Exploring Sociomaterial Factors of Influence in the Adoption and Continued Use of a Communications Technology at a Non-Profit Organization

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Abstract

This exploratory case study was conducted in order to understand what were the most significant sociomaterial factors influencing the adoption and continued use of a recently implemented communications technology at a Canadian environmental non-profit organization. By conducting qualitative interviews with five staff and ex-staff who knew the most about the new technology, and by using the guiding theoretical lens of sociomateriality, a grounded theory was induced from the research. Study findings suggest that active change processes comprised of meta-sociomaterial factors positively influence the continuing use of technology. Findings also support ideas of material-discursive practise, in that the introduction of a new technology may cause new discourse to materialize at a workplace. This discourse then stimulates sociomaterial factors to emerge and influence continued technology use.

Keywords: sociomateriality, non-profit, workplace technology, ICT, grounded theory, Orlikowski, qualitative interviewing, material-discursive practice

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Introduction

The Importance of Non-profit Organizations

Non-profit organizations impact the welfare of people around the world, upholding the importance of a healthy environment, animal and human rights, access to recreation, healthcare, the arts, education, and social welfare programs, as well as helping the less fortunate in society tolerate dominant economic systems (Zorn, Flanagin, & Devorah Shohoam, 2011; Valentinov, Hielscher, & Pies, 2015). Even though non-profits are undeniably important to society, organizations find themselves operating under "heightened scrutiny, greater demands, fewer resources, and increased competition" (Hackler & Saxton, 2006, p.2).

The advent of Web 2.0 information and communications technologies (ICTs)—including interactive open-source online platforms, knowledge-sharing cloud databases, and social networks—however, brings new opportunities for non-profits to remain competitive, operate efficiently, and broaden their digital outreach while spending less on marketing costs (Steinfield, Scupola, & López-Nicolás, 2010; Jaskyte, 2012). A larger digital reach enables non-profits to extend the impact of their mission-based work and engage with new audiences. Furthermore, new online platforms enable registered charities—Canadian non-profits that produce tax receipts for donations—to offer simple, secure, and efficient ways for stakeholders to make transactions. So, in order to thrive, non-profits must build their capacity, expertise, and organizational practices around information and communications technologies to fully support their communications strategy (Burt & Taylor, 2003; Hackler & Saxton, 2006; Waters & Feneley, 2013; McMahon, Seaman, & Lemley, 2015).

A Call for Research

There is considerable evidence that communications technologies can positively impact organizations by "deliver[ing] enhanced campaigning and more effective user services" (Burt & Taylor, 2003, p. 125). But having worked with a small communications team at a Vancouver-based, environmental law charity, I have observed first-hand the difficulty that some resource-limited organizations have with making decisions about whether or not to purchase, trial, and use new digital communications platforms. In particular, I have observed financial and staffing limitations to be strong factors in avoidance of new technology systems. Also, I have observed people—staff and leadership—express their concerns about time management surrounding ICT adoption and innovation, for people perceive "bridging the gap between the current and potential uses of IT" as a "considerable undertaking" (Hackler & Saxton, 2006, p.1). Also, new technology is resisted because "historically embedded values and practices are confronted by transformational opportunities made possible by ICTs" (Burt & Taylor, 2003, p. 126). Essentially, the changes that accompany technological innovation can threaten rooted values of the organization or its staff, but to "remain effective in the longer term, more radical change requires powerful new visions to emerge and be embraced" (Burt & Taylor, 2003, p. 125).

I believe it is important to explore situations in which new technologies are being adopted at organizations, to help understand reasons why workplace technology is either embraced or resisted. Therefore, I conducted the present study to explore people's perceptions about the adoption and continued use of a new communications technology at a Canadian environmental non-profit organization.

Theoretical Framework

Upon scanning the academic literature to set the framework for this study, I found Communities of Practice (Wenger, 1998) and Wanda Orlikowski's (1992, 2000, 2002, 2007) insights regarding sociomateriality as particularly interesting theoretical lenses for researching workplace technology. Where Communities of Practice would be useful for exploring a new technology as a "place" where people practice social interactions, a lens of sociomateriality demands that research must equally regard both the social and human factors of technology implementation as well as the more concrete, material aspects. I focused on sociomateriality and developed my research question around this concept, as it provides an excellent frame for holistic exploration and accurate depiction of how a new technology may influence a user's behavior, as well as how the user's decisions may shape the way a technology performs (Orlikowski, 2007). Furthermore, scholars posit that using an agile theoretical lens like sociomateriality may mitigate the risk of conducting research that may become irrelevant against the changing fabric of technology and organizing studies (Leonardi & Barley, 2008; Zammuto, Griffith, Majchrzak, Dougherty, & Faraj, 2007).

Sociomateriality is not only a useful guide for research, but it also serves as a pathway to applying Orlikowski and Scott's (2015) recent concept of material-discursive practice. While a sociomaterial lens enables researchers to recognize influential factors of materiality and sociality in studies concerning technology, material-discursive practice aids researchers to conceptualize interactive material objects—digital communications technologies—as fluctuating phenomena that are continually shaped by human discourse (Orlikowski & Scott, 2015).

For this study, guided by the theoretical lens of sociomateriality and concepts emerging from material-discursive practice, I aim to contribute to the wider field of study represented by noted MIT scholar, Wanda Orlikowski.

Research Question and Methodology

Guided by my own professional experiences, related academic studies, and the concept of sociomateriality, I believe it is important to conduct research that explores the social and material factors of what helps or hinders digital innovation at a non-profit workplace. With this purpose in mind, my research conducted at a Canadian environmental law charity may contribute to the paradigm of qualitative research concerning workplace technology by providing insights into the following research question:

- What are the most significant sociomaterial factors that influence an environmental charitable organization to adopt and use a new communications technology?

To find answers to my research question, I embarked upon an exploratory case study using a series of qualitative, one-on-one, semi-structured interviews with five current and former staff of my ex-workplace in March 2016. I purposively selected five participants who knew the most about a recently-implemented communications technology and used a series of pre-written guiding interview questions to explore people's perceptions about the new technology. I based my interview questions on a matrix I developed that focused on sociomaterial concepts. After transcribing the recorded interviews, I used constant comparison to analyze the content, first reducing the data into core concepts and then inducing the most significant sociomaterial factors of influence from the concepts. The inductive, exploratory approach of this study demanded that I use grounded theory as my research method, so I could produce a theory based on my interpretations of the concepts pulled from the data (Merrigan, 2012).

Study Limitations

I used a qualitative approach to conduct this research because "qualitative researchers seek…illumination, understanding, and extrapolation to similar situations" using, "a naturalistic approach that seeks to understand phenomena in context-specific settings" (Hoepfl, 1997, p. 47). The findings from this study are limited to providing insights into a particular Canadian non-profit organization, at a particular point in time, while looking at a specific communications technology being adopted. Yet, the insights generated by this qualitative case study allow for theoretical generalization that could be applied to case studies at other organizations to help inform evolving theory on the interconnections among sociomateriality, technology, and organizing.

Study Layout

I begin this study with a survey of existing academic literature that I considered pertinent to my subject. In the Literature Review chapter, I synthesize particularly relevant findings and methodological approaches from research studies in a chronological format to highlight differences in discoveries over time. I explain my methodological approach for data collection in the Methods chapter and begin the Findings and Discussion chapter with a rigorous presentation of the data I collected, summarizing interview transcriptions into primary quotes then inducing core concepts from these quotes. I end the Findings and Discussion chapter by interpreting how the data assists with identifying the most influential sociomaterial factors at-play in my case study, and suggest how my findings contribute to the broader theory in this area. I summarize and revisit the key findings, limitations, and theoretical insights of this study in the final, Conclusion chapter.

Literature Review

Overview

Relying almost entirely on peer-reviewed, academic articles, using the University of Alberta's online library network, I scanned for the following core concepts and keywords in my literature review: workplace technology and organizing, information and communications technologies, ICTs, non-profit organizations, user perceptions, technology adoption, digital communication, sociomateriality, and technology implementation. I made a list of over 50 published articles with a sub-list of approximately 10, highly relevant articles for my purposes. These most relevant articles generally included at least one of the following criteria: the research was conducted in a non-profit setting, a qualitative data gathering method was used, or the article provided an insightful theoretical model such as sociomateriality to apply to research. I found it extremely useful to scan the bibliographies of the top 10 articles I identified in order to find further connected works and supplement my literature review. The academic journals that provided the majority of content for my purposes included *MIS Quarterly* and *Organization Science*.

To highlight the remarkable transition from Web 1.0 to Web 2.0 technologies circa 2004, the following literature review is organized in a chronological manner.[1] The purpose of this chronological approach is to show how information and communications technologies (ICTs) studies gradually shifted from focusing on resource limitations and single-user opinions about new technologies in the Web 1.0 era, to focusing on leaders' opinions, strategic benefits, and social influences as factors relating to ICT adoption in the Web 2.0 era. My literature review

[1] Cormode and Krishnamurthy (2008) and Petersen (2008) conceptualize Web 1.0 as being dominated by content-rich websites hosting user-consumable content, whereas the concept of Web 2.0 redefines the Web as a platform of websites linked together to form networks. Web 2.0 websites not only supply content but also allow users to interact and collaborate to generate content. The term Web 2.0 was introduced around 2004 and is associated with vastly higher web traffic due to in-platform communication features such as commenting, sharing, and messaging.

concludes by exploring what I think are particularly relevant and interesting theoretical models that scholars suggest using for conducting workplace technology research.

Researching Workplace Technology and Organizing

Promisingly, upon a scan of the literature from the past 25 years, I found an impressive amount of academic research that explores how organizations are benefiting from using ICTs, as well as the social and material factors that help or hinder new technology adoption and usage at workplaces. Yet most studies tend to focus on only one factor at a time—some studies explore resource limitations or productivity results (Gomes & Knowles, 2001; Humphrey, Kim, & Dudley, 2004; Katila & Shane, 2005; Pope, Isely, & Asamoa-Tutu, 2009; Jaskyte, 2011), while others explore the perceptions and influences of people as factors in technology adoption (Karahanna, Straub, & Chervany, 1999; Boudreau & Robey, 2005; Bingley & Burgess, 2012; Sun, 2013). Also, a great deal of this research was conducted in for-profit settings, highlighting the connection between strong leadership with greater innovation, and strong technology expertise with higher production output and performance efficiency (Tallon & Kraemer, 2007; Steinfield et al., 2010; Sun, 2013).

Embedded within the academic literature, however, are numerous calls for more research to be conducted, specifically at the non-profit workplace (Burt & Taylor, 2003; Humphrey et al., Kim, & Dudley, 2004; Alshammari, Rasli, Alnajem, & Arshad, 2014; Ihm, 2015; Raman, 2015). For, “it appears that researches of innovation are intensive in the area of business, while so much work is needed to be done in the field of the non-profit firms” (Finn, Maher, & Forster, 2006, p.251). Because non-profits are generally less rigid in staffing structure, have less focus on financial growth, and may make decisions with a bottom-up approach, scholars posit that innovation is a fundamental characteristic to non-profits; therefore, the non-profit workplace is

an excellent environment to study learning, organizing, and creativity surrounding technology adoption and use (Jaskyte, 2011; Zorn et al., 2011; Alshammari et al., 2014; Petiz, Ramos, & Roseiro, 2015).

There appears to be an increase in technology and organizing studies conducted in the last 10 years, likely as a result of the burgeoning Web 2.0 technologies that have emerged since 2005. Many of these peer-reviewed, small-scale field studies explore how workplace ICTs are being developed, adopted, and used. Much of this research offers insightful, qualitative findings, yet the majority of studies have limitations because data are not generalizable (Burt & Taylor, 2003; Finn et al., 2006; Saxton, Guo, & Brown, 2007; Jaskyte, 2012; Goldkind, 2015; McMahon et al., 2015; Raman, 2015). Regardless of this lack of generalizability, I believe these studies are valuable to stimulate a larger discussion and more research on the subject. Also, perhaps these studies may serve to identify potential shortcomings of theories and models of technology and organizing commonly used for this type of research (Orlikowski, 1992; Zammuto et al., 2007; Leonardi & Barley, 2008). For example, for more than two decades, Orlikowski (1992, 2000, 2002, 2007) has been developing a new way of approaching workplace technology and organizing research, aiming to bring value and equality to the portrayals of social and material factors at-play. I will revisit these ideas later in this chapter in order to show the usefulness of her proposed approach. But first, I will chronologically discuss some discovery themes that emerge from selected research conducted since the early 1990's.

A Chronological View of Changes in Research Discoveries

Discoveries of Web 1.0 studies (1992-2004). Scanning the academic literature that explores ICTs at the non-profit workplace, one sees trends emerge within the studies over the past three decades: Not only has there been a shift in the way ICTs are being used at

organizations since the early 1990's, but also in the type of discoveries made through research. As expected, the greatest thematic shift in research discoveries appears to happen from approximately 2004-2005, as Web 2.0 technologies take over (see Appendix A for a visual overview of research discovery themes).

Generally, Web 1.0 studies do not scan vast amounts of technology platforms in use at workplaces, nor do they look to the organizations being studied for strategic insights on technology decisions. Instead, early Web 1.0 studies tend to focus on user perceptions surrounding individual motives for adopting and continuing technology use (Tyre & Orlikowski, 1994; Karahanna, et al., 1999; Burt, 2000; Boudreau & Robey, 2005). Also, Web 1.0 studies examine resource infrastructure—staffing and financial resources—as catalysts for onboarding technology (Gomes & Knowles, 2001; Humphrey et al., 2004). Likely, the reason for the general absence of broad scans of various workplace technologies is based on the fact that there were simply fewer inexpensive ICTs to choose from and use at organizations, pre-Web 2.0. So, before the widespread adoption of user-focused, collaborative Web 2.0 technologies, research projects focused on two main themes: the effect of funding and resources on organizations' technology use, and the effect of user-perception on technology use.

A focus on resources. Web 1.0 studies of workplace ICTs suggest that non-profit and for-profit organizations struggled to adopt technologies because of a shortage of human and/or financial resources. This is not surprising in the late 1990's and early 2000's, as websites were expensive to build and skilled staff difficult to find, but this limitation of resources was a particularly relevant issue at a time when organizations were starting to consider the value of an online presence (Gomes & Knowles, 2001; Humphrey et al., 2004; Katila & Shane, 2005). Gomes and Knowles (2001) captured the essence of the shift in thinking that a web presence was

important—yet cost-prohibitive—to organizations, in their statement: “Clearly, effective Web sites are becoming a necessary and, often, expensive part of the non-profit promotion mix. They are also being increasingly used as an alternative direct channel of distribution of information, ideas, and services” (p.228). This quote illustrated the impending migration of offline marketing initiatives to online “alternatives” that would arrive with force as inexpensive, collaborative Web 2.0 technologies became more abundant and efficient for marketing purposes.

Humphrey et al. (2004) exposed an interesting concept, in that non-profits would implement and use more technological resources, if mandated to do so by funders. Thus, funds restricted for technology initiatives served as catalysts to guide and increase innovation. Also focused on the question of resources and innovation, Katila & Shane (2005) discovered that when a small organization lacked resources and faced an online landscape full of competitors, this situation positively increased innovation and production.

To look only at the organizational resources available to implement ICTs, however, creates a limited viewpoint and avoids the social phenomena that also may influence organizational technology adoption and innovation. For, as Orlikowski (1992) notes:

> While economic and technological factors are encouraging a movement away from constructing and deploying relatively rigid artifacts, it is not clear that social and cultural factors are equally encouraging. The culture of the workplace, managerial ideology, and existing bases of expertise and power significantly influence what technologies are deployed, how they are understood, and in which ways they are used (p.422).

In other words, organizational culture and staff opinion can be as powerful a force on technology innovation as resource limitations. Therefore, it is important to examine both material and human factors surrounding ICT decision-making.

A focus on users. Some Web 1.0 studies of organizations focused on how and why individual users decided to use particular technologies (Tyre & Orlikowski, 1994; Karahanna et al.,1999; Venkatesh, & Davis, 2000; Boudreau & Robey, 2005). Studies found that a user's perception of a technology played an integral part in whether or not ICTs were adopted properly for an organization's benefit. For example, Karahanna et al. (1999) explored the attitudes and behaviours of technology adopters at a large, for-profit, U.S. financial firm. Their research revealed that early adopters chose to use a particular technology based on their personal assumptions of the tool's usefulness to their work, ease-of-use, trial-ability (testability), and track record of proven results; whereas late adopters used technology based on their perceptions of image enhancement (being noticed by management) and instrumentality of use (helping in job advancement) (Karahanna et al., 1999). The idea that technology latecomers based their decisions on upward mobility factors was certainly an interesting discovery about power dynamics in the workplace.

Other studies from the Web 1.0 era focused on non-profit organizations in particular. Highlights from these studies include that an individual's adaptation style and learning process, as well as how the person fits into the organization's overall culture, greatly determined the success of a technology implementation (Tyre & Orlikowski, 1994; Burt, 2000; Boudreau & Robey, 2005). Tyre and Orlikowski (1994) found that learning a technology was a highly discontinuous process, with staff only having a brief window in which to modify and learn new practices before a new technology became stagnant with unresolved issues. Furthermore, they found that notions of power and hierarchy influenced an individual's responsiveness for learning: "The culture of the workplace, managerial ideology, and existing bases of expertise and power

significantly influence what technologies are deployed, how they are understood, and in which ways they are used" (Tyre & Orlikowski, 1994, p.422).

Nearly a decade later, on the cusp of Web 2.0 popularity, Boudreau and Robey (2005) discovered that the positive or negative institutional learning environment and general staff opinion about new technologies directly influenced a technology adopter's commitment to continued use.

Discoveries of Web 2.0 studies (2005-present). From 2005 until approximately 2012, ICTs were primarily described as websites, email communications, and data collection portals—non-collaborative communications transmission tools (Pope et al., 2009). After 2012, however, the research begins to integrate online social networking sites, mobile communications, cloud computing, and fundraising platforms as ICTs of strategic interest for their power in stimulating user interaction and collaboration (Panagiotopoulos, Al-Debei, Fitzgerald, & Elliman, 2012; Waters & Feneley, 2013; Uzunoğlu & Misci Kip, 2014).

The Web 2.0 era also sees a noticeable decline in researchers making discoveries about organizational resource limitations and the effect on technology adoption (see Appendix A). Finding funders and directing resources towards technology innovation continued to be a struggle at non-profits, and was noted as a hindrance in certain studies (Pope et al., 2009; Jaskyte, 2011). Yet, generally, the post-2005 literature looks beyond ICTs as tools to be purchased and installed; instead, researchers try to understand the strategic benefits of technological innovation.

Interesting dualities are explored in the Web 2.0 research literature, including:

- Are ICTs used for administrative, one-way communications transmissions or for strategic, dialogic engagement purposes?

- Are concerns of security and privacy overshadowing burgeoning ICTs opportunities?
- What influences technology innovation: internal staff perception or external competition?
- How does technology adoption differ from technology adaptation?

***A focus on strategy*.** After 2007, the literature begins to focus on the strategic, less-administrative, value of ICTs. Less effort is spent on what specific technologies are being used or how technology can build administrative efficiency. Instead, many researchers tried to understand how ICTs could be harnessed to engage with stakeholders to build deeper relationships, increase accountability and transparency, or bolster marketing efforts (Pope et al., 2009; Dumont, 2013; Waters & Feneley, 2013; Goldkind 2015). ICTs were not only perceived as tools for pushing one-way communications transmissions, but also as strategic resources used to create dialogue and increase brand recognition. Web 2.0 technologies brought social networking, open source platforms, interactive interfaces, and online communities, so understanding how these new technologies benefit organizations became the focus of research.

Pope et al. (2009) discovered that of the non-profits surveyed in their study, many organizations believed they did not use their ICTs as well as they should, noting that a lack of dedicated staff hindered innovation. However, the researchers moved away from focusing solely on resource-availability to instead cultivate a conversation about how technology, if used for more than one-way communications transmissions, may benefit an organization from a marketing perspective (Pope et al., 2009). “There clearly needs to be more education about target marketing and brand recognition at the NPO-level, so that these organizations can reach new

clients, more consistent donors and funders, and dedicated and long-term volunteers." (Pope et al., 2009, p.196).

Saxton et al. (2007) identified a promising trend towards the use of technology for engagement and dialogue with stakeholders, as opposed to using technology for purely administrative purposes. Their study predicted that an adequately staffed online response team could increase donor engagement and, in turn, increase fundraising for a non-profit thrive (Saxton et al., 2007).

A focus on leadership. Leadership's influence on technology decisions is also addressed in the Web 2.0 period. Leaders of organizations are identified as key players in an ongoing, dynamic relationship between staff and technology, so strategic decisions of leaders are explored for insights into why technology adaptation and innovation happens.

Some findings concluded that if an innovative leader who values technology is in charge of technological decision-making and staffing, then staff would more readily launch innovative projects with new ICTs or adapt their behaviour with existing ICTs (Jaskyte, 2011; Dumont 2012). Also, if leadership decisions were focused on social expectations of staff needs, as opposed to technical aspects; then not surprisingly, new technology would be more readily accepted (Mano, 2009).

Tallon and Kraemer (2007) posited that while a leader's perception surrounding ICTs was not always objective and measurable, this perception held value because it accurately and realistically portrayed the value that ICTs have to an organization. In essence, they discovered that what leaders thought about technology mirrored what actually happened in reality. Therefore, leaders should be included in technology decisions and their opinions should not be considered as being filled with personal bias (Tallon and Kraemer, 2007).

Focusing specifically on social media as a digital communications tool, Goldkind (2015) found that organizational leaders are quicker to see the value in social media for building their own personal relationships, less for building organizational success. But, perhaps this finding simply demonstrated how social media could serve as a gateway for building strategic relationships between leaders and their networks; thus, passively broadening the reach of the organization.

Dumont (2012) noted that some leaders saw the value of social media and ICTs as strategic tools to increase engagement and improve the organization's overall responsiveness:

> What began to emerge from the responses was a utilization of ICTs as more than a tool to push out information. They were a medium for a bi-directional flow of communication. In addition, ICTs were viewed as tools to be utilized by the organization to help monitor the environment, to help place the organization in a position to react to these changes (p.19).

Thus, Web 2.0 ICTs were not only valued for offering interactive communication capabilities, but also for being powerful listening tools to help an organization observe competitors and understand public and staff sentiment.

A focus on social influences. Pre-Web 2.0, Burt and Taylor (2003) made the insightful statement that "surprisingly little is known about the ways in which ICTs are shaping, and being reshaped by, voluntary [non-profit] organizations—and to what effect" (p.116). Thus, Burt and Taylor (2003) predicted an important aspect of technology and organizing research, in that studies should not only seek to understand how technology shapes users, but also how users shape technology.

Web 2.0 studies echo many themes from the Web 1.0 era, including the idea that the attitudes of staff members will likely influence others to adopt and commit to a technology or not (Boudreau and Robey, 2005; Bingley & Burgess, 2012; Sun, 2013; Fagan, Khan, & Buck, 2015). For example, with the emergence of Web 2.0 online community platforms, new issues about online privacy and transaction security began to be of concern for stakeholders and could shape people's decisions about technology (Pope et al., 2009; Ku, Chen, & Zhang, 2013). Also, it was found that an individual's pre-constructed opinion about a technology may rule people's decision-making, for Fagan et al. (2015) found that staff express cynicism towards technology providers, ignoring software updates as annoying or considering new technologies as merely cash grabs from providers.

Sun (2013) suggested that the human phenomenon of herd behaviour helped to stimulate ICT adoption, and this imitative behaviour could strengthen people's perceived-usefulness of technology. Yet, the danger is that people often discount their own knowledge to follow early adopter's leads and this herding process can lead to a weakened, long-term, personal commitment to technology (Sun, 2013). Zorn et al. (2011) found that ICT adoption is strongest when external, competitive influences are combined with internal, autonomous decision-making capability. Thus, leaders should cultivate an innovative, learning culture in order to remain competitive (Jaskyte, 2011; Zorn et al., 2011; Alshammari et al., 2014; Petiz et al., 2015).

Bingley and Burgess (2012) found that people are more likely to use a new technology if suggested by authority, whereas Sun (2012) found that people are less likely to adapt their existing behaviour if suggested by authority. The research conclusions of Karahanna et al. (1999) are echoed in studies by Bingley and Burgess (2012), Sun and Jeyaraj (2013), and Chang, Chang, Wu, and Huang, (2015) for the researchers discovered that people tended to be early

adopters of a technology if they had an aptitude for learning technology, believed it was useful or easy to use, or could observe someone else using it.

Finally, of particular interest are the conclusions from the study of Kania-Lundholm & Torres (2015), in which the scholars found that people actively chose to self-identify themselves as various types of technology users. This study shows that people not only socially-construct their own opinions and biases about technology, but also construct their own narratives of themselves as end-users. Interview subjects created and self-defined themselves as tech-minded and innovative without any legitimate proof, and these self-made identities were found to be difficult to challenge (Lundholm & Torres, 2015).

A focus on measurement. Web 2.0 literature published during or after 2012, reflects a new tone in research. By 2012, many authors agreed that non-profit organizations were adept at engaging with their stakeholders through various online communications methods; specifically, using social media to deepen relationships and attract newcomers to mission-based work (Goldkind, 2015; Raman, 2015). But, the question of how to measure and prove performance outcomes of online engagement and social media efforts emerged (Panagiotopoulos et al., 2012; Alshammari et al., 2014; Uzunoğlu & Misci Kip, 2014; Goldkind, 2015; Ihm, 2015; Raman, 2015).

Goldkind (2015) identified that while social media is valuable for non-profits for engagement and stewardship, “it is questionable whether nonprofits are using social media to the maximum effect and how they are measuring the effects of their social media use, if at all" (p. 380). In fact, “there is no strong evidence to suggest that nonprofits’ social media use is effective yet either for fundraising, volunteer raising, or advocacy" (Goldkind, 2015, p. 381).

Uzunoğlu & Misci Kip (2014) suggested that if effective measurement tools were in-place at an organization, then proof of return on investment (ROI) of efforts might strengthen the pace of organizational innovation and promote heavier ICTs usage. In turn, leaders will see this ROI, and make strategic decisions to advance innovation as a priority (Panagiotopoulos et al., 2012).

Academic literature is beginning to look for practical ways to develop tactics to measure social media and online engagement efforts (Ihm, 2015). Also, professional organizations such as the Nonprofit Technology Network publish white papers, blogs, and webinars to discuss ways of evaluating online engagement efforts (https://www.nten.org/). Interestingly, the new barrier to measuring social media engagement efforts returns, once again, to a resource issue: new technologies that measure ROI across an organization's various digital platforms are beginning to emerge, but they are often expensive or complicated to implement.

It is clear that non-profit organizations are increasing their use of ICTs and Web 2.0 platforms in order to engage with stakeholders, monitor competition, and measure results of communications initiatives. Furthermore, as ICTs become more recognized by leadership as strategic tools, worthy of resource investment, it is likely that organizations will consider adopting and using an increasing number of technologies. But this adoption of new technologies is not a process of simply allocating resources; it is greatly influenced and affected by the people who use technology. Thus, it is important for new research to explore both the social and material factors surrounding organizational ICT adoption and usage.

Guiding Theories

There is no doubt that information communications technologies (ICTs) offer useful and abundant ways for non-profit organizations to market themselves to remain competitive and to

efficiently engage with internal and external stakeholders. As highlighted throughout this literature review chapter, there have been numerous studies investigating the social and resource factors that help or hinder organizations from adopting or continuing with technologies. Over the past 30 years, these studies have used various guiding theories, lenses, and theoretical models to address the research, some of these include: Business Model (Panagiotopoulos at al., 2012), Cognition Change Model (Sun, 2013), Communities of Practice (Agranoff, 2008; Al-ghamdi & Al-ghamdi, 2015), Constructivism (Leonardi & Barley, 2010), Diffusion of Innovations Theory (Finn et al., 2006; Nugroho, 2011; Sun & Jeyaraj, 2013; Raman, 2015), Innovation-Decision Process Theory (Bingley & Burgess, 2012), Positioning Theory (Kania-Lundholm & Torres, 2015), Sense-making Theory (Tallon & Kraemer, 2007), Structurational Model (Orlikowski, 1992, 2000), and Uses and Gratifications Theory (Ku et al., 2013).

With this abundance of theoretical lenses to select from, I believe it is important for researchers to utilize a guiding theory that resonates with their own research approach and subject. For my own purposes, to explore workplace technology and organizing, I believe that I can glean the most insights from my project if I choose a guiding lens that will help to analyse both the material (resource, environmental, technical) and social (perceptions, identities, power) factors at-play in the adoption or use of an ICT. So, in the following sections of this paper, I will pay particular attention to Orlikowski's notion of sociomateriality and demonstrate its usefulness for developing a framework for a research design (Orlikowski, 1992, 2000, 2007; Zammuto et al. 2007; Leonardi & Barley, 2008). But first, I explore social and material concepts that emerge from Communities of Practice (Wegner, 1998).

Communities of Practice. Communities of Practice (Wenger, 1998) supplies a useful framework for understanding the social factors surrounding technology adoption at a workplace

(Agranoff, 2008; Al-ghamdi & Al-ghamdi, 2015). Focused on ideas of human sharing and knowledge management, this theory offers a way to connect practice (practical doing), with community (workplace belonging), with identity (becoming informed), with meaning (participatory learning) (Wenger, 1998). All of these facets of a community of practice help frame the understanding of why people choose to adopt and learn a new technology, adapt with changes to an existing technology, and share knowledge.

Communities of Practice places a human lens on workplace organizing, so much so that, "the ‘hardware’ of public performance, such as benchmarks and databases, may be less important than the human ‘software,’ that is, people who must organize themselves, exchange knowledge, learn and solve problems, and become performance motivated" (Agranoff, 2008, p.321). Managers and leaders of organizations can support and stimulate staff to self-organize and form a community of practice in order to boost learning, efficiency, and knowledge sharing (Burt, 2000; Agranoff, 2008; Petiz et al., 2015). Al-ghamdi and Al-ghamdi (2015) suggest that certain Web 2.0 technologies may act as virtual communities of practice, offering spaces for belonging, file sharing, and organizing. These virtual communities could be embraced and promoted at workplaces to help overcome obstacles such as unearthing tacit knowledge, and overcoming poor cooperation to improve knowledge management systems (Al-ghamdi & Al-ghamdi, 2015).

The idea of a community of practice is interesting for it begins to incorporate notions of materiality and sociality being entwined, in that the “community” is an actual environment or entity where social happenings and human performance occurs. Furthermore, Wegner, White and Smith (2009) suggest that there are identifiable reasons why workplace communities adopt technology, and many of these reasons straddle both social and material factors. In essence,

people must have some sort of material framework in which to practice social interaction, and technology can enable this interaction. Technology adoption is influenced by, or influences:

- Whether or not people spend time together; whether or not people share space together: Time and space is needed for social interaction and technology can help bring people together in time and space.
- Whether or not people participate in social interaction; whether or not these social interactions produce tangible or conceptual artifacts. Social interaction can be a physical activity that produces "things."
- Whether or not people act alone; whether or not people identify with a group or many groups. Technology can enable complexity and relationships within group membership, or it can create alienation.

With these influential factors in-mind, Communities of Practice helps to identify social and material factors of a technology adoption as they are enacted. Social and material factors are not unchanging phenomena; instead they are entangled, constructing and influencing each other.

Orlikowski's structurational model and practice lens. There is a fascinating body of work from Wanda J. Orlikowski (1992, 2000, 2007, 2015) in which she attempts to disassemble the "false dichotomy" of "the duality of technology…as either objective force or as socially-constructed product" (1992, p. 406). She spearheads a movement for researchers to cease conceptualizing technology as either objective reality—playing either a rigidly systematic role, or only as a human-shaped, dynamic phenomenon. Institutional context and the behaviours of informed, reflexive people are the foundation for her proposed Structurational Model, which is comprised of the following three components:

- Humans as users, decision-makers and designers

- Material technology artifacts
- The institutional context as culture, power, procedures, staffing, ideology, and competition.

This Structurational Model has limitations, however, for it does not work well for exploring why technology development happens, or why people change how they use technology. In essence, the Model fails to unbundle and react to what motivates user and developer adaptation (Orlikowski, 2000). Thus, Orlikowski (2000) suggests that the Model should become a research "practice lens" in order to be flexible at examining a combination of both the technological artifacts of an organization and how people choose to use these artifacts. Orlikowski (2000) states:

> These structures of technology use (technologies-in-practice) are not fixed or given, but constituted and reconstituted through the everyday, situated practices of particular users using particular technologies in particular circumstances. By attending to such ongoing (re)constitution, a practice lens entails the examination of emergence, improvisation, and change over time as people reconfigure their technologies or alter their habits of use, and thereby enact different technologies-in-practice. A practice lens thus allows us to deepen the focus on human agency (p. 425).

This practice lens allows researchers to focus more on humans as agents of will, improvisation, and habits, who may wilfully improvise and transform their use of technology as well as change the technology artifact itself (Orlikowski, 2000). Moreover, researchers may benefit by using this practice lens because it draws from the epistemologically different academic worlds of organizational studies and technology studies (Orlikowski & Barley, 2001). Blending interdisciplinary insights may help a researcher recognize factors of both human

agency and materiality to see that relationships between people and technology change continually, often within short amounts of time (Constantinides & Barrett, 2006; Zammuto et al., 2007). Moreover, understanding the epistemological nuances between the organizational and technological traditions may enable researchers to more deeply respect the technical expertise of users and the strategic expertise of organizers (Orlikowski & Barley, 2001). Finally, pulling from epistemologically different academic traditions may help to more clearly define the relationship between social and material factors pertaining to organizational technology (Orlikowski & Barley, 2001).

Sociomateriality. In 2007, on the cusp of widespread Web 2.0 technology adoption, the importance of materiality to technology and organizing studies returned to the literature (Orlikowski, 2007; Zammuto et al., 2007; Leonardi & Barley, 2008). Building on the idea that one should approach research armed with knowledge of material and social factors at-play, Orlikowski (2007) posited that materiality is entwined with sociality and is, in fact, a defining, integrated feature of everyday workplace life. Suggests Orlikowski (2007), "I propose that we recognize that all practices are always and everywhere sociomaterial, and that this sociomateriality is constitutive, shaping the contours and possibilities of everyday organizing" (p.1444).

Orlikowski's (2007) demands are twofold: Materiality—the artifacts and arrangements of technology—must be recognized in all research studies; and materiality must not be relegated to case-by-case instances of technology adoption or diffusion, nor demoted to a position of lesser importance behind sociality. Instead, materiality should be bound within every discussion, for it is entwined within organizational practice (Orlikowski, 2007; Zammuto et al., 2007; Leonardi & Barley, 2008).

To reinforce the equality and interdependence between the material and social, Orlikowski (2007) used the term, “sociomaterial” to conjoin the concepts and, through language, to bind the concepts permanently. To further integrate sociomateriality in research practice, Orlikowski (2007) suggested rethinking Web 2.0 technologies as constitutive, active parts in determining how humans function. She declared researchers should avoid considering technologies as taken-for-granted, passive artifacts, which are only considered important when they increase individual efficiencies (Orlikowski, 2007).

Leonardi and Barley (2008) expanded on Orlikowski’s (2007) ideas, identifying four challenges for researchers to consider when moving forward in the discussion surrounding materiality and organizing. With these challenges in mind, Leonardi and Barley (2008) believed that researchers could accurately depict how people work with technology and “reconcile the reality of materiality with the notion that outcomes of technological change are socially constructed” (p 159). The four challenges are:

- Identify the relevance of what is material by learning how technologies are used;
- Identify the parameters of what is material by developing typologies and definition boundaries;
- Acknowledge and bridge the divide between the development, adoption, and continued use stages of technology; and
- Use constructionism as a lens to identify social relationships at the individual and organizational levels in order to understand shared outcomes.

To mitigate the risk of conducting research or developing theoretical lenses that become irrelevant against the changing fabric of technology and organizing studies, Zammuto et al.

(2007) offered five "affordances" for researchers to be aware of when analyzing the sociomateriality of technology and organizing. A researcher must:

- Be able to visualize all processes of work studied;
- Be aware that flexible, real-time products and services may be created;
- Be cognizant of virtual knowledge-sharing;
- Be aware that technology enables mass collaboration; and
- Realize that simulations to mitigate risk may occur.

Material-discursive practice. Akin to the combination of materiality and sociality to form sociomateriality, Orlikowski and Scott (2015) suggest combining discursive practice with materiality to represent the ontologically inseparable, "material-discursive" practice. Essentially, material-discursive practice means that a researcher should not view material factors as concrete, unchangeable "things" anymore. Instead, a researcher should view the material factors of a phenomenon as capable of continual change. There is a deeply entangled relationship between material objects or situations and emergent discourse. Ultimately, discourse shapes the material: Materiality can be influenced, adapted, created, and deconstructed by social factors of communication and influence.

Digging deeper into the argument that materiality must be taken more seriously in empirical academic studies, Orlikowski & Scott (2015) suggest that researchers should reframe their approach to avoid assuming that human agency is key to understanding social life. Instead, researchers should focus on how their research is framed, staged, and practiced in order to see "bodies, spaces, objects, and practices" as constitutive aspects of materiality (Orlikowski & Scott, 2015, p. 698). This shift in academic practice allows researchers to recognize "insights that are generated through boundary-making practice" in discursive happenings between entities

(Orlikowski & Scott, 2015, p. 698). Thus, researchers may approach their studies with an ontological lens, so that the process of research becomes an emergent process of "criticality," rather than an imposed, "critical" process. Materiality becomes embodied as a "happening," no longer being a fixed "thing."

Material-discursive practice enables organizational researchers to highlight important, emergent moments of interest and ask critical questions to guide research, these include:

- What discursive materializations are manifesting in reality at particular places and times?
- How are discursive materializations performing and producing situational results (consequences)?

Orlikowski and Scott (2015), provide a useful example to help understand the application of material-discursive practice in research in their brief analysis of hotel evaluation methods. They suggest that material-discursive analysis can be used when comparing traditional, paper-based, in-room hotel evaluations from customers to online, multi-media public assessments. A material-discursive approach affords a researcher the space to study the discourse of interactions between staff and the evaluations. Instead of the evaluations being stagnant, the evaluations can now be viewed as gradually informing staff as they decide to investigate the feedback. A material-discursive lens lets a researcher discover "how guest feedback is materialized in practice—from comment cards to online reviews—are producing different guests, different hoteliers, and different hotels" (Orlikowski & Scott, 2015, p.703). Essentially, the comment cards and online comments are no longer simply artifacts with single points of interactions; rather, the online evaluations can lead to a shaping of the behaviours of the hotel staff and the way they work. Thus, material-discursive practice is about recognizing interactive material

objects, such as an online hotel evaluation, as “open-ended phenomena” that are continually being shaped by people who, themselves, are being shaped by the process.

Moving Forward with Research Practice

Because of their nimble staffing and decision-making structures as well as their lesser concern for financial growth, non-profits are particularly excellent places for researching technology innovation (Burt & Taylor, 2003; Humphrey et al., Kim, & Dudley, 2004; Alshammari et al., 2014; Ihm, 2015; Raman, 2015). On a personal level, having worked in digital communications at a Vancouver branch of an environmental non-profit, my curiosity has been stimulated to understand more about factors that help or hinder technology adoption and continued use.

Certainly, research studies regarding technology and the non-profit workplace will continue to emerge, for new, performance-improving information and communications technologies continue to be developed across the Web 2.0 landscape. Factors of sociality, including user-perceptions and social influences, as well as factors of materiality, including resources and performance outcomes, will continue to be of research interest. But I believe there is a particular opportunity in approaching new research with the idea of sociomateriality—that sociality and materiality are fused and of equal importance. Furthermore, sociomateriality, if combined with the guiding lens of material-discursive research practice, may offer researchers a new, dynamic way of exploring technology and organizing.

In the following Methods and Findings and Discussion chapters, I will introduce the non-profit at which I conducted my case study and explain how I grounded my research methodology, data collection, and data analysis through Orlikowski’s notions of socio-materiality and material-discursive practice. My research question remains: What are the most

significant sociomaterial factors that influence an environmental charitable organization to adopt and use a new communications technology? I believe this question serves not only as an excellent guide to more holistically explore material (environment, systems, staffing structures) and social (perceptions, power dynamics, leadership) factors that influence technology adoption and use, but also to understand how a new technology may affect a user's behaviour and subsequent decisions that may shape how technology performs.

Methods

Setting the Stage for Research

Formed in 1991, Ecojustice is Canada's only national environmental law charity. Comprised mainly of lawyers who represent community organizations and individuals who are fighting environmental battles, Ecojustice also has support staff working out of the Vancouver head office, including the philanthropy, administrative, communications, and leadership departments.

For nearly three years, from March 2013 to November 2015, in Vancouver, I was a member of the three-person communications team, being the primary user of Ecojustice's online communications and marketing "constituent (customer) relationship management" (CRM) platform. A CRM is typically used by a non-profit to email newsletters and breaking news alerts to stakeholders, host petitions, provide email subscription mechanisms, offer analytic insights, and, if the organization is a charitable non-profit like Ecojustice, host secure fundraising transactions and generate tax receipts. Ultimately, the CRM is used to communicate and interact with people online to keep them engaged, retain their interest, and offer a simple way to donate.

In 2013, when I started as an employee at Ecojustice, the leadership team and Board had just pinpointed the need to grow online communication and marketing outreach as a strategic goal. It was an important time to address the functionality of the existing CRM, available resources, and the strategy applied to online outreach. In late 2014, when I was still working at Ecojustice, a decision was made to replace the existing CRM as staff believed it was hindering progress of the organization's online communication strategy. I helped conduct six-months of research to find a new CRM that met the following criteria:

- Cost less than previous CRM

- Be easier to use
- Provide better customer support
- Offer mobile-responsive web pages and email templates
- Work with the existing offline CRM, the Raiser's Edge donor database

A new CRM, the U.K.-based, Engaging Networks, was eventually decided upon and formally went live to replace the old CRM on September 23, 2015, only two months before my departure from the organization. This new CRM was perceived by staff as meeting the above criteria, and in-use for approximately six-months before I conducted my exploratory case study at Ecojustice in late March to April 2016. Guided by my research question and my insider curiosity about the outcomes of the technology implementation, I interviewed five Ecojustice employees to understand what were the most significant sociomaterial factors in the adoption and continued use of Ecojustice's new communications technology, the Engaging Networks CRM.

I believe my research findings may not only provide interesting insights for Ecojustice to review, but may also offer insights for other non-profit organizations to discover. Also, I believe the findings from my project may contribute to the continuum of qualitative, academic research conducted at non-profits. As well as setting the stage for where and why I am conducting research, in this Methods chapter I will defend how I selected my research design and methodology, describe my study participants, outline my ethics application process, and explain my data collection and analysis techniques.

Research Design and Methodology

I coordinated a qualitative, exploratory case study design to conduct my field research (see Table 1). Case studies are "often seen as prime examples of qualitative research—which

adopts an interpretive approach to data, studies 'things' within their context and considers the subjective meanings that people bring to their situation" (De Vaus, 2003, p. 10). Yin (1981) notes that a case study design is excellent for examining an active phenomenon in its current setting when "the boundaries between phenomenon and context are not clearly evident" (p. 59). For my own purposes, the idea of capturing subjective insights of people surrounding active phenomena in a specific setting, aligned well with my research question.

The nature of my research question led me to take an inductive approach to research design, avoiding any assumptions of what sociomaterial factors may be the most significant in determining the outcome of a technology's continued use until data were collected. An inductive approach does not begin with asserting pre-conceived categories into which the data fit; instead, the categories emerge as the data are analyzed (Denzin & Lincoln, 1994). Therefore, I chose grounded theory as my research method: a method by which a researcher builds a theory or model based upon their interpretations of meanings and concepts through comparison and analysis of field datum as they are collected (Mayan, 2009; Yin, 2010; Merrigan, 2012).

I conducted semi-structured, one-on-one interviews to gather rich, original data in which I could explore meanings and grapple with more personally-constructed sociomaterial concepts such as workplace "culture" and power (Yin, 2010). A qualitative inquiry approach for the interviews gave me room to acknowledge multiple realities—the personal opinions and perceptions—of my various interviewees (Mayan, 2009, p. 25). After all, I could not expect everyone to share the same experience as each other, nor myself, and I wanted to "capture participants' indigenous meanings of real-world events" (Yin, 2010, p. 16).

I could not remove my pre-existing knowledge entirely from the study, for I had previous experience with the workplace and the new technology implementation, so it was necessary to be

explicit of both my ontological and epistemological viewpoints. Mayan (2009) notes that approaching a study with personal bias and insider knowledge—as was my case—is acceptable to a qualitative research style, and may even enrich the findings as long as the researcher discloses their connection to the material (pp. 25, 109). My epistemological viewpoint was one of an ex-employee who knew many things about the subject, nearly equal to the participants' knowledge of the subject. My ontological viewpoint was one of wanting to learn more about the social and material factors that could become known through the semi-structured interview process.

Table 1 illustrates the logical pathway I followed to construct my research design, from the theoretical foundation and guiding research question—the "why" of my research—to the process of collecting and analyzing data—the "how" of executing the research.

Table 1.

Research Design

Theory / Lens	**Research Question**	**Setting**	**Design**	**Method**
Sociomateriality	What are the most significant sociomaterial factors that influence an environmental charitable organization to adopt and use a new communications technology?	Canadian environmental law charity (non-profit)	Exploratory case study	Grounded theory, qualitative inquiry

Participants	Sample Size	Data Collection Instrument	Data Analysis	Outcome
People who worked at Ecojustice and knew the most about the new CRM technology	5 people, purposively sampled	Semi-structured interviews	Constant comparison	Emergent model or theory

Participants

"Purposive sampling" is a qualitative selection technique in which a researcher makes "strategic choices" to select a small number of stakeholders who are the most knowledgeable about a specific phenomenon and may "advance the research far better than any randomly chosen sample" (Palys, 2008, p.697). This sampling technique enabled me to select five people, from a group of nine, whom I identified as the most connected and knowledgeable about the new technology at Ecojustice to conduct my one-on-one, semi-structured interviews. Table 2 highlights the five people I chose who were "good representatives of their group culture…representing different types of participants in that setting (i.e. different roles)" in order "to capture the full range of subjective meanings available to members" (Merrigan et al., 2012, p. 215). I was certain that the five chosen participants knew the most about the subject as either users or managers and happened to represent a broad mix of roles, including:

- Current staff and ex-staff
- New staff and tenured staff
- Fundraisers (Philanthropy Team) and communicators (Communications Team)
- Users and Leadership (management)
- People involved with the original implementation decision and those who were not

Table 2.

Study participant matrix:

Yellow = Participants chosen for the study
Blue = Not chosen for the study

	Technology Users	**Leadership (Management)**
• Job description • Length of time as employee • Employee status at time of study	• **Participant #1 (P1)** • Communications team • Eight months • Primary user	• Executive director • Ten years
	• **Participant #2 (P2)** • Fundraiser on the Philanthropy team • Three years • Ex-staff, departing one month before study • Involved in implementation decision	• **Participant #4 (P4)** • Communications Leader • Two years • Ex-staff, departing three months before study • Involved in implementation decision
	• **Participant #3 (P3)** • Fundraiser on the Philanthropy team • Three years • Ex-staff, departing four months before study • Involved in implementation decision	• **Participant #5 (P5)** • Communications Leader • Six years, previously at non-Leader level • Not involved in implementation decision
	• Fundraiser on the Philanthropy team • One and a half years	• Philanthropy Leader • Six years • Ex-staff, departing one year before study
	• Communications team • Ten months • New user for three months • New, Toronto-based position, so unavailable for an in-person interview	

I do not include myself in Table 2, but it is important to visualize where my position would be in this matrix, to understand my epistemological viewpoint: My insider knowledge of the subject stems from my historical relationship to the workplace. I fit into Table 2 as a:

- Technology user

- Involved in implementation decision
- Predecessor to the listed Participant #1 on the Communications team
- Ex-primary user of CRM
- Employed for three years
- Ex-staff, departing approximately four months before study

There was an interesting relationship between the Participants #2, #3, and myself, for not only were we all users, but also we were involved in the original decision to select and implement the new CRM along with the leadership team. Thus, some staff—interestingly, all ex-staff—could be identified as both users and decision makers, although not technically part of leadership.

I chose to interview both the new and departed Communications Leaders as I felt their two different experiences would be interesting for comparison: They had both witnessed the implementation back in September 2015; but the departed Leader was heavily involved in the decision to implement, while the current Leader was not involved in the implementation decision, seeing the results of the technology as it was used. Although listed in my Participant Matrix, I did not interview the Executive Director or Fundraising Leader because these people had never used the technology nor observed the technology being used by others. Also, they were some of the least-involved staff with the implementation decision, other than allocating budget. Furthermore, the Fundraising Leader had not worked at the organization for more than a year at the time of my study. The Fundraiser and the Toronto-based Communications staff person served as back-up participant options if my primary choices declined to be interviewed.

Recruitment. To recruit participants, I first secured ethics approval through the University of Alberta's Research Ethics Board, and then emailed prospective participants to

notify them of my study, gain their approval for participation, and sign consent forms. Because of my pre-existing, positive relationship with the participants I identified, I was confident that I would gain their participation, so I approached only five people at first, knowing that I had a few back-up options if someone declined or had to revoke their consent. In the end, the five participants accepted to be a part of the study and we arranged times and locations to conduct the interviews, along with the caveat that we may need to conduct follow-up interviews.

Data Collection Technique and Procedures

Timing. At the point of conducting my study, in late March 2016, the CRM had been fully-implemented but only used for about six months. Therefore, as reflected in my research question, I was aiming to explore the adoption and continued use phases of the new technology, post-implementation. To collect data, I conducted the interviews with Leadership team members and users who had either used the CRM or had been witnessing the results of the technology since September 2015.

Table 3 provides a quick overview of the timeline of events for this research project, showing when I solicited participants and collected and analyzed the field data:

Table 3.

Timeline of events

March 2016	**April 2016**	**May-June 2016**
1. Gain ethics approval from University to conduct study. 2. Email prospective participants to introduce study and gain consent. 3. Book main interview with each participant, leaving approximately one week between each participant. 4. Book tentative follow-up interview two days after main interview.	1. Conduct one, one-hour interview, per participant. 2. Immediately transcribe, analyze, code, and compare data to check for "negative cases." 3. Conduct any follow-up interviews if necessary.	1. Conduct final data analysis and look for broad themes to become generalizations. 2. Return to literature to explain study findings as bringing new insights or supporting existing ideas.

Semi-structured interviews. A qualitative interview is "a social and potentially a learning event for both participants" that requires "the researcher to ensure that relevant contexts are brought into focus so that…meanings and understandings are created in an interaction, which is effectively a co-production, involving the construction or reconstruction of knowledge" (Edwards & Holland, 2013, p.3). I chose one-on-one, semi-structured interviews as my data collection technique so respondents and I could explore and co-interpret knowledge construction as it emerged through our dialogue if we went "off script" from set questions. The respondent could be "confronted and challenged by the researcher [me] to give reasons and justify why they believe and say what they do" (Mayan, 2009, p.71). I could use my shared knowledge—epistemological viewpoint—on the subject to probe for more data.

I avoided fully-unstructured interviews so I could have some pre-written interview questions to help me maintain theoretical focus and set a pace at the actual interviews. Furthermore, having an interview script simplified the data analysis process, for I could compare and cross-reference each person's unique answer to each pre-written question.

Interview process. Semi-structured interviews were conducted over a period of three weeks at the end of March 2016 to collect data. I met individually, in-person, with two of the five participants at the Ecojustice office and the remaining three participants (ex-staff) at their residences for the interviews. I had a pre-established level of trust and friendliness with the participants, so it was easy to connect with them and have comfortable conversations without going through excessive, formal introductions and explanations about who I was as a researcher at each interview (Mayan, 2009, p. 68). I brought pre-written questions with me on a printed piece of paper for reference, so I could ask all respondents the same questions in roughly the same order of delivery.

Because I was using constant comparison as my data analysis technique, I transcribed and reviewed the interviews immediately after each was completed. This process enables a researcher to compare and categorize data while still immersed in the process of collecting data in order to "catch interesting or surprising ideas quickly to ensure that you have time to test them while you still have access to the research setting" (Merrigan et al., 2012, p.219). So, for each participant, I booked two interview timeslots in case I needed to conduct follow-up interviews to investigate any surprises or oddities arising from the data. Generally referred to as "negative cases" or "counterclaims" these data oddities need more exploration because they go against recurrent data themes (Mayan, 2009; Yin 2010). With these second, follow-up interviews pre-booked, I could either cancel them or reconnect with my respondent fairly quickly and

investigate outstanding negative cases to understand if they were relevant—needing unbundling of meaning and a unique categorization, or ignorable—being trivial to the overall findings (Merrigan et al., 2012). Furthermore, the process of investigating any counterclaims helps increase the validity of a researcher's interpretations.

Tools. Although not my primary tool for recording interview data, I brought a notebook and a few pens to each interview in case I felt compelled to write ideas and observations down that I thought meaningful. I recorded the interviews in duplicate with two devices, in case one device failed. Making sure I had fully-charged devices with large data capacities and power adaptors with me, I used a free "Tape Recorder" App on my iPad and the QuickTime program on my laptop to collect the audio recordings of the interviews. On location, I would test the recording and playback functions of the devices before embarking into the interview. Upon completion of each session, I immediately backed-up my laptop onto two external hard-drives, leaving me with the audio file saved on four, separate devices.

My research design required immediate analysis of data for comparison and identification of negative cases; therefore, to save time and energy, I paid a small fee to use the Pop Up Archive service (https://www.popuparchive.com) to auto-transcribe the audio files. To make sure Pop Up Archive worked, I used the free trial for one-hour of audio transcription before committing to the paid plan. Auto-transcription is not a perfect service, and the resulting written transcripts were not flawless, with about 75% accuracy. The auto-transcription certainly gave me a head-start, for I had an accurate interview transcription saved as a Word document within a day, ready for analysis.

Data collection instrument. I wanted to find answers to my guiding research question: What are the most significant sociomaterial factors that influence an environmental charitable

organization to adopt and use a new communications technology? The concept of sociomateriality was crucial for my study for it helps a researcher understand who or what influences organizational technology adoption. The application of a sociomaterial lens demands that a researcher equally regards the social and human factors of technology use, as well as the more concrete, material aspects (Orlikowski, 2007). So, before I could develop my specific interview questions, I needed to create a framework of potential sociomaterial factors I hoped to explore.

I assumed that new, unexpected factors could emerge through conversation, so I developed an extensive, but not exhaustive list of factors that I expected to be able to talk about at the interviews. I relied on my own workplace experiences and referred to the literature to develop the majority of the factors outlined in Table 4. I organized the factors loosely into four categories, to make sure I was recognizing both internal and external factors, as well as people-focused and resource-focused factors.

Table 4.

Sociomaterial Factors for Exploration

Category	**Sociomaterial Factor**	**Explanation of factor as it relates to the new technology**
Internal focused, resource focused	Budget	Identifies monetary support and constraints
	Time	Identifies dedicated staff time allotment
	Timeline	Identifies how long technology has been in use
	Staffing	Identifies staff structure (number of users, hierarchy)
	Setting	Identifies limitations or opportunities of physical place
	Technical	Identifies tools and infrastructure limitations or opportunities (connectivity, computers)
	Organizational context	Identifies the stability of the organization (new, established, risk-taking, conservative)
	Training	Identifies limitations of knowledge

Internal focused, people focused	Learning style	Identifies aptitude of users for learning and adaptation
	Perception	Identifies the opinions of the users and leaders towards the technology
	Ease of use	Identifies if the technology is considered easy to use
	Usefulness	Identifies if the technology is considered useful to execute tasks efficiently
	Skill set	Identifies weaknesses or strengths of users ability
	Leadership	Identifies leaders' involvement and participation
	Users	Identifies users' involvement and participation
	Power	Identifies issues of influence
	Culture	Identifies social dynamics at-play
	Performance	Identifies pressures to produce or compete
	Community	Identifies knowledge-sharing and interactivity opportunities
	Behavior	Identifies if people are changing the way they use a technology
External focused, resource focused	User support	Identifies weaknesses or strengths of technology provider support systems
	Technology provider	Identifies the limitations or strengths of the technology provider as a business
	Strategic purpose	Identifies what "things" are being produced through the technology
External focused, people focused	Outcomes	Identifies what social interactions are being produced through the technology
	Competition	Identifies pressure to remain competitive with other organizations
	Expectations	Identifies pressures to produce both tangible and social artifacts

Sociomaterial factors are not stagnant phenomena; instead these factors are continually in a state of flux from their involvement with human performance, so it is important to study the factors as evolving (Wenger, White, & Smith, 2009; Orlikowski & Scott, 2015). Therefore, I created my questions to not only help conceptualize sociomaterial factors so that the respondents could understand what we were talking about, but to also determine if the factors were considered unchanged, in a process of change, or could be seen as eventually changing. I wanted to understand how these sociomaterial factors were being enacted by people to constitute—form

or change—their decision-making and behaviour (Orlikowski and Scott, 2015). So, to understand if factors were in a state of flux, I knew I could follow structured questions with probing questions such as:

- Do you see this changing? How or why?
- Can you explain this in more detail?

Table 5 highlights my interview questions as written for current, employed users; for departed staff, I would change the tense of the question; for any non-users (mostly Leadership staff), I would lightly revise or omit certain user-specific questions, as can be seen in the interview transcripts in the Appendices.

Table 5.

Interview Questions

Sociomaterial Factor	**Questions**
Internal focused, resource focused	
Staffing	1. How many active users are there? 2. How do you use the CRM? 3. Do people use the CRM differently? 4. Do you think there are enough staff members who know how to use the CRM? 5. If you stopped using the CRM, would someone be able to use it in the way you once did?
Setting	6. Does your physical workspace limit or hinder your use of the CRM? (your office, desk, noise distractions, out of office access)
Technical	7. Where is the CRM and do you have any trouble accessing it when you need to? (user # limitations, servers going down, internet connectivity, computer power)
Organizational context	8. Explain why you would describe your workplace organization as either: • Innovative or change-adverse? • Tech savvy or non-technical?

	• Conservative or risk-taking? • Competitive or cautious?
Budget	9. If you found extra features, services or training that the CRM provided that came at an extra cost, but enabled you to do your job better, do you think you would be limited by a budget to purchase?
Time	10. Does the CRM enable you to work more efficiently and get your job done faster? 11. Do you feel you have enough time to not only do your job, but also experiment with it and try new things?
Timeline	12. If you are a user, how long have you used the CRM? 13. Do you think that you have had enough time working with or witnessing the CRM capabilities to be able to comment on its strengths and weaknesses?
Training	14. Describe the training the CRM offers or that you've been through: Do you think the training provided was adequate?
Internal focused, people focused	
Users	15. Do you think users know enough about the CRM to support each other or give guidance? 16. Do you ever have an opportunity to observe another user give a demo of the CRM to show how they perform their work, and if you did, was it helpful? If not, do you think it would be helpful to observe people using the CRM? 17. Is there someone you identify as an early-adopter of the CRM—it could be yourself—a person who influences others to embrace using the CRM to the best of their abilities?
Power	18. If you have an opinion about how the organization could better use the CRM, do you feel your opinion could influence a decision to be made? 19. Is there a hierarchical structure of users? (Clarification: super admins, leaders, editors, trainers, managers)
Learning style	20. How do you feel about learning new technologies like the CRM, do you like it, or would you prefer things to stay the same for your job? 21. Do you think your co-workers like learning new technologies like this CRM? 22. Do you consider yourself tech-minded, tech-savvy?
Perception	23. Why do you think the CRM was implemented?

	24. Do you like the CRM or do wish a different one had been implemented? Would you suggest a different one? If so, why would you?
Ease of use	25. Do you think the CRM is easy to use and do you care if it is easy to use?
Usefulness	26. Do you think the CRM is useful to your work?
Skill set	27. Is there anything you could do, or skills you could learn to improve the way you use the CRM? 28. Do you think the CRM is being used optimally—to its full capability—throughout the organization, by all users?
Leadership	29. How or when does leadership become involved with anything to do with the CRM? 30. Do you think leadership knows enough about the CRM to support users? 31. Does it matter if leadership knows how a CRM is used or what it does for the organization?
Culture	32. Do you feel support from others if you have any problems with using the CRM to do your job? 33. Do you feel that you can try new things with the CRM and work independently?
Performance	34. Do you feel the CRM enables you to perform your job more efficiently? 35. Do you think the CRM enables you to meet or exceed the expectations of the organization and your leaders? 36. Do you think learning about the new CRM was valuable for you in your professional career path? (do you think it makes you look good on a resume or boosts your lifelong knowledge)
Community	37. Does the CRM unite you with fellow staff in any common goals, deadlines, or projects? 38. Do you ever actively learn or train together with others? Be specific. (webinars, lunch and learns, meetings, conferences) 39. Since the CRM was implemented, have you found that you have become closer with the people know the CRM, identifying as part of a group?
Behavior	40. Has the CRM changed the way you do your job or what is

	expected of you? Be specific as possible.
External focused, resource focused	
User support	41. Tell me about the kind of user support that the CRM provides? (telephone, online chat, ticket system, forums, dedicated staff) 42. Is there anything you would change about user support provided to improve it? 43. Has anything you learned from user support changed the way you use the CRM?
Technology provider	44. Do you the think the CRM provider is a competitive and competent business against the landscape of other CRM providers? 45. Would you say that the CRM provider innovates and adapts to meet your organization's or your own needs? 46. Have you encountered any negative opinions about the CRM from other people or organizations?
Strategic purpose	47. What does the CRM do or produce that benefits the organization? Why does the organization need the CRM? (emails, web pages, money raising, transactions, building communities, enable dialogue, information transmission, measurement, ROI tracking) 48. Have you noticed if some of the organization's goals or your own goals are changing because of what the CRM is doing or is producing? (fundraising targets, amount of communications)
External focused, people focused	
Outcomes	49. Has the CRM changed the way you interact with external stakeholders? (deepened relationships, dialogue, more communication) 50. Since implementation, do you think new kinds of "things" are being produced from the CRM? (new projects like petitions, engagement strategies)
Competition	51. Do you think the new CRM makes your organization more competitive? (to reach charitable mission, to compete with other organizations) 52. Are you proud to use the CRM? Do you ever talk about it with non-coworkers or people from other organizations?
Expectations	53. Since the implementation of the CRM, have you noticed a

	difference in what the public expects from the organization? (emails, tax receipts, quality of "things") 54. Has the CRM raised any issues of privacy or security with stakeholders?

Data Analysis Technique

Data may be complex and ambiguous, but a researcher's main task is to interpret the data in a simple manner, so that people who were not part of the interview process or study phenomenon may easily understand what happened (Merrigan et al., 2012). The resulting data interpretations must be "faithful interpretations of your field notes" (Merrigan et al., 2012, p. 212).

I used grounded theory as my research method, so I could code and categorize content to induce a theory based on the data I collected (Denzin & Lincoln, 1994; Mayan, 2009). I did not try to insert the interview data into pre-established categories as a deductive process would demand. Grounded theory requires constant comparison and analysis of data, so I would immediately transcribe and analyze the interviews, looking for emergent categories into which statements would fit. I aimed to get to the point of "data saturation", where the data aligned into themes that I could interpret to make generalized statements about my findings (Mayan, 2009; Morse, 2015). Essentially, data saturation occurs when there is noticeable "repetition or duplication within the data set…it comes with hearing/seeing, over and over again, similar common experiences among participants, even if there are both common and contradictory experiences in the same data set" (Mayan, 2009, p. 106). So, through constant comparison and analysis, I could immediately identify any "negative cases", or data that seemed unusual or non-repetitious (Mayan, 2009, p. 109). If I found negative cases, I knew I could conduct a secondary

interview to unbundle the negative case and highlight its relevance or to decide the data were ignorable.

Table 6 highlights how I followed Mayan's (2009) inductive process for analyzing collected data, from comprehension to recontextualization:

Table 6.

Inductive research process

Comprehending	**Synthesizing**	**Theorizing**	**Recontextualizing**
• Understanding the literature. • Developing my research question. • Collecting data through primary and secondary interviews to reach data saturation point.	• Constant analysis and comparison of statements, wording, meaning, and context to describe patterns and merge content into categories. • Highlighting typical and a-typical cases.	• Making a best guess about what is happening with the phenomenon being explored. • Creating a grounded theory that explains the data.	• Returning to the literature to show how findings bring new insight or support existing ideas.

Latent content analysis and constant comparison. Latent content analysis not only enables a researcher to objectively identify, code, and categorize primary patterns, but also incorporate meaning and context—subjectivity—to the codes and categories (Mayan, 2009, pp. 93,94). This analysis method helps to identify nuance and intent of participant responses, as well as highlight my own, subjective interpretations. Morse (2015) suggests that a blend of subjectivity and objectivity is beneficial to "make sense of complex phenomena, to dissect and/or to synthesize, to abstract, to theorize, and to recognize how this fits into the works of others, all of which enables generalization and application" (p. 587).

A constant comparison of data allowed me to approach each interview informed by the preceding one, so I was better prepared to explore confusing, outlying statements made by respondents. Also, constant comparison is a core technique used in developing grounded theory, for it enables a researcher to induce and connect emergent data themes more easily. (Boeije, 2002)

I used Word documents for content analysis, preparing them with large margins on one side for writing notes. I double-spaced each document so I could examine the transcripts line-by-line, exploring datum pieces "one piece at a time, making small, incremental analytical steps" in order to create "an overall composite or theory" (Mayan, 2009, p.86). To organize my written transcripts I incorporated the following information into each page's footer:

Participant code: participant #X	Date: X
Interview: #X	Interviewer: Megan Bradfield
Location: X	Page X / X

I systematically went through the following steps to analyze and compare the data from each interview:

Step 1	**Scan:** Print out and read through entire transcript. Highlight statements that are interesting. Use a pen and paper to write down any first thoughts.
Step 2	**Compare, reduce, code:** Read slowly, line by line. An unlimited amount of codes is acceptable. Identify persistent concepts or phrases by comparing participant responses to each question and reduce the responses to their core meaning. Looking for: • Repetition • Surprising statements (could be a negative case) • Something identified as important during the interview • Something that reminds me of a theory or concept from the literature
Step 3	**Categorize:** Induce broader categories from the codes. Assign a concept or phrase that links codes together. Limit to 1-3 categories by deciding which are the most relevant. Specific codes can fit into multiple categories, but categories should not overlap.
Step 4	**Iteration:** Revisit codes and concepts and reduce further, make sure they

	reflect the data as objectively as possible.
Step 5	**Negative cases:** Revisit data to see if there is information that does not fit anywhere. These could be negative cases and need further exploration through second interviews. Either ignore the negative case or choose to create a new category for this outlier, if perceived important.
Step 6	**Saturation point:** The data throughout all interviews begins to look the same with no unexplored negative cases. Codes and categories mesh together.

After all interviews and the first round of comparative data analysis were complete, I conducted the following steps for final analysis:

Step 7	**Themes:** Look for 1-3 themes that the categories can fit into.
Step 8	**Grounded theory:** Induce a broad, case-specific generalized statement about the themes. This can be presented as an induced theory or visual model. Describe how the categories and themes fit together.
Step 9	**Recontextualization**: Explain study findings in context of the literature as bringing new insights or supporting existing ideas.

Challenges encountered and changes required. Although I had originally planned for about a week in between each interview, so I could have ample time for transcription and data analysis, it was necessary to complete the interviews within a short, three-week timeline because of the participants' schedules. Consequently, I cleared my own schedule to make time for quick and dedicated transcription and first-round data analysis to happen between each interview. This quick turnaround between interviews was surprisingly beneficial, however, as I was deeply immersed in the data and bringing knowledge from previous interviews to each successive one, allowing me to explore negative cases as they emerged during the interviews. In other words, because I had a good recollection of data from constant comparison of previous interviews, I was attuned to notice if a participant said something in opposition to what others before them had

said. My semi-structured interview style allowed me to go off-script to unbundle these negative cases, real-time.

Credibility: Overcoming data limitations. Identifying ways to bolster the credibility of a study before the collection of data is important, for "the most desirable approach is for you also to consider dealing with the credibility choices during the design of your study" (Yin, 2010, p. 85). I relied on two strategies to support the credibility of my data: Demonstrating trustworthiness and supplying rich data (Mayan, 2009; Merrigan et al., 2012; Yin 2010).

Trustworthiness. Instilling trustworthiness "mainly results from infusing an "attitude" throughout your research and during your design work, and not necessarily by employing any specific procedures" (Yin, 2010, p. 86). I demonstrate trustworthiness in this study by systematically explaining my data collection process; using reduced, direct quotes for my data presentation; and by disclosing my personal relationship to the research subject and interview participants.

Supplying rich data. I tried to collect as much data as possible through design of my interview questions. As I was interviewing from a place of shared knowledge, I used both the structured questions and the opportunity of unstructured dialogue to probe for as much subjective, rich insights from the respondents as possible. I used constant comparison for data analysis, so that I had a strong working knowledge of what ideas arose in previous interviews. I could probe for clarity if I encountered any questionable responses from participants that did not seem to fit with what others had said previously. So, during the interviews I could investigate any "counterclaims" or "negative cases" to boost the reliability of my findings (Mayan, 2009; Merrigan et al., 2012).

If requested, I can provide access to not only the written transcripts, but also the full audio files of my interviews, thus demonstrating transparency and authenticity in my work in order to support the credibility of my data. Providing access allows other researchers to examine my data set in its entirety to either confirm or challenge my interpretations.

Summary

For this exploratory case study, I conducted semi-structured, one-on-one interviews with five, purposively-sampled staff and ex-staff of Ecojustice to provide insight and answers to my guiding research question:

- What are the most significant sociomaterial factors that influence an environmental charitable organization to adopt and use a new communications technology?

I used both my existing workplace knowledge and knowledge gained through the academic literature to construct my interview questions, so that I would gain rich insights from respondents. A grounded theory method demanded that I constantly analyze and interpret data collected as I worked through the interviews. This method enabled me to be prepared for "negative cases" and probe respondents for clarity during the interview process.

Led by my research question, I ultimately wanted to understand what were the most significant sociomaterial factors at-play in this particular situation and to develop a set of induced theoretical statements that could be tested by further studies of technology adoption at non-profit organizations.

In the following Findings and Discussion Chapter, I will present particularly interesting highlights from the data collected, showing how I made interpretations and induced codes, categories, and overarching themes to organize my findings. I will explain my grounded theory

that emerged from the analysis and recontextualize my findings as new, or supportive of existing theory, by returning to the literature.

Findings and Discussion

Introduction

To gain insight into my guiding research question of what the most significant sociomaterial factors are that influence an environmental charitable organization to adopt and use a new communications technology, I conducted one-on-one, semi-structured interviews with two current staff and three recently-departed staff of the organization. These interviews were conducted over a period of three weeks at the end of March 2016.

With my knowledge gained though scanning the academic literature, I developed a matrix in which to formulate my interview research questions around broad categories of sociomateriality, so I could explore:

- External and internal-focused organizational factors of influence, and;
- People-focused (sociality) and resource-focused (materiality) factors of influence.

From this matrix, I prepared a set of 54 interview questions that helped me focus on the participants' opinions of what sociomaterial factors may be at-play in their personal—and the organization's—continuing use of the CRM.

To adhere to the rigour of my exploratory case study research design and my grounded theory approach, I used a constant comparison method of analysis of each interview transcription before embarking into successive interviews. A constant comparison method is central to the grounded theory approach for, through comparison, "the researcher is able to do what is necessary to develop a theory more or less inductively, namely categorizing, coding, delineating categories and connecting them" (Boeije, 2002, p. 393). A constant comparison of content allowed me to approach each interview informed by the previous one. This way, I was prepared

to explore any unusual or confusing statements from participants that seemed to not align with the general opinions of other participants. This constant comparison of data enabled me to see themes emerge from participants' answers as I conducted interviews. I will highlight my systematic approach to data comparison throughout this chapter.

I begin this chapter with an overview of the interview logistics, explaining how interviews transpired and why certain prepared questions were skipped for particular people. Next, I will combine the data presentation and data analysis into one section to reflect the interconnectedness of constant comparative content analysis with data collection. I will present each interview question I prepared with its related sociomaterial lens, along with greatly reduced versions of the various responses the questions garnered. Each interview question will be followed with a short synthesis of concepts induced from my constant comparison approach. Then I will present three overarching categorical themes that I derived from the concepts.

To maintain focus on my guiding research question, this chapter will conclude with a discussion of how I interpreted the data and generated a grounded theory from my own epistemic viewpoint, and how this interpretation may be recontextualized into the concept of sociomateriality and the broader body of qualitative research concerning technology and organizing.

Interview Logistics

My five research interviews were conducted over a period of three weeks in the beginning of April 2016. Appendix B provides a summary of when, where, and with whom the interviews were conducted. Appendix B also highlights how long the interviews were and how many of the 54 planned research questions were asked for each participant, along with which questions were skipped. For the remainder of this study I will refer to the five interview

participants as P1, P2, P3, P4, and P5 for their anonymity and to correlate with their details in both Appendix B and Table 1 in the preceding Methods chapter.

There was a considerable variation between all of the interview participants' professional details—no two were alike in all aspects of how they were situated with regards to their team membership type, user status, employment status, or involvement with the original implementation decision. Notably, P1 and P5, the only current staff at the time of this study, were both uninvolved with the CRM implementation—their perspectives will be of particular interest as this chapter unfolds, as their perspectives shed light on the future of Ecojustice.

At the interviews, before starting the recording, I let each participant know that they could skip a question if they felt they could not or did not want to answer it. Specifically, I knew that some non-users, ex-staff, leaders, or people who were not involved in the implementation decision would not be able to answer some of the user-specific or current-use questions that I had pre-written to guide the interviews. This flexibility to skip questions as I saw fit is "in keeping with the flexible nature of qualitative research designs" for, "interview guides can be modified…to exclude questions the researcher has found to be unproductive for the goals of the research" (Hoepfl, 1997, p. 52). Appendix B summarizes all questions skipped for particular participants.

Notably, only two participants answered all 54 questions, as seen in Appendix B. Upon reflection, the reason for this must be because they were the only actual users of the CRM—albeit using it in different ways—with one primary user on the Communications team and the other on the Philanthropy (fundraising) team. The Philanthropy team user, P2, had left the organization approximately one month before the interview, but still had considerable user knowledge regarding the system and could answer all questions.

Data Presentation and Analysis

I used grounded theory with constant comparison as my research method, so I was "develop[ing] concepts from the data by coding and analyzing at the same time" as I collected it (Kolb, 2012, p.83). Furthermore, "grounded theory methods blur the often rigid boundaries between data collection and data analysis phases of research"(Charmaz, 1996, p. 28). So, because of this integrated approach to collection and analysis, I will present my data findings in tandem with my analysis in this chapter.

I used latent content analysis to enable me to both objectively and subjectively explore the interview responses in order to highlight and categorize primary patterns within the text (Mayan, 2009, pp. 93-94). Essentially, I would assert my own epistemological viewpoint—my ex-employee and ex-user knowledge—into my analysis of the data to help induce findings.

Validity and reliability. A valid and reliable study must show that a researcher has "properly collected and interpreted the data, so that the findings and the conclusions accurately reflect and represent the world that was studied" (Yin, 2010, p.85). To bolster the trustworthiness of my data and interpretations, I have been clear about my "topic, study site, and study participants, as well as the specification of [my] approach to data collection" (Yin, 2010, p.86). I used the following tactics to increase the validity and reliability of my findings: demonstrating authenticity, exploring negative cases, and deploying reflexivity.

Authenticity. I demonstrate authenticity in my work because I can supply full transcripts and recordings of the interviews if requested. These transcripts confirm that I "actually did the fieldwork reported in [this] study" (Yin, 2010, p.86). Furthermore, I use direct, reduced quotes from the interviews as the source of my codes during qualitative analysis, thus demonstrating that I am remaining as close to the data as possible to formulate concepts and categorical themes.

As an ex-employee, I have a strong "understanding of the contextual conditions that prevail" in this case study and this is important to qualitative analysis (Yin, 2010, p.86). I have been clear of the fact that as an ex-employee, I have insider knowledge of the topic and the workplace being studied: I use my insider knowledge to supplement objective data findings, adding subjective interpretations to induce a final, grounded theory.

Negative cases. Throughout my content analysis, I clearly highlight negative cases, or "data that seems to stand far apart from the other data collected" (Kolb, 2012, p. 85). The investigation of negative cases helps a researcher "deepen understanding of the people they are studying", "gain valuable insight", and help mitigate "interjecting personal bias in analysis" (Kolb, 2012, p. 85).

Reflexivity. When using constant comparison, "the researcher must incorporate continuous awareness of reflecting, examining and exploring his/her relationship through all stages of the research process" (Kolb, 2012, p. 85). In essence, I keep my relationship to the participants top-of-mind as I reflect upon and interpret the data in an iterative process.

Content analysis of responses: Inducing concepts. In this section, I systematically present each one of my prepared interview questions, introduced and framed by a corresponding sociomaterial factor to remain focused on my guiding research question: What are the most significant sociomaterial factors that influence an environmental charitable organization to adopt and use a new communications technology? The sociomaterial factors are grouped as such:

- Internal-focused, resource-focused factors of influence
- Internal-focused, people-focused factors of influence
- External-focused, resource-focused factors of influence
- External-focused and people-focused factors of influence

I reduce and compare key quotes from the participants for, “in a grounded theory approach, the areas of reducing the data into manageable units and coding information are integral parts of the analysis process” (Kolb, 2012, p.84). This reduction of quotes was an iterative process that I began upon collecting the data, between each interview, and then continually revisited until I had a highly synthesized version of quotes.

I highlight typical and a-typical responses to questions to either disregard certain responses or explore them further. I use quotes as I want to demonstrate that I am remaining as close as possible to the data collected—I am inducing findings, and using the reduced quotes to derive concepts.

I follow each question and response with a list of concepts I induced from the data. In this synthesizing stage of an inductive research process I compare statements, wording, meaning, and context to describe patterns and merge into concepts, looking for:

- Repetition
- Surprising statements (negative cases)
- Something identified as important
- Something that echoes a theory or concept from the literature

Presentation of responses and induced concepts.

1. How many active users are there?

Sociomaterial concept	Key quotes from responses
Staffing: Identifies staff structure (number of users, hierarchy) Internal-focused, resource-focused	P1: “Five…Who the people are has changed and also more people have access now than used to” P2: “Maybe four or five depending on staff turnover” P3: “At least three” P4: “Four? I don’t know if that’s correct?”

	P5: "Two or three?"

Answers range from two to five and most participants posed their answer as a question, so I was struck by how unsure the respondents were, other than P1, the current user. I induce one key concept from these responses:

- The users themselves and number of users are changing

2. How do you use the CRM?

Sociomaterial concept	Key quotes from responses
Staffing: Identifies staff structure (number of users, hierarchy) Internal-focused, resource-focused	P1: "Build emails...Make and adjust donation forms and advocacy pages…Track their performance…Look up information and about people and check what they're doing." P2: "Process online donations…Move it [online donation] from Engaging Networks into a different CRM, which is Raiser's Edge…We did most of our data analysis in Raiser's Edge." P4: "I did not use it, I provided input on how things looked." P5: "I do not use it directly. So I tend to just approve things."

A secondary CRM is mentioned—the "Raiser's Edge" CRM appears to be used for data analysis by the Philanthropy user. It is interesting that there are two, unique CRMs. I induce two key concepts:

- Communications users use the CRM differently than Philanthropy users
- Leaders do not use the CRM and only approve things

3. Do people use the CRM differently?

Sociomaterial factor	Key quotes from responses
Staffing: Identifies staff structure (number of users, hierarchy) Internal-focused, resource-focused	P1: "I think I probably use it for, for all the things we use it for… I also have been using it recently to import gifts into our donation database, Raiser's Edge….The communications team would use it more for building things…Tracking the performance...Whereas the fundraising team uses it pretty exclusively for moving gifts into Raiser's Edge." P2: "Yes." P3: "Yes…There's two different sides to users…The reception of donations…Using the CRM to communicate with people outside

	the organization…Incoming and outgoing users." R: "The fundraising and communications teams?" P:3 "Yes." P4: "There was a really big difference between how the communications team…used the CRM and how...many people were actively using it on the philanthropy team…Like a portal to bring money in and to bring information in versus sort of a face of the organization." P5: "Our team…Will use it to build things but also to sort evaluate how different e-mails performed and to take a closer at the analytics…I think if anyone is using it on the Philanthropy team it's more for like, just taking a look at how things performed or looking at an e-mail address."

I induce three key concepts from these responses:

- Different teams use the CRM in different ways
- The current primary user on the Communications team (P1) uses the CRM in all ways
- Philanthropy users move donations and Communications users build things for external audiences and evaluate performance

4. Do you think there are enough staff members who know how to use the CRM?

Sociomaterial factor	Key quotes from responses
Staffing: Identifies staff structure (number of users, hierarchy) Internal-focused, resource-focused	P1: "No…Many of the people who are using it now are very new users and have a very basic understanding of the tasks they do. And they don't necessarily understand how the things they do in the CRM connect to what other people do in the CRM…Instead of having more people using it, it would be better to have those people who are using it understand how it works better." P2: "No…CRM data management is tricky because you don't want too many people in the database. Having too many people with different styles of working can sometimes clutter the database or make it, not uniform. Unless there's very stringent best practices." P3: "No… if anything were to happen to one of the primary users, especially the primary maintainer of standards and best practices…There would be no one who had the adequate skills to be able to replace them." P4: "I don't. I think we ran a very close risk…Actually having no

	sort of user that had a full picture." P5: "Maybe not? But I think that has more to do with like certain current staff shortages." Researcher: "So are there may not be enough staff right now but you see that changing?" P5: **"**Ya definitely."

Although P2 and P3 agree with all respondents in that there are not enough users, it is interesting how both of these Philanthropy members focus on the need for a user to maintain best practices with CRM so as not to "clutter" it. I induce two key concepts:

- There needs to be more "full picture" primary users who know how to use the CRM well and maintain best practices
- There are not enough users of the CRM, although the current leader of the Communications team sees this changing with new hires

5. If you stopped using the CRM, would someone be able to use it in the way you once did?

Sociomaterial factor	Key quotes from responses
Staffing: Identifies staff structure (number of users, hierarchy) Internal-focused, resource-focused	P1: "Nobody currently knows how to do all the things I do in it on a regular basis." P2: "No…When I left, there was this gap in knowledge." P3: "I had integrated knowledge of what was previous and what was coming in…No I was the only person who knew all those things."

I induce one key concept from these responses, and it shows the organization is at risk:

- There is only one current, primary user with integrated knowledge of the CRM

6. Does your physical workspace limit or hinder your use of the CRM?

Sociomaterial factor	Key quotes from responses
Setting: Identifies limitations or opportunities of physical place Internal-focused, resource-focused	P1: "The only problem that I ever had is that my computer screens were small." P2: "The IT person installed two really large computer monitors on my desk. So in order for me to be able to work in a more effective manner on the CRM." P3: "Not really"

- Problems with physical workspace do not seem to be a relevant factor, although people needed bigger screens.

7. Where is the CRM and do you have any trouble accessing it when you need to?

Sociomaterial factor	Key quotes from responses
Technical: Identifies tools and infrastructure limitations or opportunities (connectivity, computers) Internal-focused, resource-focused	P1: "We had one service outage but it was very brief." P2: "There was one day where the system crashed." P3: "I never had any problems." P4: "When there was computer problems of any kind when there was a new CRM there was a tendency to sort of blame it on that." P5: "I have not heard of any problems. So far."

- Access to the CRM does not seem to be a relevant factor. Although it is interesting to hear P4 suggest that a new technology is sometimes blamed for other, unrelated technological problems.

8A. Explain why you would describe your workplace organization as either: Innovative or change-adverse?

Sociomaterial factor	Key quotes from responses
Organizational context: Identifies the stability of the organization (new, established, risk-taking, conservative) Internal-focused, resource-focused	P1: "Change adverse. But I think there are some areas where we're innovative." P2: "Innovative, but in the very long drawn out manner…Because of financial constraints." P3: "Begrudgingly innovative…Always done with an extreme amount of hesitancy." P4: "Change adverse…But not dramatically so, in that there's a few innovators." P5: "Tends to be a change adverse in a lot of aspects like financials… But pockets of like innovation."

In general, all respondents were not definitive about their choice of answer and fluctuated between change adverse and innovative. I induce two key concepts:

- The organization is change adverse because of financial constraints

- The organization has a few innovative people and innovation happens slowly

8B. Explain why you would describe your workplace organization as either: Tech-savvy or non-technical?

Sociomaterial factor	Key quotes from responses
Organizational context: Identifies the stability of the organization (new, established, risk-taking, conservative) Internal-focused, resource-focused	P1: "Somewhere in the middle… We have people who are tech savvy but usually those people who are more tech savvy are in roles where that's more needed." Researcher: "How to you qualify tech-savvy?" P1: "Creative and flexible with their use of technology. They pick up new things fast and they are not afraid of learning a new technology." P2: "Non-technical. I think the types of people that are attracted to roles at non-profits don't usually have a tech background. Unless it's specifically a you know, IT manager role." P3: "I would have said, non-technical. But now being at a new place of employment, there were certain things that were very tech savvy." Researcher: "And the people themselves. Did you feel tech-savvy or non-technical?" P3: "Not tech savvy. I think very intelligent people…But not necessarily intuitive when it came to actually using technology platforms." [The remainder of this response is taken from question 22] Researcher: "How do you qualify tech minded or tech savvy? P3: "Logical thinking…Using technology to solve problems…If you think through like the premise and the end point. And the steps, the logical steps between those two points." P4: "A few very tech savvy people." Researcher: "What's your qualification of tech savvy?" P4: "An attitude of constant learning…knowing where to look for answers." P5: "It really varies…From a departmental standpoint…If you also look at demographics." Researcher: "How do you qualify tech savvy?" P5: "Be able to trouble shoot it themselves or know where to go to find solutions before involving IT."

Asking how people qualify tech-savvy was a useful off-script, probing question to complement the main research question, because of the contrary answers I received from some people,

especially P2's opinion. P2 believes that in general, tech-savvy people are not attracted to working at non-profit organizations other than in IT roles. I induce three key concepts:

- Communications members think there are a few tech savvy employees in certain roles where it is needed to be tech savvy
- Philanthropy members do not see individual employees as tech savvy
- Respondents qualify tech savvy as problem solving and willingness to learn

8C. Explain why you would describe your workplace organization as either: Conservative or risk-taking?

Sociomaterial factor	Key quotes from responses
Organizational context: Identifies the stability of the organization (new, established, risk-taking, conservative) Internal-focused, resource-focused	P1: "Conservative in the sense that if something's not broken why fix it?" P2: "Risk taking. Because the fact that it and then eventually did adopt a new online CRM system. Even though it took a number of years. It's not conservative, it's open to new tech and technology ideas." P3: "Conservative! If an idea was presented that was slightly too radical…Any kind of risk was leached out of it." P4: "Overall the organization is conservative." P5: "Fiscally conservative…How it runs its operations…But in terms of the nature of litigation. And the nature of working in like a progressive social environment. The work you do does tend to be a little bit on like the far edge."

Once again, P2 states the most contrary opinion to the others, and qualifies their opinion that the organization is risk taking because Ecojustice did in fact adopt a new CRM, although taking a while to do it. Personally, I wouldn't agree that taking a long time to adopt a new technology is a sign of a risk-taking organization, as the new CRM was fairly necessary. Therefore, I think this negative case can be overlooked. I induce a key concept from these responses:

- The organization is generally conservative, both fiscally and operationally

8D. Explain why you would describe your workplace organization as either: Competitive or cautious?

Sociomaterial factor	Key quotes from responses
Organizational context: Identifies the stability of the organization (new, established, risk-taking, conservative) Internal-focused, resource-focused	P1: "Competitive…The legal work is really adversarial…Many people in the organization see themselves as very professional and competent and always striving for doing better so in that sense, kind of competitive." P2: "Cautious. Because Ecojustice itself has such a specific focus on its legal work…Cautious to step away and do things that might detract the donor's attention…They're not going to move out of their comfort zone." P3: "I would say cautious…Internally competitive…This is what we did last year and this is what we want to do in the future." P4: Internally competitive in some places…At the same time cautious…there is not really motivation to take a lot of risks." P5: "There are a lot of competitive people at the organization…Competition emerges between teams...Lawyers are very competitive people…You have like this culture of like, competition and expertise."

There are some contrary answers to this question because of how respondents interpreted the question. Most respondents focused on internal culture on an individual level, while P2 focused on the external facing culture of the organization. I induce a key concept:

- The organization is internally competitive—the people are competitive

9. If you found extra features, services, or training that the CRM provided that came at an extra cost, but enabled you to do your job better, do you think you would be limited by a budget to purchase?

Sociomaterial factor	Key quotes from responses
Budget: Identifies monetary support and constraints Internal-focused, resource-focused	P1: "No…Right now our team is small and has had limited staff capacity for a while so our director is I think trying really hard to counterbalance that by giving us what resources we need to be doing stuff really effectively and efficiently." Researcher: "Some people have said such a limitation, but you still work here, so things have changed?" P1: "Yeah I mean budget is a limitation in the sense that we don't have infinite resources…My perception is that in the last few months...Feels like there's more wiggle room in the budget or maybe is making cuts in other areas." Researcher: "A fundraising budget now exists on the communications team?" P1: "Yes."

	Researcher: "Do you think that is a factor. The fact that you're, you are bringing in money, therefore you get to spend more?" P1: "Well we received a certain budget to spend along with the responsibilities of raising a certain amount money so that money does exist in our budget now." P2: "Yes." P3: "Absolutely. But you had to justify any money you wanted to spend." P4: "One of the challenges …Was the division between the communications and the philanthropy budget…It wasn't necessarily in the hands of the people who could actually make use of it…It wasn't necessarily clear where that money was." P5: "If it were upgrading, or adding a feature here or adding a feature there or a few thousand dollars here or there…That would probably be not be such a big consideration."

Ex-staff, especially Philanthropy team members, thought budget was a limiting factor and P4, the ex-leader of the Communications team, noted the challenge of a divided budget between teams. However, P1 and P5, current staff, have a different opinion because they have an allocated team budget and small team to support. I induce a key concept:

- Current staff do not see budget as a strong limiting factor any longer

10. Does the CRM enable you to work more efficiently and get your job done faster?

Sociomaterial factor	Key quotes from responses
Time: Identifies dedicated staff time allotment Internal-focused, resource-focused	P1: "Yeah definitely." P2: "For the donor relations team. Not necessarily. And not because of the CRM, but because of the way we integrate it into our other CRM [Raiser's Edge]." P3: "I never actually used the CRM." P4: "I wasn't there for people getting comfortable." P5: "Yes…I think it's more user friendly…Definitely easier to build things than our previous system."

I induce two key concepts:

- Current communications staff consider the new CRM helpful for increasing efficiency

- The new CRM made things less efficient for the Philanthropy user, because they had to integrate it with another CRM

11. Do you feel you have enough time to not only do your job, but also experiment with it and try new things?

Sociomaterial factor	Key quotes from responses
Time: Identifies dedicated staff time allotment Internal-focused, resource-focused	P1: "Ya…Especially when we first brought in the CRM… We had more people on our team at that time…Now we're bit tighter on time and energy but I sort of see it as like that ongoing thing we have to do if we want to use it well, is to keep experimenting and testing stuff…To make time for that." P2: "No…I would have liked to, but I didn't have enough time." P3: "Absolutely not…When it came time to actually launching the new platform…Rather than being able to see the project through…I had to pass the reigns over to somebody."

Ex-Philanthropy members did not have time for experimentation, and the current user, P1 struggles as well because there are less people. I induce a key concept:

- Although there are time and staff constraints, the current user sees the necessity in making time for experimenting

12. If you are a user, how long have you used the CRM?

Sociomaterial factor	Key quotes from responses
Timeline: Identifies how long technology has been in use Internal-focused, resource-focused	P1: "Six months." P2: "Six months."

- Timeline of CRM use is not a particularly relevant factor for this case.

13. Do you think that you have had enough time working with or witnessing the CRM capabilities to be able to comment on its strengths and weaknesses?

Sociomaterial factor	Key quotes from responses
Timeline: Identifies how long technology has been in use	P1: "Yep, I think so." P2: "Some of them. Yeah…At least from the way I used." P3: "No."

Internal-focused, resource-focused	P4: “No.” P5: “It'd be kind of hard to say without actually like seeing a demo or using it.”

- Timeline of CRM use is not a particularly relevant factor for this case. And responses simply reflect that some participants are users, whereas others are not.

14. Describe the training the CRM offers or that you’ve been through: Do you think the training provided was adequate?

Sociomaterial factor	Key quotes from responses
Training: Identifies limitations of knowledge Internal-focused, resource-focused	P1: “Phone and Skype…Training online…Its’ pretty comprehensive.” P2: “I was mostly trained by staff.” P3: “The training I went through was setting it up…I remember feeling moments of like, ‘oh yeah that makes sense, we’ve got this’ and moments of feeling like, completely lost.” P4: “There was way more one to one engagement. And way more willingness to answer questions. So it seemed that the training was overall adequate…There were some knowledge gaps…But I believe that might have been a time on task and attitude issue. More so than training that was available issue.” P5: “I’ve not done it myself…I guess the baseline training that’s offered—whether you like webinars or one on one calls—it’s been really helpful.”

Surprisingly, all participants had some sort of answer for this question, even though the leaders were not trained, and P3 experienced a different, early training experience. Also, P4 introduces an interesting people-based lens to the answer by suggesting that the adequacy of training can be affected by the attitude of the people who receive it. P1, the current user, is the only respondent who was actually trained, so I induce one key concept from these responses:

- The training offered by the CRM providers is adequate

15. Do you think users know enough about the CRM to support each other or give guidance?

Sociomaterial factor	Key quotes from responses
Users:	P1: “It's not very reciprocal. But usually if other users have questions they all come asking me…But there's no one within

Identifies users' involvement and participation Internal-focused, people-focused	Ecojustice who I can go to find guidance or support with the CRM." P2: "Right now there's only one person in the organization who knows how to really use it, so no." P4: "Communications people did know enough to provide a lot of guidance but there wasn't necessarily a lot of trust that they could answer the donor side questions."

I induce two key concepts:

- One person can give guidance to all users, but it is not reciprocal
- Lack of trust does not hinder others from asking the current Communication user for guidance any longer

16. Do you ever have an opportunity to observe another user give a demo of the CRM to show how they perform their work, and if you did, was it helpful? If not, do you think it would be helpful to observe people using the CRM?

Sociomaterial factor	Key quotes from responses
Users: Identifies users' involvement and participation Internal-focused, people-focused	P1: "I've seen some other users internally use stuff…And it was definitely helpful…Even if it wouldn't be someone internally to have other users of the CRM in the city, or something like that show one another how they do specific things." P2: "Yes. That's how I learned it…But once again, it doesn't take into consideration best practices…I don't have that from an official source. And maybe they're doing that the long way around when there's an official way of doing it that's a lot shorter or more efficient." P4: "I never did. But of course that would be helpful."

P1 raises an interesting idea, in that users could not only learn from internal users, but also from staff from other organizations. This idea harkens to the concept of Communities of Practice—learning within group social situations. Again, P2 has a slightly different view on learning from others, expressing a valid concern about learning inefficient methods from other users. I induce two key concepts:

- Learning from other users within the organization is useful and has been done, but there should be caution about learning unofficial information that lacks best practice

- Learning from other users outside the organization could be valuable

17. Is there someone you identify as an early-adopter of the CRM—it could be yourself—a person who influences others to embrace using the CRM to the best of their abilities?

Sociomaterial factor	Key quotes from responses
Users: Identifies users' involvement and participation Internal-focused, people-focused	P1: " Yeah we had some early adopters but they've all left at this point." P2: "I guess it was you and P3? But she kind of left." P3: "Yeah it was you…Possibly me." P4: "Yes. One person really did take the key role in onboarding the system…There was also somebody on the philanthropy team who unfortunately changed roles, who I think was playing that, some of that bridging role between the teams and so that was an unfortunate loss." P5: "P1 has embraced it the most. But that's probably a function of the role…I think prior to that--you and P3 were like really champions of like switching to a new system…And then I think in terms of carrying it forward we definitely have one person."

Although all respondents note that the early adopters left the organization, it is interesting that only P4 describes it as a loss for the organization. I induce one key concept:

- There were two early adopters of the CRM and they both left, but there is a current user who continues carry it forward

18. If you have an opinion about how the organization could better use the CRM, do you feel your opinion could influence a decision to be made?

Sociomaterial factor	Key quotes from responses
Power: Identifies issues of influence Internal-focused, people-focused	P1: "Ya. I can do whatever I want. Because there is no other user that uses it as much depth." P2: "Probably not." P3: "No. There was a time during the scoping of the project and implementation that I absolutely had a lot of say."

I induce one key concept:

- The current user feels empowered to make decisions, unlike departed staff

19. Is there a hierarchical structure of users?

Sociomaterial factor	Key quotes from responses

Power: Identifies issues of influence Internal-focused, people-focused	P1: “So there's three types: I'm the super admin, and then most of our internal people are admins and then we have one person who's working on a temporary contract. And some volunteers who use the basic user account.” P2: “Two super admins. Then there was, I think there were about three or four people who had a right to change a certain amount of things.” P3: “The hierarchy was basically two levels: People who were like admin and maintainers of like data integrity or developers of strategy.”

P1, the current user has a slightly different answer, likely because P1 is continuing to use the CRM and develop the way it is structured. I induce two key concepts:

- There is a hierarchical structure of users, with super admins and more basic users
- The structure of users is changing as the CRM continues to be used

20. How do you feel about learning new technologies like the CRM, do you like it, or would you prefer things to stay the same for your job?

Sociomaterial factor	Key quotes from responses
Learning style: Identifies aptitude of users for learning and adaptation Internal-focused, people-focused	P1: “I like learning technologies, it’s fun.” P2: “I liked it.” P3: “Really like it.”

I induce one key concept:

- Users and implementers liked learning the new CRM

21. Do you think your co-workers like learning new technologies like this CRM?

Sociomaterial factor	Key quotes from responses
Learning style: Identifies aptitude of users for learning and adaptation Internal-focused, people-focused	P1: “Some of them like it and some of them don’t.” P2: “I think there are certain people who are more open to it than others.” P3: “Generally no…As soon as it stops making things easier, people have a tendency to freak out.” P4: “I think I had coworkers who really liked it.”

	P5: “I think they enjoy learning about it…So I don't think there's necessary resistance to learning about technology.”

I probed deeper on P3’s answer at the interview as it was contrary what most of the other respondents were saying. Essentially, I believe that P3 had been heavily involved in the implementation and had some frustration with the experience of not becoming a user. Also, this person left the organization early enough to not witness how the CRM was being adopted. Therefore, I believe this negative case simply represents the opinion of an ex-employee and non-user, and can be overlooked. I induce one fairly non-insightful concept:

- Not everyone likes learning new technologies

22. Do you consider yourself tech-minded, tech-savvy?

Sociomaterial factor	Key quotes from responses
Learning style: Identifies aptitude of users for learning and adaptation Internal-focused, people-focused	P1: “Yeah. I do.” P2: “No.” P3: “Yes.” P4: “Not particularly. It’s not the primary place I put my energy though.” P5: “Reasonably tech-literate…I feel like I can keep up.”

This is a fairly personal and non-objective question to answer. I was surprised that P2, as a user, did not think they were tech-minded, but they had already stated in question 8B that only IT managers were tech-savvy. I was glad to hear that other respondents all thought of themselves as not completely tech-illiterate. I induce two key concepts:

- People do not have to consider themselves tech-savvy to work with technology
- The two remaining staff consider themselves tech-savvy

23. Why do you think the CRM was implemented?

Sociomaterial factor	Key quotes from responses
Perception: Identifies the	P1: “Because the old CRM…was very inefficient.” P2: “We wanted something that cost less that was actually giving

opinions of the users and leaders towards the technology Internal-focused, people-focused	us more value for money…to facilitate people making donations online." P3: "Fundamentally it was a compromise…We picked it because it was an improvement over what we were leaving, it was also cheaper." P4: "It was a much lower cost…more adaptable…We wanted more access to one on one support and customer service." P5: "Usability challenges with the old system…Professional polish problems with the old system…it, just felt very clunky and out of date."

I induce two key concepts:

- The new CRM was implemented because it was perceived as an improvement over the old system
- The three people involved in implementation all focused on the lesser cost as a reason why it was implemented

24. Do you like the CRM or do wish a different one had been implemented? Would you suggest a different one? If so, why would you?

Sociomaterial factor	Key quotes from responses
Perception: Identifies the opinions of the users and leaders towards the technology Internal-focused, people-focused	P1: "We went with an option that was, that had similar functions to our old CRM, but better…But I think what we missed by doing that, is that some problems, some other problems exist. Like, because we use this CRM plus Raiser's Edge. They don't really connect…We're really now maintaining two sets of data…And also I think at the time the decision was made, the people making the decision…I don't think was particularly believing in a vision where we would be into a super integrated set of communications and fundraising. But I actually think in the next couple of years, we're probably going to go more and more in that direction…So I think at some point we might need to make another shift where we can be doing that all integrated…we went with like a medium step and instead of a big leap to a new thing." P2: "No, I really like the CRM. The only issue we had with it was the connector to our other CRM [Raiser's Edge]." P3: "Yes." [The remainder of this response is taken from question 23] "It wasn't the first choice of myself and the other people that were involved in scoping the project. If we were given a blank

	canvas and we're asked like, 'pick a CRM to do this particular job best.' This probably wouldn't have been what we chose." P4: "The only reason I think I would have suggested one, is even lower price." P5: "Definitely the CRM is a significant upgrade above our old system…I think you don't understand what is perfect or what you need until you are on a system and you're using it and you start to see like where blind spots are opening up and that sort of thing…So I look at this as it's like an evolution right?...And I'm sure that in two years we're going to be in a place where…we're feeling like there are some limitations and either this system is going to have new tools… Like it's going to have the tools that are going to address that. Or won't."

Participants give interesting responses to this question. Other than P2, they all allude to the notion that a decision to implement a different CRM could have been made but the circumstances and timing of the original decision dictated this CRM to be chosen. I induce two key concepts:

- The choice of implementing a new technology comes with compromise and sometimes the timing of a decision limits the choice
- The new CRM may eventually be replaced by another CRM, unless it continues to evolve to meet the needs of the organization and its users

25. Do you think the CRM is easy to use and do you care if it is easy to use?

Sociomaterial factor	Key quotes from responses
Ease of use: Identifies if the technology is considered easy to use Internal-focused, people-focused	P1: "I think it's easy to use. And I think it's getting easier." P2: "Yes it was very easy to use and that made a big difference." P3: "I remember actually it not being as easy to use as I thought it was going to be…But do I think it is important for a CRM to be easy to use? Yes…To be, on the surface for basic tasks that are done by multiple people in positions that have high turnover." P4: "I got the sense that there were certain aspects of it that were easier to use." P5: "It's pretty easy to use from what I understand from people…

	Increasingly, in our sector, in the line of work that we do, there is an expectation that you are reasonably tech savvy."

P3 supplies an interesting opinion, in that the CRM should be easy to use for simple tasks where there could be higher staff turnover; but the CRM does not have to be easy for conducting broader, strategic processes. I induce two key concepts:

- Staff consider the CRM as fairly easy to use
- The two current communications staff think users are becoming more tech-savvy and that the CRM is becoming easier to use

26. Do you think the CRM is useful to your work?

Sociomaterial factor	Key quotes from responses
Usefulness: Identifies if the technology is considered useful to execute tasks efficiently Internal-focused, people-focused	P1: "Yes. Ya definitely." P2: "Yes."

I induce one key concept:

- The CRM is useful to the small amount of people who use it

27. Is there anything you could do, or skills you could learn to improve the way you use the CRM?

Sociomaterial factor	Key quotes from responses
Skill set: Identifies weaknesses or strengths of users ability Internal-focused, people-focused	P1: "I could probably use it a lot better if I knew more about coding…I could probably also use it better if I had better understanding of how the Super Importer works…I realized how external to us that product is managed. Basically everything we need done in there, we get done by the company, JMG. And I don't think we're using it as effectively as we could. And they have no help documentation. So I think if we had an opportunity to meet them or do training with them. We could probably improve a lot this problem that still persists around how Engaging Networks and Raiser's Edge do and don't connect." P2: "I could have had more training on it from the actual CRM provider."

As P2 no longer works at Ecojustice, I focused on P1's response, of which I induce two key concepts:

- Coding skills would be helpful to use the CRM to its full extent
- Improving how the CRM is used is not as much of a problem as being hindered by the expectation that two CRMs should connect through a third-party platform

28. Do you think the CRM is being used optimally—to its full capability—throughout the organization, by all users?

Sociomaterial factor	Key quotes from responses
Skill set: Identifies weaknesses or strengths of users ability Internal-focused, people-focused	P1: "No. One because the Super Importer / Exporter always has problems. Two because many people are still learning how to use it." P2: "No. Because of a lack of training. And because of a lack of investment by upper management to get people to adopt the CRM as a really as an important tool." P4: "I could see that experimentation was already happening…I do think that at some point there may need to be an upgrade around Raiser's Edge and that database to be able to work more effectively across departments." P5: "We're using it fairly well. And I think some of the things that we can do better are probably things where the reason we haven't done it yet is not because of the technology it's because before we make the decision of how we want to use the technology there are broader conversations to have offline first. Like around, like communication strategy." Researcher: "I guess with new people coming in as well, there's the idea that there will be more brains and bodies to use it." P5: "That is the hope."

Once again P2, the ex-user, focused on training and best practices, whereas the remaining respondents focused on broader issues such as staffing users, having two databases that are not syncing together easily, and having to develop a communications strategy before experimenting with the CRM. I induce three key concepts:

- As more users get hired and trained, the CRM will be more optimally used and experimented with to use it to its full capacity

- Strategy should guide the use of a CRM
- The issue of having two CRMs is holding staff back from using the new CRM to its full potential

29. How or when does leadership become involved with anything to do with the CRM?

Sociomaterial factor	Key quotes from responses
Leadership: Identifies leaders' involvement and participation Internal-focused, people-focused	P1: "When it breaks! Like when something goes wrong…Leadership was most involved when we were implementing it…It was more in like a people management role…And they also get involved when we're doing major, like kind of meta-projects like not like building an email, but like building an email template…Looking at those designs and determining what we would want from such a template and making sure we get it." P2: "Only when there is a large issue, like a problem with the CRM. Or whens somebody leaves who is knowledgeable about the CRM." P3: "They are somewhat ultimately responsible. And they become involved when things break because that usually involves money. So they release money or they don't." P4: "Well obviously around budgeting questions, that becomes important. For data privacy questions…Risk Management…And then staffing issues." P5: "As a group we really need to be aligned in what we want to do with it…Like to have a broad view of what the implications are for our team and across the organization if we want to change directions…I would play a really important role in managing that within our team but also brokering buy-in outside of my team." Researcher: "So, some of your colleagues have said leadership becomes involved when things break. Do you agree with that statement or do you do you know why people would say it?" P5: "No…So I would say sure like in a crisis, leadership definitely needs to step in. But I do think that hopefully if you've been proactive you're not going to get to a crisis point."

P5, the current leader's answer is of particular interest, for it shows how the approach to leadership may be changing now that the CRM is implemented and working. I induce a key concept:

- Leaders get involved with the CRM when something goes wrong
- The new leader is involved differently with the CRM, being less focused on budget, privacy, and staffing and more focused on team strategy

30. Do you think leadership knows enough about the CRM to support users?

Sociomaterial factor	Key quotes from responses
Leadership: Identifies leaders' involvement and participation Internal-focused, people-focused	P1: "No…[they] know less about what, how it works than I do…I do feel like I can go to [them] with an issue and…will help me figure out what we might need to do to address it." P2: "No I don't believe so." P3: "No. Not in the case of Ecojustice." P4: "No. With the exception of like providing resources for them to go get training." P5: "Yes…I really trust the people who are using it and I trust that what they're telling me is real and I have no reason to believe that they would not be like, like be honest about it, so..." Researcher: "So you can't use the technology yourself? But you can provide emotional support?" P5: "Yeah…Understanding enough to understand that 'ok so we do need to bring in some extra help.' Or 'we should add this thing.'"

I probed P5 slightly on this question, as their answer was appearing as a negative case. But upon investigation, they were agreeing with the rest of the respondents in that leaders cannot use the CRM to support users, but they trust users will come to them if problems arise. I induce two key concepts:

- Leadership does not know how to use the CRM to support users
- Leadership trusts users to come them if problems arise and leaders can help solve problems or supply resources

31. Does it matter if leadership knows how a CRM is used or what it does for the organization?

Sociomaterial factor	Key quotes from responses
Leadership: Identifies leaders'	P1: "It definitely matters with making those strategic decisions around, what CRM we want to have, how do we manage it, how do we keep it clean, how do we keep it well-used...They need to

involvement and participation Internal-focused, people-focused	understand this high level relationship between what technology we're using and how it divides people's work and brains up." P2: "Yes. Because from a risk management perspective it's important that they at least know the basics in case you know, somebody gets sick and they have to take up the reigns of doing the necessary administrative work surrounding the management of the CRM. Or to make informed decisions about whose job it should be to manage the CRM." P3: "Yes very much. Because even if leadership doesn't know the day to day tasks and the maintenance and all of the little pieces…It is the absolute responsibility of those leadership/director people to nurture the human beings that are operating it." P4: "It's an investment of money. Things like new modules, training, how you recruit and retain staff. Like understanding just how important and critical a role the person who is your primary user is in the organization…That they're appropriately resourced." P5: "They need to understand the value it brings and how their team is using it to advance the organization's work…you have a realistic understanding of what that means in terms of their time and their energy and those, and like that sort of stuff."

I induce two key concepts after reducing the responses:

- Leaders should understand the value of a CRM has for an organization because it is an investment of money and human resources
- Leaders should understand how a CRM affects a user's work to make sure the appropriate resources and support systems are available

32. Do you feel support from others if you have any problems with using the CRM to do your job?

Sociomaterial factor	Key quotes from responses
Culture: Identifies social dynamics at-play Internal-focused, people-focused	P1: "Technical support, not really. Emotional support, yes...But I can get the tech support from people outside Ecojustice." P2: "I had support from my other colleagues who were savvy in the CRM, but once again that was only two other people."

Only two users could answer this user-specific question. I induce two key concepts:

- There are not enough CRM users to give technical support to each other
- Users support each other emotionally

33. Do you feel that you can try new things with the CRM and work independently?

Sociomaterial factor	Key quotes from responses
Culture: Identifies social dynamics at-play Internal-focused, people-focused	P1: "Yes…Usually I'm not working with anybody on it, so it's independently not even by choice necessarily. Sometimes that's a limitation actually when trying new things because, to try a new things it's helpful to have someone you can bounce ideas around with or get a second opinion on it." P2: "Yeah. And the CRM support system was pretty good, so that if I had a question, I could easily reach out to them."

Again, this question can only be answered by the two users, so responses are limited. I induce one key concept:

- Autonomous work happens; sometimes not by choice, but because of staff shortages

34. Do you feel the CRM enables you to perform your job more efficiently?

Sociomaterial factor	Key quotes from responses
Performance: Identifies pressures to produce or compete Internal-focused, people-focused	P1: "Yep." P2: "Yeah I guess so." R: "Save you time? Did it save you time?" P2: "No. It saved me time in some respects…But not necessarily because of the CRM but the way it talked the other CRM it created more work for me, if that makes sense?"

I probed P2 on this answer, as I knew the complications between the two databases particularly affected P2's position. I induce one key concept:

- The CRM allows people to perform their jobs more efficiently in general, but the problem with syncing two CRMs remains

35. Do you think the CRM enables you to meet or exceed the expectations of the organization and your leaders?

Sociomaterial factor	Key quotes from responses
Performance: Identifies pressures to produce or compete	P1: "Yeah I mean in terms of like they expect me to send emails, they expect me to make a donation page." P2: "The hope was that because of the new functions around, surrounding people being able to make donations and being

Internal-focused, people-focused	prompted to upgrade their donation to monthly instead that it would actually raise our revenue." P4: "The CRM switch provided an opportunity to revamp things and implement some ideas that really impressed people…I really do think it's about what you put into it and that some of the great things that happened weren't so much about a shiny new product as they were all the thinking that went in to that of the design work…And obviously it helps to have a good system to capture donations and all of the things that's effective. But again, I really do think it's about how people use it, up to a certain point." P5: "Generally I would say yes. But I think it's too early to say for certain. My sense is that, ya we're on the right track. And I think that any higher expectations that there will be are going to come from us, more so then outside our team."

P4's response harkens to ideas raised in the literature, in that technology as a tool cannot create change or increase organizational expectations. Instead, it is the users and strategists—the people—who determine whether or not a CRM can be applied to create change for better. I induce two key concepts:

- The CRM enables staff to meet the expectations of the organization and leaders
- The CRM may enable staff to exceed expectations, especially the expectations on the Communications team as a whole

36. Do you think learning about the new CRM was valuable for you in your professional career path?

Sociomaterial factor	Key quotes from responses
Performance: Identifies pressures to produce or compete Internal-focused, people-focused	P1: "Learning every new thing is always helpful in life, so probably." P2: "Yeah definitely." P3: "Totally and I didn't really realize how valuable. It's a skill set that is really valuable to employers who don't have it…So when you go somewhere that doesn't have it. They tell you how valuable it is." P4: "Absolutely…I think it introduced me to technical knowledge…Understanding holes in the system that I didn't see because I came into a system that was already running."

	P5: “I think it is has been really valuable to get to see how some of this stuff works up close and to understand some of the challenges with changing systems and technology and some of the conversations that come with that.”

I induce one key concept:

- The experience of switching to a new CRM and learning about it is beneficial to all staff and their work experience, including users and leaders

37. Does the CRM unite you with fellow staff in any common goals, deadlines, or projects?

Sociomaterial factor	Key quotes from responses
Community: Identifies knowledge-sharing and interactivity opportunities Internal-focused, people-focused	P1: “Definitely when we were implementing it, there was a lot of that. But usually I'm working in it pretty independently. So it's more the exception.” P2: “Yes it integrated us more with the communications team than we had previously been because we were both dependent on the database working.” P3: “I felt like we were two people that were moving something along towards a common goal that had…That team kind of spirit of like, ‘we're going to get through this’.” R: “So through implementation -- that brought people together?” P3: “Yeah. Implementation.” P4: “Yes. It definitely did…I don't know that it united everybody who needed to be united…There was lots of competing demands.” P5: “Well, I think it keeps us on track…Having technology that allows us to do interesting things is a great incentive to like get people to commit to ideas and to try new things…That helps us advance our goals.”

P5 was not involved in implementation and focused on the how the CRM may bring people together to try new things, whereas other respondents focused on the implementation process. I induce one key concept:

- The CRM implementation process in particular, united some staff across teams
- The new leader sees the CRM as an incentive to bring people together to try new ideas

38. Do you ever actively learn or train together with others?

Sociomaterial factor	Key quotes from responses

Community: Identifies knowledge-sharing and interactivity opportunities Internal-focused, people-focused	P1: “Yeah, I did some webinars with other people about the CRM. And when I'm training people, sometimes we'll encounter stuff I never saw before. And we'll learn together.” P2: “I think we had some meetings initially when we were talking about it but I’m sure there might have been some before I came along, before I came back to the organization.” P3: “Yah. Well through implementation. Not, not actually operating it.” P4: “I did, about a few things but most of it was early on about whether this is was the right product and what we want to do with it. I do know that members of the team did train together.” P5: “No.”

Group learning does not seem to be an extremely relevant factor to the CRM adoption at this point. I induce one key concept:

- Group learning mostly happened during implementation stages of the CRM, but there is some group learning that continues with the primary user

39. Since the CRM was implemented, have you found that you have become closer with the people who know the CRM, identifying as part of a group?

Sociomaterial factor	Key quotes from responses
Community: Identifies knowledge-sharing and interactivity opportunities Internal-focused, people-focused	P1: “Yes. Unfortunately many of them no longer work here, however. I think it was a good bonding experience, the CRM shift and such.” P2: “Yes definitely.” P4: “I would say, yes. I don't know that's entirely the reason, I think it was going through a major project together and seeing it from beginning to end is what probably is a more realistic way of framing what happened.” P5: “Well it's hard to say. I feel like our team previously was like close knit…I think what it does is it changes the way we think about our work. And like encouraging an environment of like collaboration that is like meaningful. As opposed to like, "I'm just going to check in with the person who does this thing, or the person who does the thing." It's an actual, I think it's more of a conversation about how to do meaningful work. That spans like different channels and crosses like functional lines.”

It is interesting how respondents focused on the implementation process, even though the question was formatted to have them focus on the time after implementation. This suggests that the implementation process was considerably memorable. P5 is not a user, nor were they involved with implementation, so their response was slightly less aligned with other responses. Interestingly, P5 focuses more on how the CRM may provide an incentive for meaningful collaboration. I induce two key concepts:

- Staff who were involved with the CRM implementation and launch were brought closer to identify as part of a group
- The new leader sees the CRM as an incentive for collaboration

40. Has the CRM changed the way you do your job or what is expected of you? Be specific as possible.

Sociomaterial factor	Key quotes from responses
Behaviour: Identifies if people are changing the way they use a technology Internal-focused, people-focused	P1: "Well the whole time I've been in this job we had the CRM, so it's a bit hard to say." P2: "It did, because it made certain things more efficient." P4: "I think as a team it did…I think it solidified in some people's minds, the Communications team as experts in places where maybe we'd been invisible before. I think we put new expectations on ourself to show that this was a worthwhile investment that we could use it effectively as people rose to the occasion…There was expectation at the leadership level…To see results and to see results quickly." P5: "I'll speak to this one from a team perspective…We've been able as a team to set new expectations for what work we do…Expectations for what our team does has changed. And certainly I also think that like shifting online fundraising into the communications team has also changed obviously expectations of what we do…It's changed, like, I guess the accountability for those things."

Both leaders provide rich insights into how the CRM has brought attention on to the Communications team, causing new expectations to arise within the team. I induce one key concept:

- Leaders perceive new expectations of accountability on the Communications team as a result of the new CRM

41. Tell me about the kind of user support that the CRM provides?

Sociomaterial factor	Key quotes from responses
User support: Identifies weaknesses or strengths of technology provider support systems External-focused, resource-focused	P1: "So they have people you can call…Online documentation…Online community of people you can reach out to…Or I can email a question and people will e-mail back their thoughts or perspective…the Listserv." P2: "It had a direct email to the person, to somebody at the CRM I guess, headquarters and there was never more than twenty-four hour wait for response…Listserv - which is really useful…You could just email that Listserv…The chief executive of the organization was on that Listserv." P3: "During implementation when we had a dedicated account person." P4: "Telephone and online chat -- they weren't in Vancouver. So it wasn't face to face although they did offer their conference. They were quite responsive at least during the transition." P5: "They have like webinars and I feel like they send out a newsletter maybe?...We have a client representative that we can go talk to if we have any challenges…On the phone or by email I guess."

I induce one key concept:

- There are various kinds of user support methods, including an online community and a direct email or telephone contact

42. Is there anything you would change about user support provided to improve it?

Sociomaterial factor	Key quotes from responses
User support: Identifies weaknesses or strengths of technology provider support systems External-focused, resource-focused	P1: "Some of their documentation could be more thorough, I think. And some of it is a little out of date because they've software but they don't always update the stuff really fast." P2: "I would have preferred some more…Official training manuals." P4: "Ideally having somebody local would have been great and to have somebody come in and see people and see a face."

Although improving CRM user support was a key reason why the new system was implemented, the respondents did not have an urgent recommendation for improvement and all have fairly different ideas of how to improve user support. I induce the following concept:

- Improving user support does not seem to be a large issue, but official training documents could be more up to date and face-to-face meetings would be beneficial

43. Has anything you learned from user support changed the way you use the CRM?

Sociomaterial factor	Key quotes from responses
User support: Identifies weaknesses or strengths of technology provider support systems External-focused, resource-focused	P1: "Definitely. I learn stuff from them about how do something better or faster…If I say 'oh this thing not working.' They'll say, 'oh it's because we have a bug.' And then either it will change how I use it because I will stop using that function or because they'll fix it and then I can do a thing." P2: "Yeah."

I induce one key concept from these responses:

- Interactions with user support affects the way users use the CRM

44. Do you the think the CRM provider is a competitive and competent business against the landscape of other CRM providers?

Sociomaterial factor	Key quotes from responses
Technology provider: Identifies the limitations or strengths of the technology provider as a business External-focused, resource-focused	P1: "I think they're getting there, I think they're growing. They definitely have some really big clients but I don't think their name is so well known by people." P2: "Yeah, I think their cost specifically makes them competitive." P3: "Yeah I thought so…They had really good answers to questions that were posed to other companies and providers." P4: "I do. I have three CRMs that I have experience with, at all…This one falls in the middle, price wise…It offers a higher level functionality and better visual presentation and things like the much cheaper alternative that I'm working with now…And overall, people who are professional on time, courteous." P5: "I trust my colleagues who recommended this system over

	others. Given the scope of like concerns and criteria that we had."

I induce one key concept from these responses:

- The CRM provider is a competent and competitive business

45. Would you say that the CRM provider innovates and adapts to meet your organization's or your own needs?

Sociomaterial factor	Key quotes from responses
Technology provider: Identifies the limitations or strengths of the technology provider as a business External-focused, resource-focused	P1: "Always. They are improving a lot." P2: "Yes. I think they were very open to people's suggestions as demonstrated by the Listserv that I was on." P3: "Well part of the reason we picked this particular one was that it is a very fluid and adaptive model…So yeah." P4: "I got the sense that they were sort of cutting edge, changing. They were responsive to Canada." P5: "What I understand is that they are planning to roll out some changes and modifications later this year so I think the fact that they are doing that is really good."

I induce one key concept:

- The CRM provider innovates and adapts to organizational and people's needs

46. Have you encountered any negative opinions about the CRM from other people or organizations?

Sociomaterial factor	Key quotes from responses
Technology provider: Identifies the limitations or strengths of the technology provider as a business External-focused, resource-focused	P1: "No." P2: "From other people within the organization, yes, because it couldn't do…Some of the things that our previous CRM had done which people had grown used to." P3: "No but I also didn't use it for very long." P4: "Well the only negative opinions, really were just sort of 'it's different' than what was there before. And I think a lot of that wasn't necessarily to do with the CRM It was that we made major technological changes and well, some end users had issues with that." P5: "Um no nothing like other organizations…There has been some feedback that like 'oh we should just be on a system that has everything all together.' But like from within our own

	organization.”

I induce two key concepts:

- Staff have not encountered negative opinions about the CRM externally—from people outside the organization
- Staff have encountered negativity towards the CRM from people inside the organization because what it does is new and different

47. What does the CRM do or produce that benefits the organization? Why does the organization need the CRM?

Sociomaterial factor	Key quotes from responses
Strategic purpose: Identifies what “things” are being produced through the technology External-focused, resource-focused	P1: “They provide us with a way of...Engaging with our online community through like, assets that we own...They provide us with a way that we can get people engaged on stuff by donating, by subscribing, by receiving our emails, by taking actions. That we get to craft that experience completely.” P2: “To track our donors interests on a much closer level…Gave us a broader picture of our donor base or our supporter base…Build pages on our website that allowed our donors to have a better user experience than our previous CRM...So people could more easily make certain types of gifts to us…It was just a cleaner, more direct way of making a donation.” P3: “Primarily when contacting donors or supporters that you were able to be able to customize more based on their preferences, and like, they essentially through their activities built their own profile. Which you could use to make decisions about future communication with them.” P4: “It’s also about bringing people into our community whether that's as supporters or donors and provide our message to bring in money and we need the CRM to actually capture people and to be able to speak back to people and to be able to collect donations, to be able to follow up with them.” P5: “We need a way to stay in touch with our supporters. Number one: So they know what we're up to. So they have a way to supports us, so they have a way to engage with our work…Secondary, it's a good way for us to reach new people…And to get more real time data on what people are responding to and how people are behaving online.”

I induce one key concept:

- The CRM is needed to collect donations, engage with online audiences, and craft experiences for them

48. Have you noticed if some of the organization's goals or your own goals are changing because of what the CRM is doing or is producing?

Sociomaterial factor	Key quotes from responses
Strategic purpose: Identifies what "things" are being produced through the technology External-focused, resource-focused	P1: "Yes…We like the advocacy part of it. For making open letters and stuff…We decided to turn on the advocacy component of the CRM…So it was a thing that when we first got the CRM we didn't think necessarily we would do. And now we're going to do it…Fundraising goals changed when we got it…The goals got transferred to our team…In the first few months we had the CRM, we were raising a lot more than we expected. So, it like increased our expectations for the year." P2: "I think our fundraising targets were increased because of the CRM. It just, it professionalized our communications--our e-mail communications." P3: "It changed the way I acted with the people we were leaving." Researcher: "What do you mean by that?" P3: "With Convio. It changed the way I acted with them." Researcher: "With those external stakeholders of the old CRM?" P3: "Yeah." P4: "I think that, again it caused us to ask a lot of questions about yes exactly that, "why do we need this?" What is it supposed to do? So it gave us an opportunity to look at the data that we were recording and capturing…It shifted or forced a conversation about: is the most important thing to get all the information you can about a person, or is the most important thing to make it a really easy user experience for people." P5: "It's definitely informed I think the direction that we want to take communications at Ecojustice, certainly…What is in store for the organization as a whole in the future…Thinking about communications as like this integrated thing as opposed to like a bunch of like disparate streams under one umbrella…We're building out like an online advocacy tool right now."

P3 focused on something entirely different, likely because they had left the organization before seeing results of the CRM, so I will ignore this particular negative case. I induce two key concepts from these responses:

- Fundraising and advocacy goals are changing because of what the CRM enables people to do
- The CRM has been a catalyst for the organization to have conversations about changing communications strategy

49. Has the CRM changed the way you interact with external stakeholders?

Sociomaterial factor	Key quotes from responses
Outcomes: Identifies what social interactions are being produced through the technology External-focused, people-focused	P1: "Our emails get a lot of responses and since we moved to the CRM…The content we send out people want to respond and have questions and stuff so I'll engage with them." Researcher: "So you, actually your job slightly changed? You started responding?" P1: "Yes…We didn't used to do that on our team so much." P2: "I know for our major gift officers, it gave them a huge, new insight into the donors…So yah it deepened relationships with our external stakeholders in that sense." P4: "It might be that we were ready to launch into a different kind of communication with people and this system kinda allowed us to do that…And also the communications team feeling more ownership over it. Feeling like they can actually start engaging with people who have been classified as donors." P5: I think it could…I can see--I anticipate where it would be as we continue forward."

Responses are varied, as each staff member has a unique perspective or experience with how they interact with stakeholders. I induce two key concepts from these responses:

- The CRM has been a catalyst to deepen relationships with external stakeholders
- The CRM has been a catalyst to for communications staff to begin engaging directly external stakeholders

50. Since implementation, do you think new kinds of "things" are being produced from the CRM?

Sociomaterial factor	Key quotes from responses
Outcomes: Identifies what social interactions	P1: "Not really." P2: "It created new reports on donors' interests based off of what emails were being read and opened."

are being produced through the technology External-focused, people-focused	P3: “I think that open letters were a new thing…And I know that they're scoping a peer to peer function.” P4: “We did one open letter…Integrating video into our email campaign…A better welcome series for sure. Better e-receipting.” P5: “We're really leaning towards deeper community engagement…Essentially we're assigning an online advocacy tool that's like an e-mail to target tool, that will allow us to run like petitions and open letters and send in responses to comment periods and all of those things.”

It’s interesting that P1 did not engage with this question as they had mentioned before that advocacy tools and open letters were being produced with the CRM, but other participants focused on the open letters for engaging with audiences, so I induce one key concept from these responses:

- The CRM enables staff to produce new things such as open letters and reports to deepen engagement with stakeholders

51. Do you think the new CRM makes your organization more competitive?

Sociomaterial factor	Key quotes from responses
Competition: Identifies pressure to remain competitive with other organizations External-focused, people-focused	P1: “Yes…I think the stuff is more engaging. It looks better. It works better…And is on brand and fits with the rest of what we're doing. “ P2: “Yes.” P3: “Yep.” P4: “I think investing in being digitally forward thinking makes the organization competitive…Obviously to reducing costs makes the organization more competitive.” P5: Yes…We, I think deliver a much more professional and compelling customer experience. All of that is good in terms of positioning us against, I guess like our peers and environmental sector.”

I induce one key concept:

- The CRM makes the organization more competitive by producing a better digital customer experience

52. Are you proud to use the CRM? Do you ever talk about it with non-coworkers or people from other organizations?

Sociomaterial factor	Key quotes from responses
Competition: Identifies pressure to remain competitive with other organizations External-focused, people-focused	P1: "I do. Yeah…If I'm talking to people who work in the same field we're talking about what databases and tools we use. I'll tell them about it, and about it's strengths and weaknesses and how it works for us." P2: "I might have mentioned the types of CRM we were using, but not, I would say, proud." P3: "Yes, yes and yes. I'm proud that I was able to figure something out and problem solve and think critically and adapt and learn. And that going to the prospect of doing this again, I feel like I have, you know, a good knowledge." P4: "I did! Yes. I was really proud from a personal level…I think that we did a really rigorous job…Finding something that was going to work right and really taking it seriously in terms of migrating the data and all that…I was really proud of the aesthetic at the end and how people handled the transition even when there were rough spots. It wasn't necessarily super easy but I'm very proud of what the outcome looks like." P5: "I think what I'm proud of is the fact that we...that the nut got cracked and we changed systems…I think I'm proud of that we were able to make the transition."

P2 does not show pride as other respondents do, but this is a fairly personal question. It is interesting that most participants focused on being proud of changing the system—the implementation process—as opposed to continuing to use the system and produce new things to reach new goals. After all, the question posed asks if people are proud to use it, but the respondents avoided talking about use, and instead focused on implementation. I induce one key concept:

- Staff are proud of being part of and learning from the process of implementing the CRM system, less so about continued use

53. Since the implementation of the CRM, have you noticed a difference in what the public expects from the organization?

Sociomaterial factor	Key quotes from responses
Expectations: Identifies pressures to produce both tangible and social artifacts External-focused, people-focused	P1: "Yeah their expectations changed…We get feedback from people, like, 'ooh your emails these days are like asking me too much to do things on Twitter. I don't have a Twitter'… And so maybe they expected us to be less technologically progressive than we are…And people need to get used to the fact that we're a twenty first century Ecojustice." P2: "Yah, we did actually have a few comments on the quality of our emails…The way the system had kind of had professionalized those types of emails." P3: "Yeah. I think people were relieved to see that you know, Ecojustice was going to get more technologically with the times…And now at least it's on par with the majority of the competition." P4: "The feedback was all very positive…Anyone that I've shown that to has been really, really positive. People want to emulate it." P5: "I think we're seeing deeper like engagement with people…I think what we're seeing is like, there's a lot more two-way communication."

I induce two key concepts:

- People are supplying feedback and communicating with Ecojustice about the quality of communications since the CRM was implemented

54. Has the CRM raised any issues of privacy or security with stakeholders?

Sociomaterial factor	Key quotes from responses
Expectations: Identifies pressures to produce both tangible and social artifacts External-focused, people-focused	P1: "No…I didn't really hear any from anyone." P2: "No, no. Surprisingly not." P3: "We were very, very diligent about mitigating any of that." P4: "I think that we did due diligence around data security and around explaining to people where their data is housed." P5: "Not that I have heard."

I induce one key concept from these responses:

- Staff were diligent about mitigating privacy concerns surrounding data housing during implementation and the result is that there are no direct privacy concerns being raised by stakeholders

Categorical themes: Meta-sociomaterial factors. After the iterative process of reducing and coding is complete, the inductive process of data analysis calls for a final reduction of findings—to look for overarching categories or themes that connect various concepts together (Kolb, 2012, p.84). I return to my guiding research question for this step: What are the most significant sociomaterial factors that influence an environmental charitable organization to adopt and use a new communications technology?

The following meta-sociomaterial factors are what I induce as the most significant based upon participants' responses and my own interpretations. These meta-factors are built on the foundation of multiple sociomaterial factors I used to develop my interviews questions as well as the concepts I induced from the data. I identify three factors of positive significance that are influencing Ecojustice to continue using its new CRM: Empowering collaboration, improving strategy, and building relationships. I used gerunds in naming these meta-sociomaterial categories I derived, for "adopting gerunds fosters theoretical sensitivity because these words nudge us out of static topics and into enacted processes" (Charmaz, 2014, p. 245). Furthermore, "gerunds prompt thinking about actions…a key strategy in constructing theory" (Charmaz, 2014, p. 245).

Empowering collaboration. Fifteen of my guiding interview questions were developed to explore internal-focused, people-focused sociomaterial factors of users, community, power, performance, learning style, leadership and behaviour. I combine the following concepts derived

from the responses to these fifteen questions to create an overarching meta-factor or theme: empowering collaboration.

- Q15's induced concept: Lack of trust does not hinder others from asking the current Communication user for guidance any longer
- Q16's induced concept: Learning from other users within the organization is useful and has been done, but there should be caution about learning unofficial information that lacks best practice
- Q16's induced concept: Learning from other users outside the organization could be valuable
- Q17's induced concept: There were two early adopters of the CRM and they both left, but there is a current user who continues to carry it forward
- Q18's induced concept: The current user feels empowered to make decisions, unlike departed staff
- Q19's induced concept: The structure of users is changing as the CRM continues to be used
- Q19's induced concept: Leaders perceive new expectations of accountability on the Communications team as a result of the new CRM
- Q22's induced concept: The two remaining staff consider themselves tech-savvy
- Q29's induced concept: The new leader is involved differently with the CRM, being less focused on budget, privacy, and staffing and more focused on team strategy
- Q30's induced concept: Leadership trusts users to come to them if problems arise and leaders can help solve problems or supply resources

- Q31's induced concept: Leaders should understand how a CRM affects a user's work to make sure the appropriate resources and support systems are available
- Q35's induced concept: The CRM may enable staff to exceed expectations, especially the expectations on the Communications team as a whole
- Q36's induced concept: The experience of switching to a new CRM and learning about it is beneficial to all staff and their work experience, including users and leaders
- Q37's induced concept: The CRM implementation process in particular, united some staff across teams
- Q37's induced concept: The new leader sees the CRM as an incentive to bring people together to try new ideas
- Q28's induced concept: There is some group learning that continues with the primary user
- Q39's induced concept: The new leader sees the CRM as an incentive for collaboration

These concepts support the idea that the new CRM is a positive catalyst for empowering collaboration. The concepts above highlight that change is happening: users are feeling empowered, tech-savvy, and united with their leader to try new things, make decisions, build trust, and get support. Group learning and team accountability is increasing and perceived as beneficial and, therefore, it is likely that staff will continue to embrace the CRM.

Improving strategy. Questions 45, 47 and 48 explored external-focused, resource-focused sociomaterial factors of technology provider and strategic purpose. I combine the following concepts derived from the responses to induce an overarching meta-factor: improving strategy.

- Q45's induced concept: The CRM provider innovates and adapts to organizational and people's needs

- Q47's induced concept: The CRM is needed to collect donations, engage with online audiences, and craft experiences for them
- Q48's induced concept: The CRM has been a catalyst for the organization to have conversations about changing communications strategy
- Q48's induced concept: Fundraising and advocacy goals are changing because of what the CRM enables people to do

These concepts support the idea that the new CRM is a catalyst for improving strategy to meet new goals because it is adaptable and provides necessary tools for Ecojustice.

Building relationships. Guiding interview questions 49-51 and 53 were developed to explore external-focused, people-focused sociomaterial factors of outcomes, expectations, and competition. I combine the following concepts derived from the responses to these questions to create an overarching meta-factor: building relationships.

- Q49's induced concept: The CRM has been a catalyst to deepen relationships with external stakeholders
- Q49's induced concept: The CRM has been a catalyst to for communications staff to begin engaging directly external stakeholders
- Q50's induced concept: The CRM enables staff to produce new things such as open letters and reports to deepen engagement with stakeholders
- Q51's induced concept: The CRM makes the organization more competitive by producing a better digital customer experience
- Q53's induced concept: People are supplying feedback and communicating with Ecojustice about the quality of communications since the CRM was implemented

These concepts support the idea that the new CRM is a catalyst for building relationships: The organization is improving the digital customer experience and creating new ways to engage and communicate with stakeholders and, therefore, the CRM has value and will likely continue to be used.

Non-influential sociomaterial factors and negative influences. I have identified internal-focused/people-focused external-focused/people-focused, and external focused/resource-focused factors as particularly significant to the CRM's continued use. Interestingly, however, I did not perceive as many internal-focused/resource-focused sociomaterial factors explored in interview questions 1-14 to be of particular influence in this study, other than of slight negative influence.

I believe that internal-facing, resource factors of materiality were more significant at influencing the organization's original choice of implementation—deciding on what CRM to implement and when. For example, many of the original reasons for choosing to on-board the CRM at Ecojustice were resource-focused criteria, including, cost, syncing ability with the existing CRM, training, timeline, and the ability to create mobile responsive templates. Thus, internal-facing factors of materiality were significant factors in the implementation process, not necessarily in continuing use.

Furthermore, interview questions 1-14 exploring internal-facing, resource factors gained mostly "matter of fact" style answers from respondents. For example, question 8D identified that many staff—mainly lawyers—are competitive people. Question 14 identified that the CRM training is adequate, and questions 12 and 13 identified that most respondents felt they had observed the CRM in use long enough to comment on its strengths and weaknesses. All of these

answers highlight the basic situation of the organization, post-implementation, but do not give compelling reasons to understand what may bolster continued use of the new CRM in future.

Negative influences and change. There were a few exceptions, however, to this phenomenon of internal-facing, resource factors not being of significant influence in continuing use. For example, responses to questions 4 and 9 provided insight into some problems that may hold the organization back from embracing the CRM—factors such as staffing shortages and budget limitations. But, even when these problems were alluded to by some respondents, the new Communications leader (P5) and the current user (P1)—the two current staff—gave responses suggesting that these influences of materiality may be becoming irrelevant as their plans change to hire more staff and shift budget allocation. For example, most respondents stated that there were not enough staff members who knew how to use the CRM, but P5 answered:

> On the communication team right now we have a couple openings and people will be joining our team as the year progresses. So as new communications associates join they'll be trained on how to like build it on their own and understand sort of the basics…I think as more people come on that'll change and it will be one of the things I think we'll have to reassess too.

Or, when asked if they thought they were limited by a budget to get training or add extra features to the CRM, most respondents said they have been, but P1 stated:

> My perception is that in the last few months, I think the new director on our team is... feels like there's more wiggle room in the budget or maybe is making cuts in other areas that don't affect my work is as directly…We received a certain budget to spend along with the responsibilities of raising a certain amount money so that money does exist in our budget now. And it had been budgeted for things by the fundraising team but we reallocated it to things we think are priorities so I think that definitely helped.

So, although staffing and budget constraints could continue to hinder use of the CRM, and most ex-staff noted that these were valid limitations of materiality, the current staff are organizing around the CRM to create change and mitigate these hindrances. This shift in planning around the CRM is further highlighted in the following concepts pulled from the data:

- Q4's induced concept - There needs to be more "full picture" primary users who know how to use the CRM well and maintain best practices
- Q4's induced concept - There are not enough users of the CRM, although the current leader of the Communications team sees this changing with new hires
- Q9's induced concept - There is only one current, primary user with integrated knowledge of the CRM

Discussion: Theorizing and Recontextualization

The final steps in the inductive process of data analysis are to theorize and recontextualize upon the findings (Mayan, 2009, p. 87). Theorizing is the process of interpreting broad themes to make generalizations—a grounded theory. Recontextualization is the process of returning to literature to explain study findings as bringing new insights or supporting existing ideas.

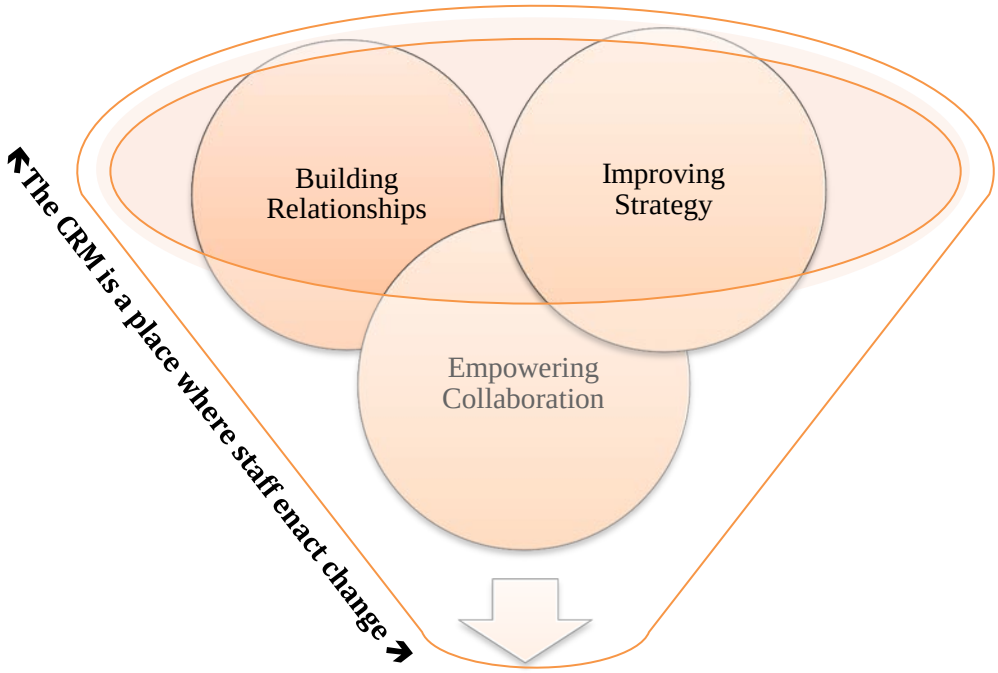
Theorizing. "The hallmark of grounded theory studies consists of the researcher deriving his or her analytic categories directly from the data" (Charmaz, 1996, p.32). So, how do the three meta-sociomaterial factors I have induced from the data—empowering collaboration, improving strategy, and building relationships—connect together to be theorized upon? What is the relationship between these concepts to explain the phenomenon explored in this case study?

Meta-sociomaterial change processes. The three meta-sociomaterial factors I identified from the data are the result of an organization being deeply immersed in change. Naming these

factors with gerunds shows that they are in a state of flux and the factors have not lost significance—they are being acted upon (Charmaz, 2014, p. 245). As illustrated in Figure 1, my theory is this: active change processes constituted of meta-sociomaterial factors positively influence the continuing use of the new CRM in this case study. If more collaboration happens, new ideas to improve strategy are heard, and relationships continue to be strengthened and built, the organization will put more resources into supporting staff to use the CRM, and more staff will want to organize around the CRM because it will be perceived as successful.

Figure 1.

Meta-sociomaterial change processes are the catalyst for CRM continued use



The inter-activity surrounding the decision to implement the new CRM, the massive project of launching it, the departures of staff, and the conversations spawned from observing outcomes of use, have all set the stage for more change to happen and influence continuing use

and upgrading of the CRM. The new CRM “unlocked” the organization into entering an era of change where staff study their actions and strategy with criticality. Essentially, the new CRM serves as a “place” or “event” where staff can congregate to organize their actions, ideas, and relationships.

A new receptiveness to change can be seen in some of the responses of the two current staff, P1 and P5. For example, when P1, the primary user, was asked if they thought a different CRM should have been decided upon to implement, P1’s response acknowledged that more change may need to happen surrounding the CRM:

> We're really now maintaining two sets of data…And also I think at the time the decision was made, the people making the decision…I don't think was particularly believing in a vision where we would be into a super integrated set of communications and fundraising. But I actually think in the next couple of years, we're probably going to go more and more in that direction…So I think at some point we might need to make another shift where we can be doing that all integrated.

P5, the current communications leader echoes this possibility of more change in response to the same question:

> I think you don't understand what is perfect or what you need until you are on a system and you're using it and you start to see like where blind spots are opening up and that sort of thing…So I look at this as it's like an evolution right?...And I'm sure that in two years we're going to be in a place where…we're feeling like there are some limitations and either this system is going to have new tools… Like it's going to have the tools that are going to address that. Or won't.

These responses show that although there is a new tool in place with staff to use it, the CRM must adapt with the evolving needs of the organization.

Recontextualization. How does my grounded theory support existing ideas or bring new insights to the literature? I return to the ideas of sociomateriality as presented by Leonardi and Barley (2008), Orlikowski (1992, 2000, 2002, 2007), and Orlikowski and Scott (2015), to discuss my research claims as supporting the emerging paradigm of exploring technology through the lens of sociomateriality.

Balancing materiality and sociality. I have consistently stated that sociomateriality is the concept that guides my research question and my approach to interpretation. Sociomateriality posits that materiality is of equal importance as sociality when discussing technology adoption, for materiality is a firm part of organizational practice (Orlikowski, 2007; Leonardi & Barley, 2008). For my data collection and analysis I wanted to explore an equal balance of how social and material factors may be creating change at an organization with my interview questions for:

> Even the most influential studies of organizations and information systems focus on social dynamics or how people interact with each other around the technology, rather than providing evidence of what specific material features people use, why they use them, and how and why their specific patterns of use shift over time (Leonardi and Barley, 2008, p. 163).

Certainly, when interviewing staff about their perceptions of a new communications technology, the conversation would often veer towards social dynamics—sociality—at-play within an organization, but I believe that my interview questions aimed to retain focus on aspects of materiality as well—budget, staffing, goals, expectations, and technology functionality (Leonardi and Barley, 2008, p.159). I asked questions about how people use the new CRM, what

it produces for them, what resource limitations they perceive, and how the artifacts it produces may cause expectations on users to shift with time.

The materialization of discourse shapes sociomaterial factors. My grounded theory supports the ideas raised in the literature, in that sociomaterial factors are not stable phenomena: They are in a constant state of flux from being entwined with human workplace performance, so it is important to look for how the factors influence people to constitute—form or change—their decision-making and behavior (Orlikowski & Scott, 2015).

The three significant meta-factors I identified in my study represent both social and material dynamics. Empowering collaboration and relationship building are about how people organize around technologies to interact. Improving strategy is more about material, resource-based concepts such as developing goals based on technology adaptation—what a technology enables people to produce. Where materiality and sociality converge is in the materialization of discourse that stimulates action and change to take place (Orlikowski & Scott, 2015). Posit Orlikowski and Scott (2015):

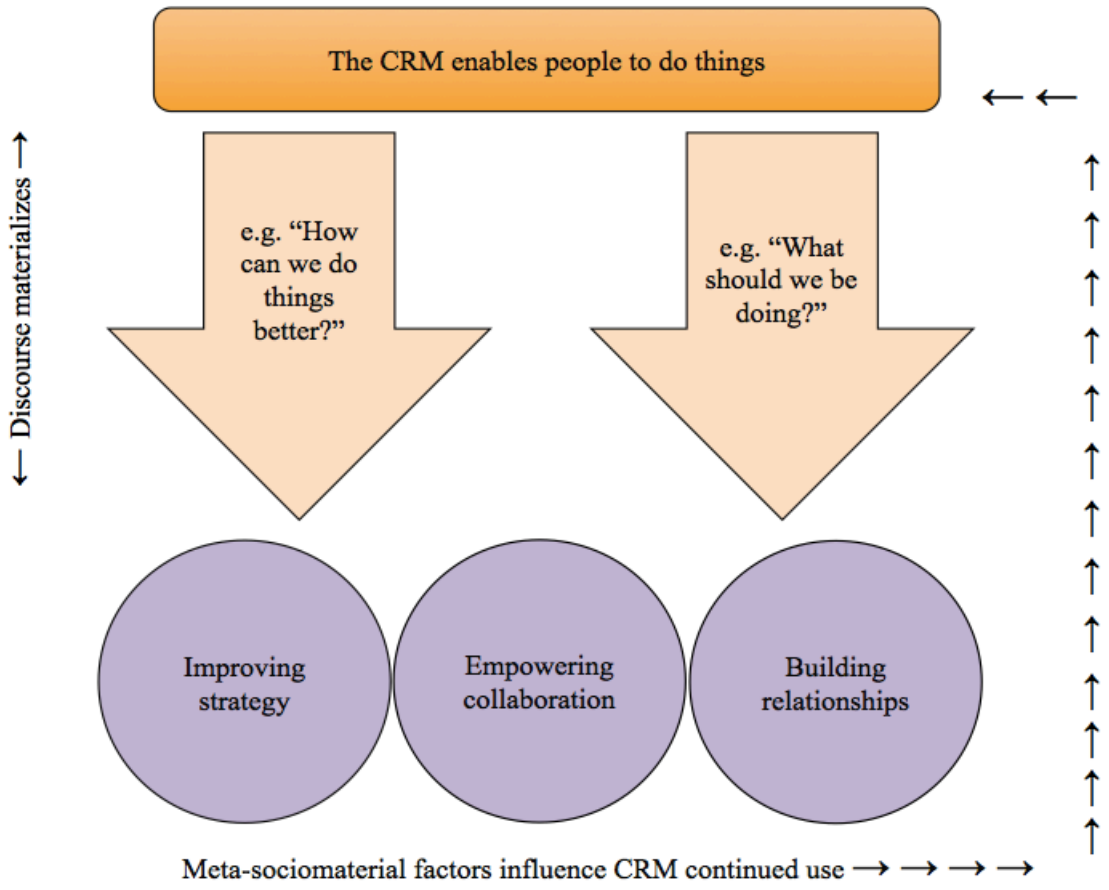
> We view materiality as constitutively entangled with discourse in practice, not separate from, prior to, or distinct from discourse and practice. The implication of this for management and organizational research is that instead of framing our studies in terms of interaction – how two separate entities shape each other – we focus on (material) enactment and concern ourselves with detailing how specific materializations of discourse make a difference in practice, and with what performative consequences (p. 703).

I extrapolate upon this idea presented by Orlikowski and Scott (2015) in Figure 2. Essentially, what the new CRM “does” has caused new discourse to materialize at Ecojustice, and is

changing how people act and react—how they "perform." Even this study itself is an example of a discourse, initiated by myself, which materialized in reaction to the new CRM. Thus, the CRM as a new "thing" has opened Ecojustice to having new conversations and debates—discourse—about what people do with the CRM and what material "things" are produced with the CRM. This discourse then shapes sociomaterial factors of influence to emerge, such as the meta-factors I identified in this study: empowering change, building relationships, and improving strategy. These meta-factors then influence people's continuing use of the CRM.

Figure 2.

Discourse materialization shapes sociomaterial factors and CRM use



Limitations

The findings from this study are limited to providing insights into a particular organization, at a particular point in time, while looking at a specific communications technology being adopted. I provide rich insight about this specific case study: the findings are based heavily in my own subjective interpretation as an ex-employee who had a working relationship with all participants, as well as being based objectively in the data collected. The theory I induce in this study reflects a level of plausible, provisional, theoretical generalization that could perhaps be compared to or tested by other, similar case studies that explore sociomaterial factors in technology acceptance at a workplace. Insights generated by a case study design such as this, allow for theoretical generalization, and could be applied to other case studies taking place at different organizational settings to help inform evolving theory about sociomateriality, technology and organizing (Yin, 1981).

Summary

In this chapter I have systematically presented the logistics of my interviews, a presentation and analysis of my data collected, a final reduction of my findings to answer my guiding research question, an explanation of the grounded theory I induced, and a discussion of how my research supports current approaches to studying technology and organizing through the lens of sociomateriality. My guiding research question remained top-of-mind while analyzing, synthesizing, and theorizing upon the findings:

- What are the most significant sociomaterial factors that influence an environmental charitable organization to adopt and use a new communications technology?

Through constant and iterative reduction, comparison, and analysis of the data collected from my interviews with Ecojustice staff, I was able to induce primary, unifying concepts from

responses to each interview question. I then reduced the concepts further by combining the most relevant into meta-sociomaterial factors of:

- Empowering collaboration
- Building relationships
- Improving strategy

These meta-sociomaterial factors represent the most significant factors that were influencing Ecojustice to continue using its new CRM at the time of this case study. These factors can be extrapolated further to develop my grounded theory:

- Active change processes constituted of meta-sociomaterial factors positively influence the continuing use of the new CRM in this case study.

Finally, I recontextualized my interpretations of the data by returning to the literature, to theorize that influential sociomaterial factors are formed by the discourse that surrounds a new technology. I will provide a high-level summary of all insights gleaned from this research as well as any future recommendations for continued research in the following Conclusion chapter.

Conclusion

Context of this Research Study

Non-profit organizations work to protect human and animal rights, the natural environment, as well as enhancing our access to the arts, culture, sports, and social welfare programs. Yet non-profits often find themselves operating against competitive, demanding economic landscapes while lacking human, financial, and technical resources (Hackler & Saxton, 2006). For these reasons, I believe it is important to explore how new information and communications technologies can help support and promote the work of non-profits. After spending time working at a Canadian environmental non-profit organization, I came to not only appreciate the work the organization did for the environment and people's health, but also recognize the struggle that the organization had with technology innovation. Therefore, I conducted this exploratory case study to gain insight into what human-related or resource-related influences were the most influential at helping digital innovation happen at a non-profit workplace.

Before embarking into my qualitative research design, I began this study with a survey of existing academic literature that I considered pertinent to my subject. For this project, I paid particular attention to the works of noted MIT scholar, Wanda Orlikowski (1992, 2000, 2002, 2007) and her insights regarding sociomateriality—the idea that research focused on technology and organizing must equally regard both the social and human factors as well as the more concrete, material aspects of workplace technology use. Also, I paid particular attention to the concept of using material-discursive practice as an approach to analysing research as discussed by Orlikowski and Scott (2015).

From my academic literature survey, I found a number of calls for more research studies concerning technology to be conducted, specifically at non-profit organizations (Burt & Taylor, 2003; Humphrey et al., Kim, & Dudley, 2004; Alshammari et al., 2014; Ihm, 2015; Raman, 2015). With this purpose in mind, I began my research to explore the sociomaterial factors at-play in the continuing use of a recently-implemented constituent relationship management (CRM) platform at the Canadian environmental law charity, Ecojustice. To maintain focus on my subject and guide my methodological approach, I developed the following research question:

- What are the most significant sociomaterial factors influencing the adoption and continued use of a new communications technology at a Canadian environmental non-profit organization?

Answering the Research Question

To induce a grounded theory to help answer my research question, I embarked upon an exploratory case study using a series of qualitative, one-on-one, semi-structured interviews with five staff and ex-staff members of my ex-workplace in March of 2016. I purposively selected five participants who knew the most about the new technology and used a series of guiding interview questions about sociomaterial concepts to stay focused on my research question. After transcribing the recorded interviews, I used constant comparison to analyze the content, first reducing the data into core concepts and then inducing the three following meta-sociomaterial factors of influence from the concepts:

- Empowering collaboration – Current users are feeling empowered, tech-savvy, and united with their leader to try new things, make decisions, build trust, and get support. Group learning and team accountability are both increasing and perceived as beneficial; therefore, it is likely that staff will continue to embrace the CRM.

- Building relationships - The organization is improving the digital customer experience and creating new ways to engage and communicate with stakeholders; therefore, the CRM has value and will likely continue to be used.
- Improving strategy - The new CRM is a catalyst for improving strategy to meet new goals because it is adaptable and provides valuable tools for Ecojustice.

These three meta-sociomaterial factors represent the most significant factors that were influencing Ecojustice to continue using its new CRM at the time of this case study; thus, my guiding research question was answered. Furthermore, I interpreted these meta-sociomaterial factors as change processes that were being enacted by staff to bolster continuing use of the new technology to induce my grounded theory:

- Active change processes constituted of meta-sociomaterial factors positively influence the continuing use of the new CRM in this case study.

Situating Research in the Literature

After identifying the significant meta-sociomaterial factors as influential change processes, I returned to the literature to revisit the idea of material-discursive practice (Orlikowski & Scott, 2015). This practice lens can help pinpoint important moments of interest by asking critical questions to guide further theory development, including:

- What discursive materializations are manifesting in reality at particular places and times?
- How are discursive materializations performing and stimulating situational results?

The data presented me with various “discursive materializations” of interest, as current staff spoke of new conversations inspired by what the CRM was enabling them to do. For example,

staff talked about having conversations and taking action to change their communications strategy (improving strategy), online stakeholder engagement activities (building relationships), and collaboration methods (empowering collaboration). Thus, my findings support ideas of material-discursive practise, in that the introduction of a new technology has caused new discourse to materialize at Ecojustice. It can be theorized that this new discourse stimulates meta-sociomaterial factors to influence CRM use. So, as technology use continues, more discourse emerges about how to use it, and the meta-sociomaterial factors persist in being influential; thus, discourse and sociomateriality are interconnected in a positive feedback cycle:

- Discourse materialization stimulates active change processes constituted of meta-sociomaterial factors to positively influence the continuing use of the new CRM.

An Alternative Perspective. Communities of Practice (Wenger, 1998) could also be a helpful lens through which to interpret the data collected in this study, for this theory helps to connect workplace practice (task execution), community, identity, and meaning to help a researcher identify social and material factors as entangled—constructing and influencing each other (Wenger, 1998). The "community" serves as a "place" where social happenings and human performance occurs, so the CRM in this study would be the place in which learning, task execution, and communication activities happen. In turn, these activities influence people to find meaning and identity. Essentially, people must have some sort of material framework in which to practice social interaction, and technology can enable this interaction (Wegner, White and Smith, 2009).

Recommendations and Contribution to the Field

After a few years, it would be interesting to revisit this case study's setting, to see if the specific CRM in question is still in use. Also, it would be interesting to explore the three meta-

sociomaterial factors identified in this study, to see if they continue to be of influence, or if they were completely limited to the unique situation perceived by the respondents of this study and my own interpretations. The concepts of sociomateriality and material-discursive practice were useful as theoretical lenses for this research and I would recommend that more qualitative studies of technology and organizing be conducted using these guiding concepts.

If I continued conducting research regarding workplace technology, I would delve deeper into understanding material-discursive practice. Specifically, I believe it would be beneficial to explore the work of the American feminist theorist, Karen Michelle Barad and her interpretations of material-discursive practice. Also, the Danish Mattering: Centre for Discourse and Practice (http://www.communication.aau.dk/research/knowledge_groups/mattering) knowledge group could be a significant resource for finding new ideas about material-discursive practice and research.

My findings in this study represent plausible and likely interpretations of the data, and are by no means single, definitive truths that can be generalized across organizations (Merrigan et al., 2012). I induced concepts from the data to build a grounded theory about my research subject within the limitations this singular, case-study setting. I aimed to achieve a level of plausible, provisional, theoretical generalization that could also be applied to or tested by other, similar case studies that explore sociomateriality and workplace technology adoption (De Vaus, 2003). Essentially, my final, overarching interpretations of the data and grounded theory may be disproven or disagreed with in future work, but they are governed and accountable to the guidelines of my research design.

In summary, to answer to my guiding research question, I identified the three meta-sociomaterial factors of empowering collaboration, building relationships, and improving

strategy as the most significant factors that were influencing Ecojustice to use its new CRM at the time of this case study. For my grounded theory, I induced that active change processes constituted of these three meta-sociomaterial factors positively influence the continuing use of technology. I believe my research findings may not only provide interesting insights for Ecojustice to review, but also for other non-profit organizations to discover as they consider adopting new information communications technologies. Furthermore, I believe the findings from my project may contribute to the continuum of qualitative, academic research concerning workplace technology and organizing.

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Appendix A

Changes in Research Discovery Themes as Web 2.0 Technologies Emerge

Legend:
Studies that focus on perceptions and influences
Studies that focus on resource limitations
Studies that focus on how ICTs can be used strategically
Studies that focus on the value of measuring success

Author(s) and publication date	**Research discovery**	**Factors that inhibit technology use**	**Factors that stimulate technology use**	**Type of research & theoretical lens**
Web 1.0				
Tyre & Orlikowski, 1994	IT innovation at organizations is discontinuous and interruptive, with small windows of opportunity for staff to learn or modify their behaviour	Negative user perceptions and inappropriate timelines of technology adoption	Positive user attitudes and appropriate timelines of technology adoption	Longitudinal study of three for-profit organizations
Karahanna, Straub, & Chervany, 1999	Early adopters decide to use technology based on perceptions: Perceived ease of use, usefulness, track record, and trial-ability. Late adopters use technology for upward mobility	Negative user perceptions	Positive user perceptions and track record of technology	Field study at a for-profit firm. Diffusion of innovations theory
Venkatesh & Davis, 2000	Perceived ease of use and usefulness are key determinants of early adoption	Negative user perceptions	Positive user perceptions	Questionnaires at a for-profit firm
Gomes & Knowles, 2001	Websites are important but cost-prohibitive	Staff and financial resources are lacking	Lower costs, more skilled staff	Literature scan
Web 2.0 technology emerges				

Humphrey, Kim, & Dudley, 2004	Technology use increases if funding is directed to purchase and implement technology	Lack of funding	Directed funding	Survey of 200 organizations
Boudreau & Robey, 2005	User perceptions about a new technology are affected by the institutional setting, staff opinion, and learning setting	Ineffective learning environments and opinions of others	Create effective workplace learning environments	Longitudinal field study
Katila & Shane, 2005	Lack of resources and competition breed innovation and production	High resources and low competition	Low resources and high competition	Longitudinal scan
Web 2.0 flourishes				
Saxton, Guo, & Brown, 2007	Identify a promising trend towards strategic use of technology for engagement and dialogue, but lacking resources inhibit this innovation	Lack of funding and resources	Shift resources towards strategic use of technology: engage with stakeholders in dialogic interactions	Content analysis of multiple websites
Tallon & Kraemer, 2007	Leaders' perceptions about technology are important and reflect reality	Not paying attention to leaders' opinions	Engaging leadership in technology decisions	Surveys. Sense-making theory
Pope, Isely, & Asamoa-Tutu, 2009	Non-profits value technology for mostly administrative tasks such as ecommerce and pushing out one-way communications	Concerns about online security. Only seeing administrative value of technology	More online security. Identifying strategic value	Interviews and surveys
Jaskyte, 2011	Leadership and choices in staffing structure	Leadership style and staffing resources affect	Hire staff and leaders who value technology	Surveys. Structural process theory

	affect rates of technological innovation	whether or not technology is valued or not		
Zorn, Flanagin, & Devorah Shohoam, 2011	Users adopt ICTs if there are competitive external influences and decisions are autonomous	Lack of autonomy and lack of competition	Allow for autonomous decision-making and highlight external competition	
Bingley & Burgess, 2012	Users accept a technology if it is suggested by authority and if they perceive it as useful, trial-able, and easy to use	User perceptions	Leaders (authority figures) should be involved in technology choices	Surveys and interviews. Decision process theory
Jaskyte, 2012	Non-profits value technology for mostly administrative tasks	Only seeing administrative value of technology	Identify strategic value of technology	Analysis of technology innovation awards applications
Panagiotopoulos, Al-Debei, Fitzgerald, & Elliman, 2012	Online engagement activities will not be effective unless they are created with the measurable goals and the values of the organization	Lacking ways to measure engagement. Lacking ways to systematize values-based decision-making	Must understand how to measure engagement and apply technology through values-based decisions	Interviews. Business model application
Sun, H., 2012	People are less likely to adapt their existing behaviour with technology if authority suggests it	Leadership can inhibit adaptation and learning if too authoritative	Let users learn and adapt at their own pace	Surveys. Cognition change model
Dumont, 2013	Leadership is beginning to see strategic value of technology for communicating transparency and accountability	Only seeing administrative value of technology	Leaders' perceptions of strategic value	Interviews & website scans

Sun, Y. & Jeyaraj, 2013	Aptitude for technology and ability to observe a new technology influences early adoption	Lacking aptitude for technology and lacking observation	Make new technology observable	Surveys at a for-profit firm. Diffusions of innovations theory
Waters & Feneley, 2013	Websites, more often than social networks, are used for engaging with stakeholders in acts of stewardship	Lack of security or social networks, user preferences and perceptions surrounding social media	Building user knowledge about social media	Analysis of social networks and websites. Stewardship model applied
Sun, H., 2013	User perceptions determine effectiveness of technology adoption and continued use	User perceptions (imitation, herd behaviour, long-term commitment)	Building positive user perceptions and appropriate timelines for technology implementation	Longitudinal, experimental design. Cognition change model
Alshammari, Rasli, Alnajem, & Arshad, 2014	Suggests that innovation should be measured as an indicator of performance at non-profits	Knowing how to measure innovation as an indicator of performance	Develop ways to measure innovation	Surveys
Uzunoğlu & Misci Kip, 2014	Dialogic and interactive features of websites are extremely under-utilized.	Lacking ways to measure return on investment on strategic, dialogic use of technology	Identify ways to measure engagement	Analysis of multiple websites
Al-ghamdi & Al-ghamdi, 2015	Organizations can use Web 2.0 technologies for building internal efficiency, including learning and cooperation	Knowing how to implement Web 2.0 technologies for internal efficiency for maximum employee receptiveness	Devise ways to engage staff with Web 2.0 technologies	Communities of Practice theory applied to previous field studies
Fagan, Khan, & Buck, 2015	Pre-conceived user perceptions rule decision-making, especially	Pre-conceived user opinions about technology providers	Be aware of user perceptions during decision-making processes	Survey. Communication-Human Information Processing model

	cynicism towards technology providers			& Affect-Reason-Involvement model
Goldkind, 2015	Leaders see value in social media for building their personal relationships, but not as a tool for organizational success	Knowing how to measure social media efforts and prove return on investment	Develop measurement criteria	Interviews
Ihm, 2015	Offers a new way of measuring engagement (dialogue) on social networking sites to validate strategic value	Knowing how to measure engagement on social networking sites and track return on investment	Knowing how to measure engagement and track return on investment	Scans Twitter sites for engagement
Kania-Lundholm & Torres, 2015	People actively choose to self-identify themselves as various types of technology users	Users will construct their own identity as a technology user to resist or adopt technology	Overcome the construction of user identities and potential resistance	Interviews. Positioning theory
Raman, 2015	Social media, analytics and cloud computing benefit non-profits	Knowing how to measure and use analytics	Knowing how to measure and use analytics	Mixed methods, diffusion of innovations theory

Appendix B

Interview Matrix

Participant details legend:
2. Grey = CRM user vs. non-user
4. Blue = Employed by Ecojustice at time of interview vs. ex-staff
3. Green = Involved in implementation decision vs. not involved
5. Teal = Philanthropy team member, or fundraiser vs. communications team member
6. Red = Leadership position vs. non-leadership position

Question details legend:
Olive = Answers skipped that are unique to one participant
Yellow = Common answers skipped by two out of three participants
Purple = Common answers skipped by all three participants

Participant Details	**Date and Time**	**Location**	**Length of Interview**	**Question Details**
1.Participant #1 (**P1**) 3.Primary user 3. Not involved in implementation decision 4.Current staff 5.Communications team 6.Non-leaderhsip position	April 7 4pm	Ecojustice office	49 minutes	• 54 planned research questions asked and answered
1.Participant #2 (**P2**) 2.User 3.Involved in implementation decision 4.Ex-staff of 1 month 5.Philanthropy team 6.Non-leadership position	March 30 6pm	Researcher's apartment	40 minutes	• 54 planned research questions asked and answered
1.Participant #3 (**P3**) 2.Non-user 3.Involved in implementation decision 4.Ex-staff of 4 months 5.Philanthropy team 6.Non-leadership position	April 9 7pm	Participant's house	45 minutes	• 40 planned research questions asked • 14 were skipped: 2, 15, 26, 27, 28, 32, 33, 34, 35, 39, 40, 42, 43,49
1.Participant #4 (**P4**)	April 1	Participant's	50 minutes	• 40 planned

2.Non-user 3.Involved in implementation decision 4.Ex-staff of 3 months 5.Communications team 6. Leadership Position	5pm	house		research questions asked • 14 were skipped: 5, 6, 11, 12, 16, 18, 19, 20, 26, 27, 32, 33, 34, 43
1.Participant #5 (**P5)** 2.Non-user 3.Not involved in implementation decision 4.Current staff 5.Communications team 6. Leadership Position	April 13 4pm	Ecojustice office	1 hour	• 38 planned research questions asked • 16 were skipped: 5, 6, 11, 12, 15, 16, 18, 19, 20, 26, 27, 32, 33, 34, 42, 43