roving freelance

reporters, or stringers, are scattered across the small country and are neither expected nor required to check-in to the home office in a physical sense.

As a former occasional freelancer for the *Swisser* site, this researcher has knowledge of the completely vertical internal communication process among the virtual team. From the outset of a proposed article to its completion, a reporter communicates with one of the editors through e-mail exchanges or phone calls. This is a top down, or vertical, communication system. There is little to no interaction among writers, even for those working on the same area of the Web site, such as the weekly calendar, known as *What's On*. There is also currently no notification system in place for when an editor has completed editing an article and made it live on the site. For a conscientious writer wanting to review the final package for any errors, his or her best bet is to frequently refresh the Web site. Weekly conference calls were attempted when the site launched in April 2008, but it was understood that the morning meetings took too long and were shortly stopped (former Editor, personal communication, November 3, 2009). A more thorough examination of communication patterns and tools used is outlined in the Findings: Patterns and Structure section of this paper.

The personal experience with *Swisser* led to the idea that the news site can benefit from a tool analysis and may have the flexibility to adopt any recommendations that would arrive from post-observational analysis. My research questions emerged from this experience. The purpose of this research is not to directly benefit *Swisser*, though it could derive indirect benefits, but more to help situate scholarly research – which is often

based on experimental teams – with immediate practical uses for practicing media managers.

## **Limitations**

Although I sought to follow good ethnographic practices as closely as possible, real-world fieldwork involves complex data gathering and processing (Baker, 2006). In addition to the shortened time frame of observation to fit into the semester structure, other inherent and unforeseen difficulties in the process may have an impact on the data gathered during this particular case study.

For example, it was obvious to me from the first day of observation that blending into the background of a two-person staff was not going to be possible: On Day 1 of observation my mere presence doubled the number of people around the *Swisster* desk because the Assistant Editor was off for the day, and throughout the process would often work from home. The dispersed nature of the *Swisster* team was part of the selection criteria, but I was unprepared for the feeling of obviousness and intrusion felt during the first day. However, over time the direct contact with *Swisster*'s Editor seems to have given more intimate access to the process of managing a small virtual news team rather than prevented accurate measurements.

Initial reluctance to be observed, while understandable, also led to certain compromises between researcher and subject. Rather than allowing unfettered access to his e-mail account as requested, *Swisster*'s Editor agreed instead to count and report twice per observation period how many e-mails he sent to stringers and how many he received. He also agreed to keep track of any SMS, or text messages, sent via phone, and

it was agreed that after each phone call completed or taken that the researcher could inquire if it is related to team communication or other. By the end of the first day of observation the Editor is automatically reporting out loud what type of phone call he is about to make and requires only occasional prompts when phone calls are received. While inquiring over each communication task is intrusive, these data are central to the project's main purpose.

The compromises made were not ideal; self-reporting has its limitations and the researcher must trust the subject's accuracy and attention to details. However, it is what was offered and does not lack for utility. Exact counts of specific tool use are important in their own right but it is the comparison of volume across available technology communication options that hold a larger importance to this project. As an example, in one observational period sixteen e-mails were sent/received and one phone call was made, but it is not the numbers as much as the overwhelming ratio of e-mail use to telephone use that is significant here. Also of significance is that these were, for the most part, the only tools used. Discussed in greater depth in the Findings: Patterns and Structure section, the relatively lean choice of tools by this team has important implications for this research.

The daily rhythm focused on a noon deadline for the output of a newsletter e-mailed directly to subscribers' inboxes. Consisting of four to five larger articles and eight to twelve blurbs, this fresh content was made available on the Web site as it became ready, but was also aggregated into the newsletter as an added service for subscribers. As the Web site was updated and edited on a continuous basis, it was the mid-day output of this

newsletter, and its associated work leading up to the deadline, that became the focus of the observational periods.

Multiple restrictions and difficulties aside, there was great utility in spending even limited time as an observer. The time available was proportionate to the small scale of operations and provided adequate time to observe clear patterns. The opportunity to reintegrate into the rhythm of news production and team management would prove extremely useful when analyzing the results of tool use studies and providing context for comparison.

It is unclear if a longer, more involved observation period would have given deeper or different insights, although it could reconfirm daily averages of tool use. As discussed in the Conclusion and Discussion section of this thesis, a longer period would also be necessary to perform and track results of any experiments on tool use.



## **CHAPTER 2: RESEARCH DESIGN AND METHODS**

As described in the timeline above, ethnographic observation was an ongoing process over the Spring 2010 academic semester in the headquarters of *Swisster*, a news organization serving the English-speaking population of Switzerland with a dispersed team of reporters. The fieldwork was crucial to record day-to-day activities as well as to establish a basic understanding of the office's cultural and social surroundings, or rules.

The observation schedule was a compact modification of a more classic ethnography, which can last for years or longer, to fit into the academic timeframe. As we turn our attention to the rationale behind the data gathering techniques employed for this project, a review of relevant scholarship on ethnography and participant observation explains how the methodology chosen is well suited to understand the organizational dynamics at play.

### **Rationale for Choosing Qualitative Methods for This Study**

In their handbook on qualitative methods, researchers Jensen and Jankowski explain participant observers, a type of ethnographer, as researchers who aim to learn the rules of a culture and to learn and interpret events and actions according to those rules (Jensen, 1991). The strength of this type of scholarly observation lies in the authenticity of the data, according to journalism researcher Singer in her 1999 comparison of ethnographic research techniques with journalistic methods. A researcher using this method, she explains, can probe deeply for meaning in a particular, real-world environment while exploring the routine, daily lives of its subjects (Singer, 2009).

Additional information also became available by proximity to the subject – in this case the Editor – being observed. In their essay “Interviewing: The Art of Science,” Fontana and Frey explain that open-ended interviews are often part of qualitative ethnographies as many of the data gathered in participant observation come from informal interviewing in the field (Denzin, 1994).

Ultimately, this type of qualitative analysis may be best suited to the subject of inquiry. Sociologist Shaun Moores declares in his 1993 book *Interpreting Audiences: The Ethnography of Media Consumption* that fieldwork is essential to understanding media use: “Critical ethnographic practice,” he writes, “best equips us to map out the media’s varied uses and meanings for particular social subjects in particular cultural contexts” (Moores, 1993).

The opportunity to study technology use in a non-experimental setting, while producing narrow data, is fieldwork that enabled the observation and recording of actual management activities and conversations that arose from being near the subject and his activities.

### **Weaknesses and limitations in the methodology**

In qualitative methodology, many studies in the genre can confirm that a singular case study will make large generalizations difficult. Despite giving the rich information central to ethnography, the highly particular data detailed and prized by sociologist Moores in “Interpreting Audiences: The Ethnography of Media Consumption” makes extrapolation problematic.

In his 1998 book, *Media Research Techniques*, researcher Arthur Asa Berger outlines this issue as one of the pitfalls that arise from a participant observation methodology. In addition to the inability to generalize and qualify one's observations, he also lists concerns over a researcher's ability to distinguish between descriptions of events and interpretation of events. A researcher becoming too close to a subject to objectively report on it is another risk associated with this type of qualitative research (Berger, 1998).

For purposes of this project, Berger's reservations can only be noted and attempts can be made to rectify potential problems both during observation and in the following analysis. It is difficult if not impossible to recognize one's own lack of subjectivity, but the observational process of detailing collaborative tool use shouldn't be affected by any lack of objectivity on the part of the researcher.

This project also is less likely to suffer from the researcher becoming too close to her subjects as it may fall prey to the converse. It is possible that the culture of a foreign newsroom, while English-language, will be so alien to this researcher that recorded exchanges and subsequent interpretations are unfounded. However, this pitfall seemed minor as the *Swissster* newsroom, while extremely limited in space and surrounded by French speaking *Tribune de Genève* staff, had the same basic patterns of news flow as other newsrooms.

Like Berger, Singer compared several academic-based ethnographic works to highlight common shortcomings of the method's application. This comparison allowed her to offer suggestions for creating more successful application of the methodology. Such an intense focus on ordinary patterns of thought and behavior, she stresses, should

be evaluated with meaning and relevance. Singer's research reinforces that while interviews are crucial, researchers need to go a step further. "Ethnography also emphasizes reflexivity, the process of reflecting, which involves an ongoing examination of what one knows and how one knows it; outcomes of that examination form part of the report" (Singer, 2009, p. 192).

This project attempted to address some of these limitations by building in time for post-observational reflection as well as additional data gathering if needed.

### **Exploring relevant ethnographic research**

Just as cultural observation rests at the cross section of many disciplines – sociology, anthropology, and journalism to name a few – so too do we find important scholarly work on the methodology across many fields. While this particular fieldwork is not a recreation of previous experiments but a collection of original data, there exists a rich history of examples from which to learn. When drawing procedural parallels, there is a wealth of research performed in the ethnographic methodology so that a new researcher can feel confident enough to attempt the technique.

Jensen and Jankowski's handbook of qualitative methodologies offers several participant observation studies as a foundation for this type of fieldwork. Jankowski describes the ethnographic research he performed at a television station in Amsterdam, The Netherlands, and how it was modeled after research undertaken by The Leicester University in 1975. Both the Amsterdam and "Swindon Viewpoint" studies involved intense participant observation and contact with the local population (Jensen, 1991).

In his 1999 article, “Doing Ethnography: Reflections on Finding Your Way,” researcher William Shaffir concurs with Jensen and Jankowski’s instructions for participant observation, suggesting that credible discovery and understanding come from insight into another’s situation (Shaffir, 1999).

The desire to understand a particular community was also the focus of a research project by Thornton and Garrett. In their research article, “Ethnography as a Bridge to Multicultural Practice,” they approach ethnography as a way to teach cultural sensitivity to students seeking a degree in social work. They found that using ethnographic research techniques on social work practice and human behavior in the social environment increased students’ knowledge, values and skills needed for practice with diverse client groups (Thornton & Garrett, 1995). While their university curriculum-based project differs from the evaluation of management in a virtual team, its design and application of the ethnographic method reinforces that this approach is exceptionally designed to facilitate a deeper understanding of another culture or community.

These studies are valuable models for the ethnographic portion of this project because of the emphasis placed on the researchers’ roles within the community. The population researched for this project is a virtual one, but deserves a similar intense study and personal contact. The physical and spatial composition of a defined community may change, but the methods for understanding its rules and boundaries are firmly grounded in a researcher’s ability to be present.

This sentiment played out in this project as well, as it became evident that the majority of insights into managing a virtual team came from casual conversation rather

than direct questioning. Over time, as the subject became more accustomed to the presence of the researcher, unprompted thoughts and habits were revealed. These are discussed in more depth in the Findings section of this paper, but reaffirm the ability of fieldwork to gather data otherwise not available.

### **A Methodology for Understanding Organizational Outcomes**

In addition to reviewing historically important ethnographic research, recent management-focused and newsroom-specific articles performed in a similar research method have particular relevance for this study. For their 2007 article, “The uses of observation: combining problem structuring methods and ethnography,” Horlick-Jones and Rosenhead find the practical function of fieldwork well suited to management processes of problem solving. Concerned with a specific method of attacking management issues known as problem structuring methods, or PSMs, the researchers found that ethnography has a heightened ability to pick up features, or nuances, in the issues which then allowed for problem solving (Horlick-Jones & Rosenhead, 2007). The deployment, or application, of a manager’s problem solving techniques can come in many forms and may be codified by the organization, but these researchers suggest it is the multi-faceted approach of including fieldwork that offers deeper insights to problem solving.

Just as reviewing this management-focused ethnographic study is useful to the general methodological use at play here because of its focus on problem solving, the following observations performed in actual newsrooms offer profession-specific groundwork for the research performed. In their 2009 article, “Making Space for a New

Medium: On the Use of Electronic Mail in a Newspaper Newsroom,” Swedish researchers Amelie Hössjer & Kerstin Severinson Eklundh put forth findings from ethnographic research performed over a period of three years in a Swedish newsroom employing around 300 full and part time staff. Combining six weeks of in-house observations with interviews and data analysis, the researchers lament the lack of newsroom-specific communication studies, citing the distinct deadline-oriented nature of a newsroom.

Consequently there have been few studies on the use of e-mail in journalistic or editorial work, where time-critical conditions and communication related to the ongoing news production are part of the observed work situation. This means that there is limited knowledge of how e-mail interacts with other forms of communication in the everyday internal work in a newsroom (Hossjer & Eklundh, 2009). While their study focuses on e-mail communication for a collocated news team, the research encourages ethnographic practice in newsroom settings by focusing on the profession-specific nature of deadline-based communication and supports the case for additional examination. Their findings are discussed further in the Literature Review section of this paper.

Boczkowski (2004) reported his findings of another newsroom-based ethnography. In “The Process of Adopting Multimedia and Interactivity in Three Online Newsrooms,” Boczkowski performs ethnographic case studies of innovation in three online newsrooms. Spending four to five months per case study, he triangulates data from interviews, observation and analysis of documents. His research, focused on the relationship between print teams and their online counterparts, differs from this assessment of virtual

teams, but is important for both its methodology and theoretical basis. To understand technology use in a newsroom, Boczkowski advocates the social–organizational perspective and mutual shaping of technological and social change theories, suggesting that technology and editorial issues are inextricably linked (Boczkowski, 2004).

Boczkowski’s implication that technological determinism is an incomplete theoretical lens for an examination of technology and its evolutionary utility is of particular interest to this research. This project is situated partly within a soft technological determinism lens, but mirrors Boczkowski’s resistance to separating technology from organizational culture. The following section includes an in-depth look at relevant theoretical lenses from historical context to specific use to this research. Boczkowski’s views are addressed and explained further in context of this research.



## **CHAPTER 3: A THEORY AT THE CROSSROADS OF ORGANIZATIONAL RESEARCH AND TECHNOLOGY**

This research lies at the intersection of organizational dynamics and technological effects research, with important implications for the areas of virtual teams and news production. While this thesis aims to produce practical findings and suggestions immediately applicable to the production of online journalism, it is important that the examination is developed through the lens of an academic theory. Situating this research within a larger academic context gives scholarly relevance to possible findings. So far, this paper has separated methodology from theory, but in his article, “Information Technology as Disciplinary Technology: Being Critical in Interpretive Research on Information Systems,” researcher Doolin insists that scholars of organizational dynamics adopt a theoretical view of technology before undertaking research involving technology (Doolin, 1998):

Technology is both a condition and a consequence of power relations in organizations and society, and in order for interpretive information systems research to be critical, the practices which surround and involve information technology need to be analysed (*sic*) in the context of a wider set of social and political relations.  
(p. 302)

At first glance, the theoretical lens of technological determinism seems to be well suited for this case study because it places technology – and its advancement – at the center of the research. Its use in similar organizational research demonstrates that it can

be applied to this type of project and bring relevance and context to the discussion of data.

### **An Evolving Theory**

In the years following the Second World War, a theory originating from the “Toronto School” of thinking focused on the significant contribution of new technology as a direct factor for social change. Known as technological determinism, this theory insists that innovations in technology – or technological revolutions – are directly responsible for social change (McQuail, 2005). While Karl Marx is occasionally accused of being a technological determinist, the list of theorists more often includes Marshall McLuhan and Sigfried Giedeon (Chandler, 1994). By offering examples of media-induced change, McLuhan perpetuated the idea that we shape our tools and they in turn shape us (Griffin, 2003).

While determinism is a strong lens through which to look, the cause and effect connection of this theory resides at the base of this research when applying a *but for x, no y* construction of causal determinism (Stanford, 2009). If not for technological innovations, then virtual, or geographically dispersed, teams cannot exist. Due to the decentralized nature of these teams, personnel management has been forced to evolve. By examining the ways a manager communicates with his team in the production of news, any reconfiguration of social dynamics may come to the forefront during this case study. Understanding that this reconfiguration is based on the evolution of technology further supports a theory focusing on technology as a basis of examination.

Applied most often on the macro level – as an examination of cultural change – the theory has received criticism in the years since its inception for drawing a direct cause and effect line from technology to change and revolution.

### **Weaknesses and Limitations in Technological Determinism**

One recent critic is Indiana University Professor Susan C. Herring, who suggests computer-mediated communication – and its research – suffers from a miscalculation of importance. Her 2004 article, “Slouching Toward the Ordinary: Current Trends in Computer-Mediated Communication,” compares five years of communication system changes and their impact on society through the lens of technological determinism to conclude technology is not as destabilizing as it is mundane: “Although this technology-driven agenda may seem justified, it suffers from a systematic bias: it overestimates the novelty of much CMC, and underestimates the effects of social forces such as mass popularization...” (Herring, 2004, p. 27). Herring’s conclusion implies that an insistence on technology as the sole agent of change, in organizational dynamics or other fields, is narrow and ignores other factors that may be involved.

Like Herring, Peters revisits the historical emphasis on the physical processes of communication dissemination. As part of the 10th anniversary of the *New Media and Society* journal, Peters attempts to define the term new media so as to affect future scholarship on media history. He uses a cautionary tone against technological determinism, deriding Lewis Mumford’s 1934 article “Technics and Civilizations” for setting an early high standard for overestimating technology’s influence. Canadian scholar Harold Innis and his student McLuhan were also quick to criticize their

predecessor Mumford for relying too heavily on the “intrinsic logics of technology” (Peters, 2009). Instead, Innis was concerned with giving too much power to media and its form, denying the notion that print media produced causal effects based on their inherent properties and technological advances (Buxton & Risa, 2006; Mullen, 2009). As first an economic theorist then a mass media scholar, the approach Innis takes toward the intersection of technology and information is explored further in Catherine Frost’s 2003 article, “How Prometheus is Bound: Applying the Innis method of communications analysis to the Internet.” A technology-focused study has a place, she argues, but it should be tempered with outside factors (Frost, 2003):

But technology is not destiny, and even Innis – often branded as a technological determinist – would hold that how things turn out is a function of how we approach the challenges involved. An application of Innis’s method to the Internet gives us reason to be concerned for the impact of the medium, but it should also caution us not to squander opportunities to improve our communications environment, or to right the time/space imbalance, when they are presented to us. (p. 21)

Innis and many others who shy away from technological determinism in its strictest form echo the balance suggested by Frost. Likewise, this project is based on the idea that the theory retains its relevance when its degree of significance is shifted within the research. As a general rule, most theories involve reductionist approaches, but determinism has the added benefit of being examined through either a hard or soft lens. To be sure, failing to use a hard lens – the idea that technology directly relates to social revolution – reduces the ability to compare findings with societal or organizational revolutions and narrows the bearings of the data. Soft determinism is, in a sense, not

determinism at all, reducing causal effects to contributing factors. However, a review of similar research grounded in the soft form of the theory further shows how a form of technological determinism is compatible with the narrow focus of organizational dynamics.

### **Technology As a ‘Building Block’ to Organizational Dynamics Research**

In attempting to create a working definition of technology, researchers Fleck and Howells created the idea of a “technology complex” that comprises all the physical and cultural uses of technology. While their research is focused in the field of engineering, they similarly caution against overestimating the nature and scale of technological advancements, warning most are either abandoned early or never fully utilized (Fleck & Howells, 2001). This judgment of productivity as it relates to communication technology advancements perpetuates the deficient nature of hard determinism.

Tushman and Anderson focus their 1986 research on a principle similar to soft technological determinism, arguing that while technology is but one of many factors driving change, it is a key building block to understanding how organizations evolve (Tushman & Anderson, 1986). The researchers apply a technological deterministic theory to their comparison of three disparate competitive industries over time, suggesting that one must first study technology before future organizational research: “If organizational outcomes are critically influenced by the context within which they occur, then better understanding of organizational dynamics requires that we more fully understand determinants of environmental change” (p. 440). Their comparative analysis of cement, airline, and computer production industries measures each firm’s growth in

relation to adoption of technological change, underlining the relationship between what they call determinants of change – technology – and organizational dynamics – leadership and management. Tushman and Anderson imply technology is but one factor of change.

While not media management-specific research, Tushman and Anderson's attempt to situate business growth by tool use through a soft technological determinism lens mirrors the idea that technology is an agent of change in virtual team organizational dynamics but that the single theory alone has its shortcomings. Similarly, the case study performed for this research project aims to understand organizational dynamics through the application of a comparably intertwined theoretical approach.

### **Technology and Organizational Research: 'Inextricably Related'**

Researcher Orlikowski takes a similar view in her 2007 essay, "*Sociomaterial practices: Technology at Work*," arguing that neither a completely technology-focused nor human-focused theory best suits modern organizational research (Orlikowski, 2007). Instead, she suggests an interactive focus (emphasis in original):

Moving beyond these conceptual difficulties and conventional approaches requires a way of engaging with the everyday materiality of organizational life that does not ignore it, take it for granted, or treat it as a special case, and neither does it focus solely on technology effects or primarily on technology use. Such an alternative view asserts that materiality is integral to organizing, positing that the social and the material are *constitutively entangled* in everyday life. (p. 1437)

Orlikowski uses two case studies – exploring the algorithms inherent in Google's search engine and an investment firm's use of the mobile communication tool Blackberry

– to explain how technology and social dynamics are entangled inextricably, thus requiring a new alternative lens for technology-based organizational dynamics research. Dubbing this shift a sociomaterial lens, it encourages researchers to intertwine the multiple facets of technology use and organizational culture in data gathering and analysis.

It is understandable that the pace of technological advances in recent history has created new and variable outcomes generating a shift in theoretical lens relevancy. It seems appropriate, then, to recognize the evolution of theories, in this case from a strict technological determinism to its soft form to the mesh of sociomaterialism, as guidance for this project. This case study attempts to recognize a virtual teams' inherent reliance on technology while attempting to intertwine the impact a culture of management may have on the production of news.

The theory of sociomaterialism plays the critical role of bookends to the volumes of information developed during an ethnographic study: For a virtual team, whose culture of management is based on diffusion and mobility, the theory will act as both the filter through which the data is examined as well as the basis for prospective modifications in online management. In between lies the data, or “literature,” gleaned from participant observation.

## CHAPTER 4: LITERATURE REVIEW

It is the aim of this research to use findings from such a narrow case study to advance the available research and discussion on virtual team management tools. The ethnographic research outlined previously produced half of the data necessary for the culminating professional analysis. The information gathered during participant observation and structured surveys are then compared against available scholarly articles examining technology available to manage virtual teams. While there is limited case study research focusing on news-producing virtual teams, there have been several recent organizational studies performed with specific software, such as Warkentin's team ethnographic observation on the use of MeetingWeb™ in experimental virtual teams (Warkentin, et al., 1997).

This and several other cross-disciplinary management studies offer substantial insight to specific management software but are not necessarily linked to media management applications. Therefore, following this literature review of tool-based experiments, a deeper review of data gathered during observational fieldwork at *Swisster* is outlined in the Findings section with an attempt to synthesize the dual research materials in the culminating professional analysis.

### **Collaborative Tools and Organizational Dynamics**

When people communicate through technology, they are not simply sending electronic messages but also performing social acts that have meaning in a larger



organizational context (Fulk & DeSanctis, 1995). In their paper, “Communication Richness in Electronic Mail: Critical Social Theory and the Contextuality of Meaning,” Ngwenyama and Lee approach computer-mediated communication from a critical social theory perspective. In an intensive investigation of managerial use of e-mail in a company, they describe communicative action as being concerned with achieving and maintaining mutual understanding among all those involved in a coordinated situation (Ngwenyama & Lee, 1997). They underscore that a related dimension to computer-mediated communication is an emphasis on people, who, as actors in a social or organizational context, themselves process data into information. The actors, the researchers suggest, simultaneously enact existing and new relationships with one another as they communicate. Ngwenyama and Lee’s review of the critical social theory perspective points us toward a multi-layered view of interaction in electronic media similar to the sociomaterial lens at play here.

Other research explored in this paper will similarly suggest that reliable communication – based on patterns of dependable execution – is key in developing the soft skill set of communication. Thus, e-mail and other communication tools are of utmost importance in forming organizational relationships. Networks foster social relationships, and these relationships are key to a team’s success.

### **Managing virtual teams.**

Organizations that employ virtual teams can benefit from the scholarly research that outlines the peculiarities of dispersed team relationships. An area studied under many

theories – media richness, social interaction and technological determinism, to name a few – virtual team organization and management requires measured approaches.

In the recent study of more than 80 globally-dispersed software development teams, “How to Manage Virtual Teams,” the researchers conclude that virtual team management involves greater challenges but comes with greater rewards:

Virtual teams that had processes that increased the levels of mutual support, member effort, work coordination, balance of member contributions and task-related communications consistently outperformed other teams with lower levels. (Siebdrat, Hoegl, & Ernst, 2009, p. 65)

Creating a team that communicates effectively, they posit, is of equal if not greater importance than a team’s hard, or technical, skill set. They place great emphasis on the processes of communication, reinforcing the importance of this collaborative tool research.

Incorporating the concept of network-created social relationships into communications within virtual organizations is the 2009 research, “Can You Hear Me Now? Communication in Virtual Product Development Teams.” Using the lens of a social dynamic media theory, which emphasizes a social construction of character through technology use, the research suggests that Internet communication technologies play an enabling role in virtual teams, allowing for the development of relationships (Montoya, Massey, Yu-Ting Caisy, & Crisp, 2009).

For any project team, social relationships are based in part on member confidence. In their work with widely geographically dispersed teams in “Communication and Trust in Global Virtual Teams,” researchers Jarvenpaa and Leidner focus on the amount of trust

among virtual team members, including how to develop that trust and what communication behaviors may facilitate the development of trust. Managers, they suggest, need to clearly define responsibilities, provide guidelines on how often to communicate and, more importantly, they themselves adhere to a regular pattern of communication. This will give team members a sense of complementary objectives and share in the overall aim of the team. Likewise, participants should engage in an open message exchange. It's not the quantity, but the quality and predictability of communication that is most critical to the effective functioning of the team (Jarvenpaa & Leidner, 1999).

Scholarship led by renowned social network researcher Barry Wellman corroborates the benefits of technological advances for these critical team relationships. His 1996 research, "Computer Networks as Social Networks: Collaborative Work, Telework, and Virtual Community," focuses on instant messaging, or IM, for virtual teams. An open communication climate, his research suggests, removes status cues and barriers and creates connections (Wellman, et al., 1996).

It can only benefit management, then, to continuously review and improve the technological networks allowing for free-flowing communication.

### **Choosing technology: suggestions for managers.**

A central question within tool use and its impact on the editorial process is the examination of what types of technology are available to manage a geographically displaced team and what available research tells us about the efficacy of these

collaborative tools. However, we must also ask the question of how to choose among the myriad applications available.

A group of researchers in Finland examined this question in their 2006 ethnographic research, “Team Leaders’ Technology Choice in Virtual Teams.” Sivunen and Valo cross-reference three types of empirical qualitative evidence – in-depth interviews, content analysis and observation – to study virtual team leaders and their choices of technology for their virtual teams (Sivunen & Valo, 2006).

Estimating that as of 1999, more than 9 million workers in Europe were part of some form of virtual team, the researchers narrow their focus to four geographically dispersed teams using rich and lean communication technologies such as e-mail, telephone and videoconferencing. They stressed the importance of fieldwork for this type of study, noting that a drawback of academic-based experiments is that they often use students who lack prior knowledge of other members and general work processes.

Their observational conclusions arrange managers’ technology choice as being affected by four factors, two of which are social – accessibility and social distance – and two of which are task-related – ideas sharing and informing. From these, however, they signaled ease of use as the most important: “Accessibility was one of the most important factors behind the virtual team leaders’ technology choice, and the leaders chose different technologies according to people’s ease of access through that medium” (Sivunen & Valo, 2006).

The researchers found that managers also divided technology choice by depth of task and richness of medium. Simple, one-way communication proved easier to handle

through e-mail while more complex issues demanded a richer medium. Familiarity was also important:

E-mail is a good medium for documentation, and it has retained its status in organizations. Because of the simplicity of the medium and its established place in the daily routine, e-mail will probably maintain the position it has gained as an important communication tool in virtual teams. (p. 66)

Overall, Sivunen and Lee found that virtual team managers repeatedly chose their type of technology based on the type of task to be performed. It is important to note that as of this writing the Finnish study is only three years old, and the constant development of new software and applications further reinforces the need to review communication tools. In three years' time, the popularity of e-mail has not faded but the availability and use of other collaborative tools has risen. However, Sivunen and Lee's prediction that e-mail will continue as the dominant form of technology-based communication – even in the face of richer tools – proved intuitive for the case study of this research project.

Published just one year after the Finnish study, the 2007 book, *Managing Virtual Teams: Getting the Most from Wikis, Blogs and Other Collaborative Tools*, reinforces this point. Brown, Huettner and James-Tanny chart the features and uses of a wide spectrum of collaborative tools and offer advice for virtual project management. Instead of performing narrow academic experiments, the authors organize tools based on team and project needs. They would not recommend a specific tool, they insist, without first performing a needs analysis, asking four questions:

- What are you trying to accomplish?
- What are your current capabilities?

- Who is on your team?
- Which tool is appropriate for each task?

(Brown, Huettner, & James-Tanny, 2007)

Similar to the research performed by Sivunen and Valo and the social and task-related categories for communication choice, their handbook organizes a nearly overwhelming choice of technological tools – most of them online-based applications – based on a task-oriented decision model.

For managers leading a virtual team, these guidelines can be used as a framework for understanding the *how* of choosing communication technology. The generalness of the guidelines, however, lacks detailed information that more precise analyses of available software can offer.

### **Tool-Specific Research: Exploring Computer Supported Work Teams**

Specific software developed to aid in the management of virtual teams is a relatively new phenomenon, and the research associated with it is equally immature. That is to say the volume, not importance, of existing work is underdeveloped. This section aims to first identify available research on specific software and technology tools and then compare results for commonalities and insights. The research examined here is from scholarly analyses of IBM's Lotus Notes, Microsoft Office's Meeting Web and Net Meeting, all software applications that organize team tasks and documents through a central location where all members can access important documents, track progress made, assign tasks, and provide calendars ("Virtual Team," 2009). In addition, examinations of non-software-specified tools are included for comparison.

The software applications examined here are in no way an exhaustive list of available communication technologies; new applications such as Google Wave, Grouputer and Thinktank are absorbed into the market constantly, and online tools such as Wikis, Web logs and podcasts are increasingly important to the management of virtual teams. Available technology will most likely always outpace the academic research on it, and often with good reason. The market is as good an indicator of efficacy and ease of use as academic experiments, though scholarship has the added benefit of controlling factors.

### **Lotus Notes.**

Also taking the position that academic research is not keeping pace with available communication tools is the 2003 research article, “Because Time Matters: Temporal Coordination in Global Virtual Project Teams,” which laments a paucity of research on different-time/different-place teams supported by asynchronous technology (Massey, Montoya-Weiss, & Yu-Ting, 2003).

In an attempt to remedy the limited availability of research, Massey et al. performed group communication research involving a simulated business project. Participants in 35 global virtual teams in Japan and the United States communicated solely via Lotus Notes, a widely used groupware system that enables geographically distributed team members to share messages and engage in trackable discussions. Lotus Notes was chosen, in part, because it supports threaded, asynchronistic discussions:

Notes classifies entries into main topics and responses, where a response is a document attached to the entry to which it refers. Every message has a time stamp and reveals the identity of the author... Accessible via a Web browser, the team forums were

designed with ease-of-use in mind and differed according to the experimental conditions. (p. 135)

Following the project simulation, the researchers coded discussion threads into three categories: communicative, decisional and interpersonal. Next, a content analysis of the discussions compared rationale, or organization and depth of communication, to analyze the teams' performances and, effectively, the software's benefits. In results that will prove to be common in this type of tool research, the authors offer a review and critique of the specific software but also stress the importance of situating their results within general team interaction. They suggest Lotus Notes, as a process structure, was effective because it positively influenced coordination and team interaction in such a way that team performance benefited. But management efforts, such as organizing operating procedures and establishing a rhythm and pace of communication, prove just as – if not more – important to team success:

We found that temporal coordination per se is not the driver of performance; rather, it is the influence of coordination on interaction behaviors that affects performance. The presence or absence of deadlines, coordination, and regulation of interaction flows get 'played out' in team interaction processes. (p. 151)

Their research suggests, therefore, it is the team structure and management of deadlines as much as the specific communication system.

The controlled experiment conducted by Massey, et al. was beneficial to the larger collection of tool analysis because the controlled experiment eliminated other communication factors to focus on the tool – Lotus Notes – thus giving results more direct relevance. The participants chosen, however, were students and in general lacked



prior work experience, so team behavior and communication processes could have been influenced by their lack of familiarity. As the researchers state in their conclusion, more fieldwork is needed.

### **Meeting Web.**

Two other academic teams focused their research on specific collaborative software from Microsoft based on the accessibility of the applications.

Warkentin's team examines MeetingWeb software and first notes the shortcomings in previous virtual team communication studies in the 1997 article "Virtual Teams versus Face-to-Face Teams: An Exploratory Study of a Web-based Conference System." Many recent academic articles are limited, it says, because group members are not given enough time to adapt to one another and because synchronous technologies, even though they are less common in the business world, are more often studied than asynchronous technologies such as e-mail and discussion forums (Warkentin, et al., 1997).

In an effort to remedy these perceived shortcomings, the researchers gave several three-member teams an intellectual task, or a logic problem that has a correct answer to it, so that researchers could focus on communication processes that occurred through MeetingWeb rather than on the task itself for the findings. The researchers narrowed their conclusion to two important findings:

While collaboration technologies have the capability of creating a communication environment for virtual partners who are separated by time and/or space, they may hinder the development of a strong sense of cohesion and satisfaction with the group's interaction process. Second, the strength of relational links is positively associated with the effectiveness of information exchange. Therefore, the loss of relationship building in virtual teams implies

that the use of traditional meetings as a supplement to the use of CMCS might be useful for creating a sense of belonging to a group. (p. 990)

Essentially, face-to-face communication, especially during developmental phases, is still extremely important to virtual groups. As a specific collaborative software tool, the researchers found that Meeting Web offers some positive uses but team communication processes matter more than the software's benefits.

### **NetMeeting.**

With similar findings on the importance of communication patterns, a group of The Netherlands researchers examined Microsoft's NetMeeting conferencing software in their 2003 article, "Virtual Teams and the Appropriation of Communication Technology: Exploring the Concept of Media Stickiness." In their examination of six globally dispersed teams of engineering students, the researchers found that initial communication patterns and richness of media were adhered to throughout the experimental process, despite availability of several types of rich and lean and synchronistic and asynchronistic media (Huysman, et al., 2003). This suggests that, similar to Warkentin's findings, the early development stage of communication patterns and communication leadership has staying power, and is more crucial to team development than type of software.

### **LISTSERVE.**

Another review of a specific online tool that strengthens fundamental team dynamics while addressing the exceptional needs of teams dispersed geographically is Dan Gillmor's examination of a LISERVE, or an electronic mailing list. In his 2004 book,

*“We the Media: Grassroots Journalism By the People, For the People,”* Gillmor defines listserves as serving a specific – usually private – community, being narrowly tailored and received by being “pushed” into subscribers’ mailboxes. He notes the importance of a mailing list has not been lessened by the popularity of other communication technologies, such as weblogs, and stresses that the value of a mailing list should never be underestimated (Gillmor, 2006). The value of an electronic mailing list lies in its ability to foster interactions among a group of users, thus creating a network. As the scholarship has suggested, communication technology that creates a network pays dividends for those connected to it.

This software- and tool-specific research relates to the dual nature of understanding collaborative technologies because it suggests that even within narrow studies, findings inevitably return to general task orientation. It is also clear that there is room for significant continuation in the study of collaborative tools in general and media management in particular.

### **Technology Use in the Newsroom**

The above specific-tool research focuses on industries capable of early adoption of technologically advanced tools and applications, such as the field of engineering, or is part of academic research that is capable of creating artificial virtual teams in controlled settings for other industries. In an attempt to align more closely with the news production focus of this study, the examination of two recent studies on media management and tool use offers some insight to newsroom technology use, despite lacking a focus on virtual teams.

One research study offering particularly relevant methodologies, theory and examination of tool use is Master's recipient Maria Ines Miro-Quesada's 2007 thesis, "Online Technology, Convergence and Organizational Transformation Process in the LJWorld.com, a Case Study." Miro-Quesada delves into the process associated with creating an online component of a newsroom and the changing organizational dynamics associated with such technological change in newsroom management. Using a case study approach to understand the stages of change at LJWorld.com, she emphasizes the importance of triangulating the exploratory qualitative research of field observation with semi-structured interviews and document analysis during her results.

Focusing on the evolution of the company's organizational structure during a time of transformation, the research is balanced through two lenses of technological theories, the Mutual Shaping of Technology and Society and the Organizational Transformation and Development theory, which is borrowed from business and management studies (Miro-Quesada, 2007). The former focuses on technology as an agent of social change while the latter proposes that technology alone cannot change without human agents.

Miro-Quesada states immediately in her review that there is not a large breadth of previous investigations available that followed media companies through the shift from print to online publications, and even fewer studies available outlining the organizational implications for this new media. Since her 2007 study, researchers have continued to produce work on the subject, but it is an important reminder that for as new as technology-based changes are to the field of organizational dynamics, the research into the phenomenon is even newer. During her examination of scholarly resources, Miro-

Quesada draws heavily from Boczkowski's 2005 book *Digitizing the News* for media organization hierarchy research, an author also examined in the Research Design and Methods section of this paper for his ethnographic newsroom research on the relationship between print teams and their online counterparts.

She states that while the type of information gleaned may lack the ability to be generalized, this type of in-depth study can allow for greater insight, especially to the hows and whys of structural change. Echoing Boczkowski's sentiment, she suggests that technology can create only so much change: "Technology enables change but doesn't guarantee it. Companies that want to succeed in the digital world must go through organizational change" (Miro-Quesada, 2007).

Another very recent study on technology use in an actual newsroom is the 2009 research from Sweden, "Making Space for a New Medium: On the Use of Electronic Mail in a Newspaper Newsroom." As discussed briefly in the Research Design and Methods section of this paper, this study used ethnography, interviews and data analysis over a period of three years in a Swedish newsroom to examine the use of e-mail within the specific profession (Hossjer & Eklundh, 2009).

Although ignoring any interactivity with other communication technology, such as instant messaging or phone use, the study's emphasis on the time-sensitive communication processes associated with news production makes it relevant to this project's point of view. While their study only weighed e-mail versus face-to-face communication, the findings are relevant given the ubiquitous use of e-mail in the case study of this research. With a focus on the time-critical conditions of news work, the

researchers' suggestion that the main factor in determining a medium's effectiveness relies on its ability to create a shared context for communication is a core concept for much media richness research (Zack, 1993).

## CHAPTER 5: FINDINGS

Similar to available technology-based research and experiments outlined above, this project examines media efficacy to some degree, in context of tool choice and organizational structure through observational data gathered in the *Swisster* newsroom. As outlined in the section Selection of Case Study: Choosing the Virtual Team at *Swisster*, the case study site was chosen for its accessibility, English-language staff and organizational set up as a dispersed news producing team.

During a period of two months in early 2010, I observed in the *Swisster* newsroom over 17 separate observational periods, or the equivalent of three full working weeks and two days. The observations took place during February and March over varied weekdays to randomize the results and accommodate schedules. The main focus of the observation periods was on the communication tools used by the Editor during the process of the production of a daily newsletter. This newsletter, an amalgamation of the morning's news stories, was pushed into subscribers' e-mail boxes around noon each day.

A survey was also administered to the *Swisster* stringers through an anonymous site, Survey Monkey, in the month of March. The respondents were given three weeks to complete the survey. (See Appendix I) The data outlined and examined below come from observational notes, such as direct quotes, and field notes, such as observational and analytical notes taken during observation (Baker, 2006; Polit & Hungler, 1987). The results of informal interviews and survey responses are also noted.

## **Organizational Structure**

The last few years have seen an unprecedented downturn in the U.S. media industry, with journalism job losses at three times the rate of the average job losses in the general economy (Anonymous, 2009). Global news sites are feeling similar financial difficulties, and the *Swisster* budget was cut drastically at the end of the 2009. By the start of this project a full-time staff of six had been downsized to two. During the observation period, however, the former full-time position of Web Master, open for three months, was filled with a part-time employee. No other staffing changes occurred.

### **The *Swisster* team.**

The two remaining full-time employees are the Editor and an Assistant Editor. Both write stories on a near daily basis in addition to editing copy and performing administrative tasks. Only once during observation were they in the office at the same time, as the Assistant Editor prefers to work from home and can do so as long as the Editor is in the office. Photographs can only be loaded to the news Web site through the main system; one person must be directly logged on for the output of the newsletter. Due to the recent budget cuts, all other contributors to the *Swisster* news site are on a freelance basis, meaning they are paid per article published. Eight freelancers are listed on the Web site as part of the team, and during the observation period a core group of about four stringers contributed and communicated with the Editor on a daily or near daily basis. Six responded to the survey.

The *Swisster* organization is under the Digital Development department of Edipresse, and the Editor reports to its department manager. The Editor is requested to be in



Edipresse's home office in Lausanne, Switzerland, about 45 minutes from Geneva on train, for weekly or bi-monthly meetings with the department manager. While in Lausanne, he produces and sends the daily newsletter from that office.

**Tools accessibility for *Swisster* team members.**

The tools made available from Edipresse to the two full-time employees of *Swisster* are a Dell workstation, which includes a 12-inch monitor, keyboard and laptop docking station, a Dell laptop and a desk phone. The Editor also received a Blackberry phone but chose to upgrade it to an iPhone and personally pay the monthly difference. The parent company was paying for the phone bill for the Assistant Editor until the budget cuts at the end of last year. The implications of this are discussed further in the section Data Analysis.

The team has access to two digital audio recorders, one of which the Editor keeps and the other of which can be loaned to stringers as needed. A video camera and studio are also available in the *Tribune de Genève* office site, though not used because there is no staff member with video technical skills (Editor). Besides the ability to borrow the digital audio recorder, there are no other tools made available to the stringers from the company. See Appendix II for a visual representation of the *Swisster* newsroom.

In addition to the hardware listed above, each Dell workstation includes the software from Microsoft's office suite, including the e-mail exchange server Outlook and Windows Live Messenger for other communication capabilities. Windows Live Messenger allows inter-computer voice or video chat as well as IM, or instant messaging, and file sharing. The Assistant Editor's computer monitor is equipped with a Logitech

brand camera attachment. He explains that when the team was at full staff they attempted videoconferences. “It’s a novelty, but when working it’s not very practical.” (March 8, 2010).

In the social media realm, the news site has both a Facebook fan page and a Twitter account. The Facebook page is automatically populated with headlines and links from the newsletter, but not photographs. The Editor expressed frustration with being essentially non-existent in the social media realm. In the past year, traffic to the non-subscription portion of *Swisster*’s Web site has been down 20 percent from the previous year. He sees Twitter and Facebook as ways to increase traffic, but explains that besides this automatic population there is no manual use of social media tools due to staffing reasons. “We have a Twitter account, just no one dedicated to doing it” (March 3, 2010).

## **Expectations**

A general overview of expectations for staff and stringers is outlined here to give background information and create context for the following discussion and conclusions stemmed from observations.

### **“It’s more of a news magazine ...”.**

According to the Editor, the general work expectation for team members is that they find their own stories and write to an approximate 400-word count. The team members, loosely defined as the freelance stringers who consistently send in articles for the *Swisster* site, are expected to communicate in a timely manner and have been made aware of the deadline for the newsletter (Editor, personal communication, February 3, 2010).

Once the Editor has given the go-ahead for an assignment, a stringer will file via e-mail in time for the noon newsletter deadline. No follow-up communication, such as a phone call, is expected after submission (Survey response). If this deadline is missed the article may go up on the site at a later time in the day, or saved for the next day, depending on the content.

There is no expectation for weekend output of news or updating of Web site, therefore the staff members and stringers work Monday through Friday. The Editor explains it is not a hard news outfit: “It’s more of a news magazine than an electronic newspaper.”

Other than a noon deadline for the newsletter – which is seen as somewhat flexible – there are no rigid requirements for office arrival and departure. In general, the Editor arrives in the *Swisster* office between 7 a.m. and 8:30 a.m. When the Assistant Editor was required to be in the office due to the Editor’s absence, he arrived between 9 a.m. and 9:30 a.m.

## **Communication**

When detailing the communication patterns and tools used, usage marked and explored here is directly related to team management and newsletter production. A phone call, for example, made from the Editor to a source for an article or received from a family member would not be counted in these totals.

### **E-mail is king.**

General communication patterns at *Swisster* are based on a series of unstructured and informal conversations, the large majority of which take place via person-to-person e-mail exchanges. For work production, the Editor's day-to-day communication tool use is decidedly e-mail oriented. An average of six e-mails were sent and eight were received daily during the newsletter production process. When asked, the Editor said he uses SMS, e-mail and phone as tools to communicate with his team, though throughout the observation period he received only one SMS – from the Geneva Police Department with a media alert – and no text messages were sent from him.

The tools used by the stringers are highly similar to the manager's tool use. The survey respondents overwhelmingly communicated with the Editor via person-to-person e-mail from a fixed location, such as their home computers:

“I query and file via e-mail. Most stories are approved via e-mail; occasionally I get a phone call if the editor has a question.”

“When I pitch I e-mail the editor. He responds via e-mail and then, to file my story, I e-mail.”

“When I have an idea for an article, I e-mail the editor. I then file the story by e-mail.”

“I normally e-mail from my home computer. The total number of messages involved between me and *Swisster* is usually four – more if something needs to be clarified.”

“My e-mail account is web based so I occasionally communicate with the editor, via e-mail, from anywhere where I happen to have Internet access. Majority of e-mails are sent from home where I work. I do not use a phone to send e-mails.”

“I send messages from my home computer. Normally, there is one e-mail with my idea, another with the ETA and a third with the actual story attached.”

Using a mobile phone as a multi-media tool varied by stringer. When asked in the survey if his/her personal phones were capable of and used for e-mail purposes, cost was cited as a factor:

“It is, and occasionally I do, but only if it’s urgent. My phone isn’t very convenient for writing emails. It’s six years old and I pay as I go.”

“Yes, iPhone; I use Gmail.”

“It is capable but I never use it.”

“Yes, can send e-mail but too spenny (expensive) so I don’t.”

“It is but I never use it.”

“An absolute necessity as I am often on the go.”

When asked if a landline or mobile phone was used for verbal communication, the responses were “seldom,” “rare,” and two answered that they never speak on the phone for work-related tasks (Survey responses).

For the Editor, the desk phone was used – to make or receive a call – on average only once per observation period, and nearly half of the days it wasn’t used at all. At least twice during observation periods in the office, the Editor used his iPhone as a handheld directory; he looked up a phone number on it but then used the desk phone to make a call (Feb. 17 and Feb. 24, 2010). In 17 observation periods, the Editor used the phone to

make an outgoing call five times. Its infrequent use offers insight to the tool's functionality.

The Editor, understanding it was being counted in observation totals, offered this explanation while picking up his desk phone: "I'm using the phone because I'm pissed off." Upset that information he deemed critical was missing from a stringer's story 40 minutes before the noon deadline, he went to the phone – first his iPhone to find the number – to solve a news problem. Ten minutes later he used the phone again when a technical problem kept him from publishing a story: "I'm calling (Assistant Editor) to see if he can publish this story." In these cases, the urgency of an approaching deadline required a tool shift. Immediacy was also the main theme in two other phone contact initiations. The Editor used the phone two minutes after the newsletter's noon deadline to reach a stringer to ask for an edit to a story and resend. He held off the publication of the newsletter until the issue was resolved. Similarly, upon learning from the news wires that demonstrators were at that moment protesting in front of the Geneva United Nations headquarters, the Editor placed a call to the stringer who had possession of the other available audio recorder to see if he was available to cover it. The stringer wasn't available and later called back to say he was out of town.

### **Meetings: "I don't see the benefit."**

Currently, there are zero meetings or formal work-related gatherings among the *Swisster* team members. Weekly phone and in-person meetings were attempted when the site launched in April 2008, but their length, among other things, posed a problem. Adding to the frustration for team members attending the meetings was the fact that they

took place in the parent company's home office in Lausanne, Switzerland. At the time, only one staff member was located in that city.

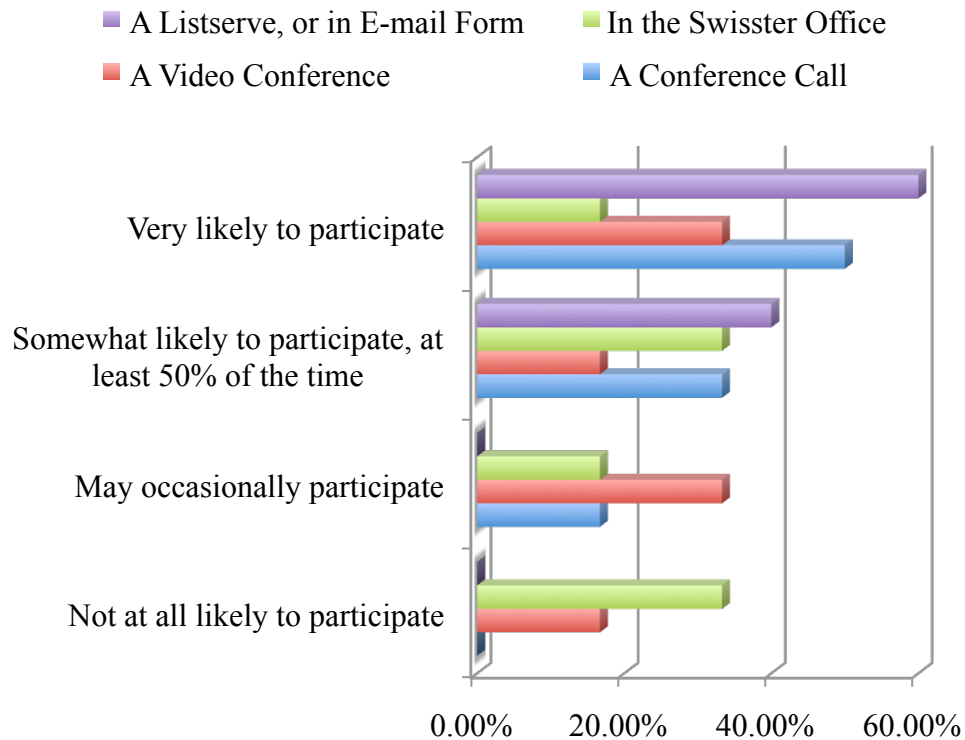
“It was generally understood that they (the meetings) took too long” (former Editor, personal conversation, July 2009).

“Sometimes he (former General Manager) wanted them to last for three hours so he could look productive. But we had work to do. With a small team you've got to keep those meetings to a minimum. Maybe we're at the other extreme now. It's a bit fly-by-the-seat-of-your-pants. Even a weekly e-mail would be good now” (Assistant Editor).

The current lack of structured meetings seems to be both a management directive and implication of staffing organization. When asked if he wanted more meetings with the team, the Editor acknowledged the duality of the problem: “Yeah, that would be ideal, but it's stringers, not full time staff of employees” (Feb. 3, 2010). However, one month later he expressed a personal disinterest in adding more structure: “(Meetings) would make everything less flexible in a way. I don't see the benefit” (March 3, 2010). By contrast, the six stringers responding to the survey indicated a much stronger interest to communicate as a team throughout the news production process. However, distance for a dispersed team was still listed a negative factor.

## INTERACTION WILLINGNESS BY MEDIUM

If there were a weekly meeting led by the Editor where you could get a feel for assignments, hear general Swisster updates, and interact with other stringers, please rank how likely you would be to participate if the meeting were:



(Survey responses: 6)

Overall, the stringers responded with willingness to interact on some level, with all willing to participate in a weekly e-mail led discussion at least half of the time. Half, or three of the respondents, expressed a willingness to participate in a weekly conference call. Their comments on the choices:



“Distance between Geneva and Ticino prevents me from participating in a face-to-face meeting. This is the only reason I selected ‘Not at all likely to participate’ ”

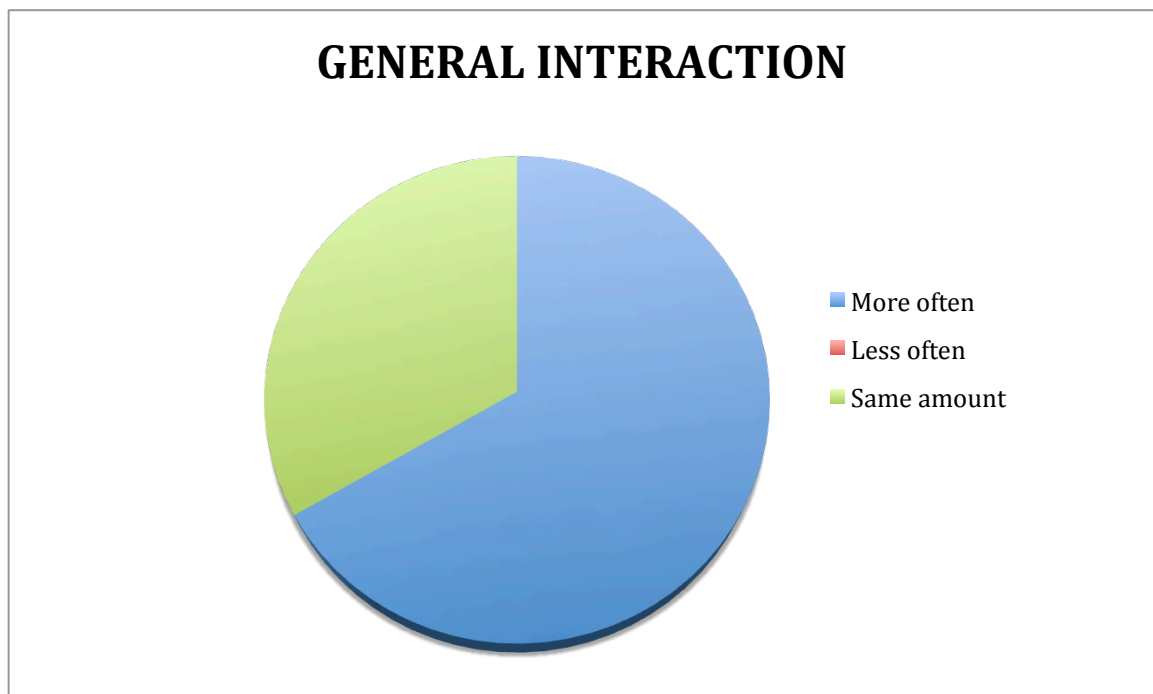
“I would only participate because the editor wanted to do it. This does not mean I think it is necessary.”

“My situation is somewhat unusual, since my specificity is \*\*\* and I go out of my way to provide *Swisster* with entirely original content (very little is based on press releases), therefore topics that I find and research myself. But I believe we could all benefit from knowing what the others are doing. It always comes as a surprise.”

“Not sure why a video call is necessary, but a telephone chat sounds like a good idea but maybe once a week, no need for a daily conference surely – and no time either!”  
(Survey responses)

### **Other interaction and feedback.**

The Editor says he gathers the group twice a year for a social outing for which he personally pays the bill. “It’s not really a meeting, but I start out talking to them, telling them how it’s going to progress. General management feel-good things” (Editor). Any other internal team communication is left to the stringers’ personal inclination. When asked how often they would like to interact with other stringers, in relation to current general interaction, four of the six respondents indicated they would prefer more communication.



(Survey responses: 6)

The other 2 respondents indicated a preference for the status quo, and no one chose the option of interacting less than the current amount.

“I interact with other stringers fairly seldom, but sometimes exchange e-mails to comment on their stories or to seek/share tips.”

“I do not interact with other *Swisster* stringers, only with the permanent employees.”

“Never. It has never been proposed and though I recognise a couple of names as people who write for other mags (magazines) etc. that I write for. I have yet to meet any of them.”

“I don’t, except to send personal messages of encouragement. Intercommunication is a problem.”  
(Survey responses)

Lack of internal communication, outside of the twice-yearly social outings, also holds true for feedback and evaluation processes, and likewise rewards or consequences. As an example, during one observation period the Editor was waiting on a promised article from a stringer. It didn’t come in before the newsletter’s deadline or during the observation period. When asked during the next observation how one manages or reprimands a stringer in a case like this, he responded that he sent an e-mail later in the day when it didn’t come in, and the article came in eventually. He pointed to the team structure – lack of full-time staff – as part of the difficulty in managing expectations: “I bark a lot, but don’t bite. There’s no benefit to it. And it doesn’t really matter if the newsletter goes out at 12 or 12:30 (p.m.)” (March 3, 2010).

## CHAPTER 6: ANALYSIS

The following section applies the research questions formed at the beginning of this project to the information gathered during fieldwork to form a basis of discussion and exploration of possible conclusions. Additionally, patterns and structures observed during fieldwork are also compared with the conclusions from the tool-based scholarly research outlined in the Literature Review. It is hoped this type of evaluation better places the findings from this research within a larger academic context.

### **Research Question 1: On what basis are tools chosen?**

#### **Observation.**

For both the Editor and the team of stringers, reported tool use during newsletter production changed when time became a factor or while in transit. In addition to the previous example of using his desk phone while feeling pressure – “I’m using the phone because I’m pissed off.” – the Editor used a laptop – either given to him by the company or his personal one – when it was necessary to be away from his workstation and still put out the daily newsletter:

“You can dock this (Dell laptop) into the system there (Edipresse’s home office). But it doesn’t work on the train, for whatever reason, so if I need to take a longer train ride, not the 40 minutes to Lausanne, I take my Mac (personal laptop) to a hot spot in 1<sup>st</sup> class and work from there. I’ve done that several times” (March 3).

However, for the stringers and Assistant Editor, there was an added factor of cost cited for tool choice. A willingness to communicate more often and report stories differently came to the forefront when asked how and if they would use a multi-media tool if one were paid for by the parent company:

“I already use an iPhone. I would use it more if Edipresse was paying the bill.”

“I’d probably communicate more on the fly, especially if I didn’t have to worry about the cost of sending and receiving messages.”

“It may change how I communicate with the editor IF I were writing more stories. I may find ideas coming to me more regularly and may decide to simplify my pitches. ... I wouldn’t have the patience to write anything other than a short email via an iPhone. I don’t see how my reporting of stories would change – I write features of interest which involve research, calls to sources, etc. I am at my happiest at home in my study...”

“Yes they are wonderful, free email v (very) useful.”

“...it would change my life because I work with an HTC touch (brand) that is not at all user friendly.”  
(Survey responses)

Similar to the stringers, the Assistant Editor suggested personal cost directly affected his tool choice. Even though a full-time employee, his choice to remain out of the main office the majority of the time means he is responsible for the cost of his tools:

“(Edipresse) used to pay for my phone but with recent budget cuts stopped. I filed a formal complaint to upper management but to no avail. If I’m at home I hesitate before calling London for a source. From here (the office), you don’t even think about it.”

This insight not only speaks directly to tool choice analysis for a team structured such as this one, but also provides commentary on how a constant personal cost calculation may affect the production of the newsletter.

### **Discussion.**

While the Edipresse computers are equipped with software that enable richer, synchronistic communication, such as video conferencing, the staff members and stringers consistently used e-mail as an asynchronistic, text-based medium from a stationary office.

In their research, “Team Leaders’ Technology Choice In Virtual Teams,” Sivunen and Valo outline four factors affecting technology choice, and further divided these between social factors, such as accessibility and social distance, and task-related factors, such as idea sharing and informing. Their finding that managers consistently designated the social factor of accessibility as the most important in tool choice suggests it is not simply the availability or presence of a tool as much as a tool’s ease of use to all team members. However, they did also emphasize how a manager’s preference weighs in the determination of technology choice:

It may be that the personal characteristics and preferences of the leader or his/her skills in using technologies influence the communication technology choice at least when there are more media available. (p. 66)

To this point, when the stringers were asked if they would use an internal *Swisster* blog to communicate with one another and receive feedback on articles, 60 percent said yes. It was a comment, however, under the “No” section that proved illustrative:

“Neither would the editor!” (Survey response)

While the Sivunen and Valo four-factor outline for tool choice is helpful in viewing accessibility as a form of cost decision – in the sense of time used and ease of use – it doesn’t take into account choices determined by monetary factors. While the *Swisster* case study may be an exceptional situation, there are instructive insights in tool choice discussion for companies creating a virtual team with freelance workers as opposed to full-time employees.

Another paradigm to apply to these tool choice decisions is the needs analysis detailed in *Managing Virtual Teams: Getting the Most from Wikis, Blogs and Other Collaborative Tools*. The authors suggest taking stock of a team’s assets and liabilities by charting personnel, skill levels of personnel and available equipment (Brown, et al., 2007). From there, they recommend collaborative tools that may be appropriate based on these factors.

Just as it is a waste of money and time to purchase and train your team members on a complex system that they do not really need, it is also a waste to have your team working harder than necessary for the lack of the right tool. (p. 63)

Applying the authors’ needs analysis to the *Swisster* team suggests, among other tools, e-mail for a weekly status report and a conference call for a team-wide discussion, both tools already available and used by all members. This application attempts to take into account the preferences and observed patterns of tool use for the working team because research has proposed that pre-established patterns tend to stick, despite adding richer tools (Huysman, et al., 2003).

## **Research Question 2: Does the richness of chosen tools affect the product?**

### **Observation.**

Several examples during the observation process highlight cases where the choice of tool may have affected the work product. In one case, the dispersed nature of the virtual team and lack of structured communication led to duplication of work between two stringers. One morning the Editor sent an e-mail request to a stringer with a story idea, and when he did not respond in more than an hour, the Editor then e-mailed another stringer with the same idea. The Editor also called the second stringer and left a message. Soon after, the first stringer responded via e-mail and said he was moving forward on the story idea. The Editor responded via e-mail that he was okay with that, then e-mailed the second stringer, whom he had called, to say never mind. Nearly instantaneously, the second stringer e-mailed the Editor saying he was also working on the story. The Editor then had a dilemma because he felt the second stringer had a better angle than the first stringer, to whom he had already given the go-ahead. After nine e-mails and one phone call made over two hours, the Editor decided to pull the first stringer off the story and let the second stringer, with the better angle, move ahead on it for deadline. The newsletter went out 10 minutes after its noon deadline (Feb. 17, 2010).

A similar reliance on e-mail delayed the newsletter publication when the Editor needed to be out on a Monday for personal reasons. The Editor had notified the Assistant Editor through e-mail: "I would have preferred for him to call. He sent an e-mail on Sunday night. I don't check my work e-mail on Sunday nights" (Assistant Editor, March



9, 2010). Consequently, the Assistant Editor didn't find out until beginning his Monday workday that he would need to be in the *Swisster* office, and the newsletter went out late.

### **Discussion.**

In forming the question of technology's influence on the newsgathering process, I began with a pre-observation hypothesis that due to its relatively small staff size, the *Swisster* team may benefit from the addition of some supplementary technology and better defined communication patterns, but the negatives of adding extremely rich software would outweigh the positives so that there is no beneficial impact on news production. This idea was formed from the tool-based literature review performed before observation. While the observational accounts listed above point out examples where chosen tool use caused difficulties in timely newsletter production, it should be noted that during the majority of observational periods the tools chosen were adequate for production needs. This is to say that the majority of the time, the newsletter was released close to the noon deadline.

When examining only the task of daily output of a newsletter, factors such as lack of social media use due to staffing and skill deficiencies don't seem to directly affect production. However, when examining the production of the news site as a whole, and taking into account the recent downturn of traffic, it would follow that a reexamination of communication structure could prove beneficial for the news site and for management.

The communications processes in this case study rely heavily on person-to-person e-mail and lack communication structures that researchers deem important in virtual team management. For *Swisster*, the lack of a morning or weekly meeting may create more

work for the Editor, as he explains he sends an e-mail to each stringer on the mornings when he is searching for articles for the newsletter (February 12, 2010).

Previous scholarship on virtual team collaboration has repeatedly emphasized the importance of communication structure over communication tools (Jarvenpaa & Leidner, 1999; Massey, et al., 2003; Wellman, et al., 1996). While researchers suggest face-to-face communication is still extremely important for virtual teams, it isn't always a possibility (Warkentin, et al., 1997). Some virtual team studies take into account the prevalence of e-mail in the workroom, suggesting it is the role of management to create boundaries in this medium:

If e-mail is a primary communication mechanism, establish a policy for how often team members will read their e-mail.... Similarly, you might want to provide a recommended turnaround time. (Brown, et al., 2007, p.82)

However, voice-based electronic communication is found to be efficient for task completion even though more words are used than in text-based communication (Desanctis & Monge, 1999). This suggests that for this virtual team – separated by a geographic rather than a time zone difference – that a reliance on the asynchronistic tool of e-mail could be tempered with phone use.

Additionally, increased interaction could benefit team dynamics. The anticipation of future association, either social or professional meetings, is another factor supporting trust and cooperation for virtual teams (Jarvenpaa & Leidner, 1999)

## CHAPTER 7: CONCLUSIONS AND DISCUSSIONS

This case study was not designed to judge the quality of news articles produced or competence of management but to gauge communication patterns for a non-academically-created virtual team. Therefore, any reactions to findings and conclusions drawn from those assessments should not be taken as opinions about the *Swisster* team or management but as explorations of possibilities made possible only by their allowing field observation.

Recognizing that communication efficiencies may be difficult to create in a virtual team, it would still appear that the *Swisster* team could benefit from clearer communication structure (Desanctis & Monge, 1999). It's not the richness of tools but their applied use – or in this case, lack of use – that seems to affect the process more. Given the team's composition of freelance reporters, it is unlikely that their available tool set and training will ever be equal, but the management-driven communication could set patterns that reduce message duplication and provide examples of communication patterns that save time.

It is hoped that those benefits would allow for more time to focus on the production of the daily newsletter and create a more unified sense of purpose.

Ultimately, the difficulty for *Swisster* in adopting stronger communication structures would most likely lie in its pre-established routine and acceptance by management, staff

and stringers, since research suggests that established patterns tend to persist for a virtual team (Huysman, et al., 2003).

### **Implications from theory**

The questions guiding this research were concentrated around communication capabilities guiding virtual team management and their efficacy in news production. The sociomaterial lens suggests that use of technological advancements in turn force management advancements and yet are inextricably tied to the culture of an organization. Strong technological determinism implies that technology inevitably drives social and political change (Leonardi & Jackson, 2004). Through this theoretical reasoning, an organization at the forefront of technological advances such as one employing a virtual team would likely be highly advanced in its communication capabilities, organizational structure and techniques.

For this organization, the technology tools and processes chosen for dispersed team management seemed no more advanced in communication techniques despite the adoption of a completely virtual team structure. For example, a shift from a typical newsroom's daily meeting schedule to no meetings at all is a significant structural change. It is not necessarily a forward evolution in effective tool use, but is significant nonetheless for communication patterns. This finding, brought to light through fieldwork, suggests that even a soft determinist lens would miss the transformations that did occur in the organizational structure by only including forward advancements. The reluctance to use certain technology for personal reasons also suggests that the

implications behind both hard and soft lenses of technological determinism can be mitigated by financial and human inertias.

A benefit of the theoretical evolution into a sociomaterial perspective is an acknowledgement of the complex relationship between technology, change and organizational culture. As indicated by the findings in this case study, management dynamics must be taken into account with technological and structural advancements.

### **New research questions raised by study**

This emphasis on structure over tool choice and the process of the project led to several new research questions for this study in particular and scholarship in general. Staff members often cited the size and freelance arrangement of the *Swisster* team as reasons why additional structure such as meetings or richer technology tools such as videoconferencing would not work. From this insistence arises the question of determining the most effective ways of correlating team size with appropriate tools.

Technology exists to supplement or augment human capacity. In this case study, a small team is capable of relying on human coordination – the Editor’s – rather than rich tools.

Organizational research that attempts to correlate the size of a virtual team with the optimal level of structure or technology-enabled coordination would be useful to public and private sectors exploring virtual teamwork.

Additional profession-specific experiments for media in general and print journalism in particular, would offer more thorough and appropriate comparisons when examining the efficacy of specific tools. Finally, there is plethora of ways of examining organizational change and management-specific roles in virtual teams. With research

suggesting that leadership and coordination is key to virtual team success, deeper insights on quality management for dispersed teams offers learning opportunities for those hiring such managers or who desire such positions.

### **Limitations**

As noted throughout this project, the nature of a case study involves inherent limitations in generalizing and reproduction of results. The composition of this particular team, a collection of stringers and two full-time employees, meant available tools for observation were unequal. Other factors, including a foreign news cycle, small observation group and length of study, influence results.

Additionally, the relatively new nature of news producing virtual teams, evident by a small but growing amount of available research, increases the difficulty of drawing comparisons. However, efforts were made throughout the process to weigh these factors throughout the discussion and in the conclusions drawn.

### **Practical purposes of research and conclusion**

While the narrow data produced by ethnographic research reduce the ability to generalize and transfer findings, there are practical purposes to this type of research. This research hopes to contribute to the body of academic-based scholarship available for researchers interested in similar topics. The tool-based literature review, aggregating a wide selection of available research on specific tools used in virtual teams, reinforces the importance of structure over richness. While not definitive, conclusions and discussions from these experiments repeatedly emphasize that the social factors of team

communication and management are more important than the specific tool used. As research in these intertwined areas continues to expand, the foundations created through previous experiments, including this fieldwork, may assist future researchers.

Following this study's discussion and conclusions, it may be suggested that news organizations employing a dispersed group of workers with a common production goal pay special attention to its communication structure. Also, the richness of tool use will be directly related to the comfort level of those at the top of the pyramid pushing it down, so organizations wishing to employ certain tools pay special attention to the staffing and or training of those they want to employ those tools.

# APPENDIX I

## *SWISSTER* STRINGER STUDY

### 1. YOUR ROLE WITH SWISSTER

	33%
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These are general questions about your participation with Swisster. All answers are anonymous and randomized.

**1. How long have you been contributing to the Swisster site, and about how many stories per month do you file?**

**2. Can you describe how you communicate throughout the editorial process from assignment creation to filing the final product? Please focus on interaction with your editor rather than with your sources. For example:**

**When I have an idea for an article I call/e-mail/go to the Swisster offices...**

**To file my story, I e-mail/call/text message my editor...**

Next



**2. COLLABORATIVE TOOL USE**

For these purposes, a "collaborative tool" is considered any type of technology used for communication during the editorial process. These questions are pertaining to your tool use with Swisster.

**1. If you use electronic mail, or e-mail, to communicate with the Swisster editor, do you send these messages from your home computer or phone or both?**

**About how many e-mails per tool do you expect to send and receive per story?**

**2. If you use the telephone to communicate with the Swisster editor, about how many times per article do you make or receive calls?**

**Are you more likely to use your mobile telephone or a landline for these purposes?**

**3. Is your mobile phone capable of sending and receiving e-mail messages? Do you use it for that purpose when working for Swisster?**

**4. If you were given a multi-media tool, such as the iPhone, from the Edipress company, do you think this would change the way you report stories or interact with your editor?**

**Please explain some ways it would or would not change your process.**

[Prev](#)[Next](#)

**3. INTERACTION AMONG TEAM MEMBERS**

	100%
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This final section aims to understand interaction among team members through direct questions and hypothetical situations

**1. How often do you interact with other Swisster writers?**

Please be as specific as possible, such as

<<I interact with \_\_\_\_ Swisster stringers per \_\_\_\_...>>

**2. Would you like to interact with Swisster stringers...**

more often
less often
same amount

**3. If there were a weekly meeting led by the editor where you could get a feel for assignments, hear general Swisster updates, and interact with other stringers, please rank how likely you would be to participate if the meeting were:**

	Not at all likely to participate	May occasionally participate	Somewhat likely to participate, at least 50% of the time	Very likely to participate
a conference call				
a video conference				
in the Swisster office				
a listserve, or in e-mail form				
Comments:	<input type="text"/>			

**4. If there were a private online site -- such as an internal Swisster blog -- where you could**

**receive feedback on articles, post thoughts, and communicate with other team members, would you use this site?**

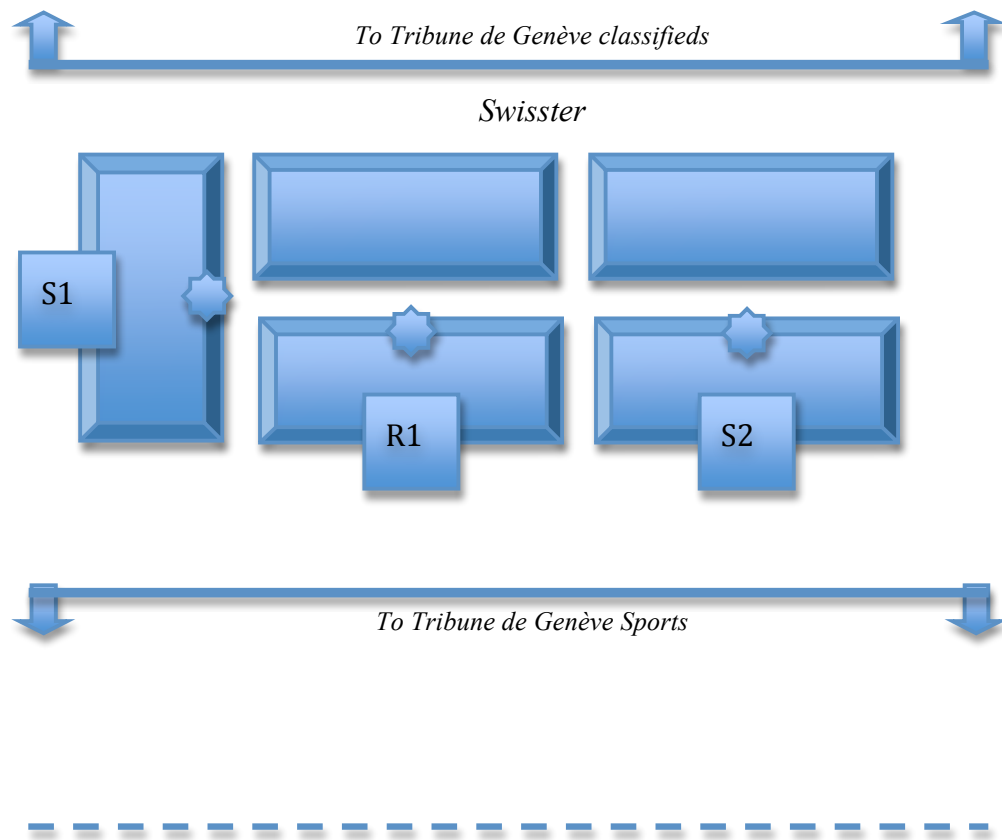
yes
no
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## APPENDIX II

### REPRESENTATION OF THE *SWISSTER* NEWSROOM



= Dell docking station, keyboard and 14" flat screen monitor.  
Assistant Editor's monitor has a Logitech camera attached to it.



= *Swisster* desk



= S1> Editor, S2> Assistant Editor, R1> Researcher

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