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ABSTRACT

DESIGNING MOBILE USER EXPERIENCES FOR COMMUNITY ENGAGEMENT
by

Kathleen M. Coffey

Planning, developing, and assessing sustainable mobile strategies is a challenge that many non-profit organizations face as they build mobile sites, native applications, and mobile experiences with community members. Through interviews with community organization leaders (n=3), community members (n=11), and a survey of a non-profit organization's members (n=266) in the southern Ohio region, this project, *Designing Mobile User Experiences for Community Engagement,* extends mobile literacy scholarship within the field regarding community-based work and, more recently, mobile communication literacies.

Seeking to fill a gap in writing studies research concerning mobile communication strategy in non-profit organizations, this study's research questions include:
   (1) How do community organizations use mobile technologies and mobile communication practices for community engagement?;
   (2) What does the mobile technology and strategy development process look like in community organizations?
   (3) How do community members and leaders define the affordances of mobile technologies?;
   (4) What purpose do mobile technologies serve in community engagement?;
   (5) What are the challenges and benefits of using mobile technologies for community engagement purposes?

Findings show participants encountered major breakdowns in motivation in using the application regarding three key areas: pertinence, personalization, and duplication of content, rather than issues that would be typically defined as breakdowns in ease of use. Ultimately, this dissertation offers a methodological framework based in activity theory and space as practiced place for studying mobile communication and mobile user experience that highlights identifying motivations and breakdowns that exist across communication ecologies and offers key strategies and practices for building, using, and developing mobile communications for community engagement.

DESIGNING MOBILE USER EXPERIENCES FOR COMMUNITY ENGAGEMENT

A DISSERTATION

Presented to the Faculty of

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fulfillment of the requirements

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Department of English

by

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ACKNOWLEDGEMENTS

Chapter 1 – Defining Mobile, Networked Communication

To say there are challenges in engaging a widespread and diverse community is an understatement. Engaging with community members through a variety of different communicative platforms and channels—mobile, web, print, and in-person interactions, and more—can pose complications in a communication landscape that continually requires more ways to interact across different platforms and devices with limited resources. Although rhetoric and composition is still relatively new to researching questions of mobile devices and native applications, this study is very much an extension of community-centered work that has been championed by scholars in the field (Cushman, 1996; Grabill, 2001 and 2007; Flower, 2008; Stoecker, 2009; Simmons and Zoetewey, 2012). In this way, examining how organizations engage mobile audiences— the challenges, affordances, and systems that influence this work—falls in line with research like Grabill's (2001) scholarship on community writing in that I, too, am interested in studying "how to design information infrastructures that allow people to make things that matter to them and their communities," regarding mobile communications, which have become largely ubiquitous and vital factors in how we communicate, socialize, and work. (p. 3).

Companies and organizations have progressively utilized social platforms and mobile devices within the past decade, using sites like Facebook and Twitter, along with building native applications, to engage with mobile audiences often in hopes of extended, ubiquitous connections and resource efficiency (Katz, 2008; Srivastava, 2008; Ling, 2004 and 2012; Kandasamy, 2015; Wang, et al., 2014). Mobile interaction with community members is just one layer of intersected and interconnected links in a greater system of communicative practices, events, actions, ideas, people, technologies, and devices. While engaging mobile audiences may be one layer in an otherwise complex communication system, it is an increasingly valued and utilized practice for community organizations and also increasingly important to the field at large (Swarts, 2007; Sullivan and Zoetewey, 2008; Kimme Hea, 2009; Swarts, 2013; Pigg, 2014; Pflugfelder, 2015; Strantz, 2015; Walls, 2016; Walls and Vie, 2017; Walls, Garcia, and VanShaik, 2017; Walls, Dieterle, and Miller, 2018). But as Walls (2016) argues, common profit-based motivations for developing applications often do not mesh with community members' and users' values (p. 2)[1], but mobile technologies do have the potential for great impact and social change with the right design and development frameworks (Walls, et al., 2017, p. 292). And although mobile communication platforms and devices[2] have great positive potential for community organization, they do pose many challenges for organizations. Mobile devices are changing rapidly, and because their functionality is very much tied to contextual and

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[1] Walls, et al. (2018) expand upon this argument in a study and development of *Safely Social*, a mobile application for survivors of domestic violence, calling out top-down design approaches as limited in how they allow for redistribution of user power (p. 392).

[2] I use the term platform to refer to social media sites such as Facebook, Twitter, Instagram, etc. I use the term in distinction from devices such as tablets and mobile phones with native applications or mobile sites.

habitual use, we may see changes in habit and functionality with each new software or device update. To that end, many community organizations are not as versed in keeping up with these material variations in devices, operating systems, etc., while creating mobile content that is flexible, adaptive, and sustainable across a wide network of communication. As devices and platforms change quickly, it can become difficult to know how to build and position an effective and efficient mobile communication strategy. While research has been conducted concerning motivating purchases on mobile devices or engaging mobile audiences for branding, transactional, or other consumer-type purposes in marketing and HCI scholarship, less research has considered 1) the value of mobile communication for community engagement, the 2) function of mobile communication within non-profit organizations' content strategy, and 3) effective strategies for building mobile content for community organizations. Subsequently, I developed this study on the use of mobile technologies and development practices for engagement in community organization contexts.

Mobile devices and services have become increasingly usable, functional, *and* affordable in the last decade, allowing for mobile communication to solidify itself as a standard point of contact with networked affordances. In fact, studies show that more and more people have contact with networked communications *only* through mobile devices. I think it is quite important to put our focus and attention on such a widely used and in some cases *only used* contact point between users and the networks around them. Specifically, as of 2018, 95% of Americans own cellphones, 77% of which are smartphones, according to studies conducted by the Pew Research Center (Mobile Fact Sheet, 2018). To put this into perspective, in only five years, the amount of smartphone ownership has nearly doubled: 39% Americans owned smartphones in 2012 (see figure 1.1). This shouldn't be too much of a surprise as researchers (Ling, 2004; Ling and Pederson, 2005; Ling, 2008; Lenhart, et. al, 2015; boyd, 2015; Cui, 2015; Ling and Menichelli, 2018) have been long reporting the strong preference towards mobile devices as a means of communication and expression, particularly in young adult populations. Broadly, mobile devices have become a central aspect of our lives (Ling and Menichelli, p. 312). Other researchers confirm the widespread use of more affordable mobile, networked devices has allowed for people globally to access the internet and mobile services on mobile devices in some cases *before* desktops (Mendoza, 2013).

The trend towards mobile-only access is growing within the United States as well. In 2018, 20% of American adults singularly use smartphones for their internet usage, showing a growing dependency on mobile internet since its jump from 8% in 2013 (Duggan and Smith, 2013; Mobile Fact Sheet, 2018). Simultaneously research has shown a marked decline in home broadband-only internet usage (Duggan and Smith, 2013; Mobile Fact Sheet, 2018). What this means is that we're growing increasingly more dependent on mobile internet as our dependency on home-based broadband internet usage drops. Specifically, there has been an increase in mobile-only access in those who earn less than 30,000 annually from 12% in 2013 to 31% in 2018 (Mobile Fact Sheet, 2018; Smith, 2015; Duggan, 2013). What is more important to me beyond the ubiquity of mobile communication is that mobile devices truly shape how we interact with the world and others. Shah (2014) speaks to primarily work-related topics, focusing on how mobile,

networked devices impact our work behaviors and practices, but what I find especially significant in his work is that he positions mobile work practice as not simply a study of remote working practice: in other words, work practices that are suddenly in new, different, or transient contexts. Instead, studying mobile work practices is the study of an active process of tools "enabling workers" and transforming their work behaviors, abilities, and functionality (p. 2). In this way, mobile devices *mediate* and transform our interactions. While we've seen research of mobile mediation within work places and interpersonal contexts (Shah, 2014; Rainie and Wellman, 2014; Ling 2012; Farman 2012), there is a limited understanding as to how mobile communicative tools and practices transform how we interact with our local communities and community issues and how mobile interface design and content can best support community engagement. Further, I see less of an understanding as to *how to study* mobile communication practices that support community engagement, especially amidst all of the other communication channels organizations use to engage with their members (e.g. print materials, digital platforms, websites, etc.). Just as researchers have studied the impact of digital affordances and shown great benefits and deep concerns, so too should we examine how mobile, networked communication and mobile interface design impacts how we work in and with our communities, spaces, along with how we develop interpersonal practices, habits, and engagement with the people and issues we care about in our local spaces.
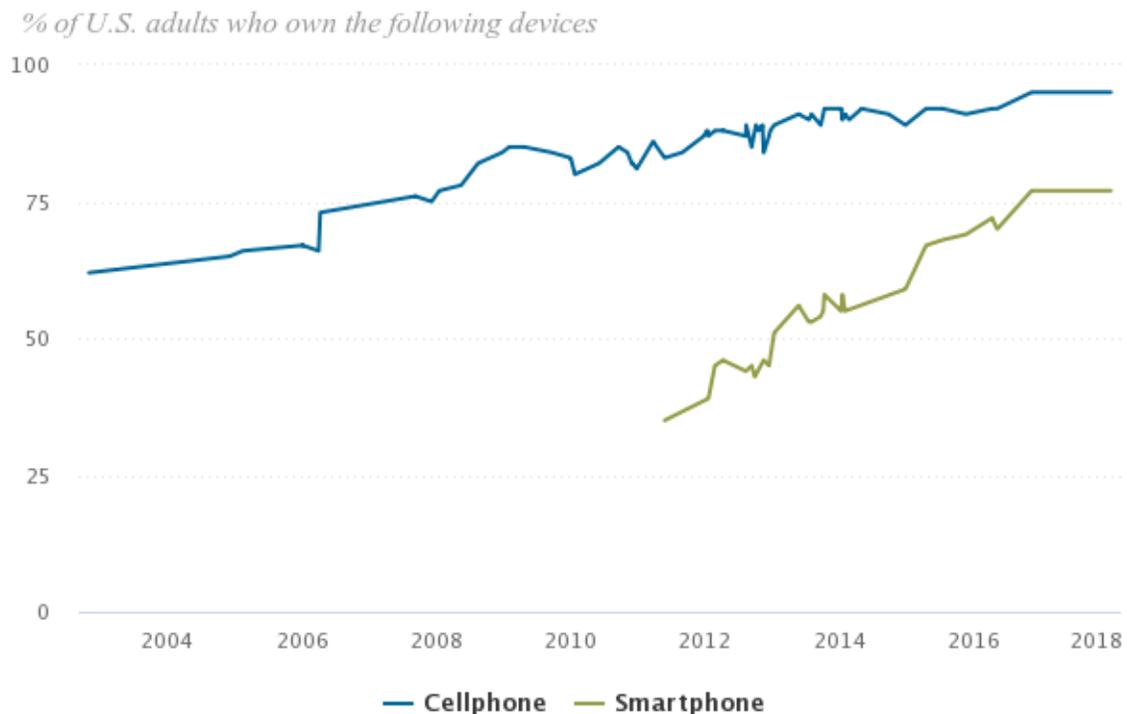
Figure 1.1: Mobile device usage from 2012-2018, showing an increase in cellphone and smartphone usage in the US based on PEW Research Center data (Mobile Fact Sheet, 2018)

As such, throughout this project I examined the complex activity of developing networked, mobile technologies for community engagement, focusing on the challenges, practices, and processes of evaluating and crafting mobile technology for community engagement use. Often, community organizations have limited resources and staffing to support designing and introducing new technologies and channels and rely on mobile design practices that are not contextualized towards community engagement. The following chapters develop localized research practices for mobile user experience (UX) through my dissertation. In order to accomplish this goal, I researched the following: How do we account for the needs, wants, and desires of users? How do we theorize the ways users reinvent and re-imagine technologies for their own contextual use? In many ways, my research focuses on how community organizations work to conceptualize and develop technologies and software: how people design technologies to suit their specialized and highly local needs. Considering mobile technologies means studying the interplay between vast networked systems of people, motivations, activity, infrastructure, and media. My major goal in this project is to develop a framework that is helpful for exploring the situated, embodied, and local uses of mobile technologies, which can help extend mobile user experience research and user interface practice. Using a methodology grounded in activity theory and space as practiced place, my hope is that this methodological framework can help situate, localize, and develop mobile communication practices and interfaces for community-engagement purposes.

As I discuss in the following chapters, I assessed the activities of users and community organizations as they craft networked and mobile technologies, communications, and content together. In this way, my research surveys how digital and mobile technologies inform how we communicate, solve problems in our communities, and resist or work within larger systems or structures. Drawing from methodologies, theories, concepts, and practices in activity theory (Engeström, 1990; Nardi, 1996; Engeström and Miettinen, 1999; Spinuzzi, 2003, 2008; Sun, 2012), community-based research (Lather, 1986; Cushman, 1998; Grabill, 2001; Stoecker, 2009) user experience, usability, and mobile communication design (Bentley and Barrett, 2012; Mendoza, 2013; Banga and Weinhold, 2014; Nagel, 2016), I studied how members conceptualize the affordances of mobile technologies, the benefits and limitations of mobile technologies for community engagement purposes, along with the systems of people, technologies, knowledge, and power that communities exist within. When I use the term affordance, I'm drawing from Norman's (1988/2002) seminal work on affordances as a relationship between objects, tools, and actors that determine how objects are used (p. 11).[3] My ultimate goal is that this research allows me to examine the unique affordances of mobile communications, content, and technologies and the transformation of embodied practice and space through these technologies in both user-centered and experience-driven ways to support developing **mobile, networked communication** with non-profits or organizations that serve the social wellbeing of a broader community. In this chapter, I first want to highlight the research questions that situate this study and then account for

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[3] Norman draws from Gibson's (1977, 1979) work on affordances as a relationship between object and actor. In an online essay, "Affordances and Design," the Interaction Design Foundation (2016) clarifies that the affordances Norman's referring to are our perceived affordances or understanding of the capabilities of an object.

how scholars have defined mobile, networked technologies and used mobile technologies with their work across disciplines, while noting some of the major transformative affordances of mobile, networked devices as ubiquitous, layering or hybridizing, and mediating tools.

Research Questions

My research is situated within questions of use and design, particularly in service of the communities that hope to use mobile technology productively. Beck's (2013) discussion serves as a reminder of the field's history with considering how helpful (or not) technologies are to the people that use them, noting, "Technology is not really as important as the people. So, we ask things like, does the technology get in the way of what we are doing?" (p. 351). Subsequently, my research questions ask how do communities design and develop mobile, networked technologies to serve their own highly local and context-specific needs? What are the failures of or opportune ways mobile technologies impact and inform systems for change in communities? How do community members and organizations work with developers to define their own contexts of use? How do mobile technologies bridge material and networked spaces in useful or unhelpful ways? To answer these research questions, I observed leaders, users, and community members at my research site, a non-profit organization in Cincinnati. Specifically, I interviewed the leaders of the organization and users of particular communication technologies through the organization. Additionally, I conducted a large-scale survey disseminated to the entire organization population regarding their habits, practices, and contexts of use. Through these interview and survey responses, I documented the communication ecology that the mobile application exists within, monitored its impact, success, and examined the breakdowns of communication in the community network.

Mobile, Networked Technologies

I've been using the term "**networked, mobile technologies**" because as Farman (2012) reminds scholars, mobile technologies have a long history (e.g. pens, paper) that existed well before smartphones and cellphones: networked, mobile technologies on the other hand are those that radically change the "embodied and spatial actions to which our devices contribute," as they connect digital networks, space, people, and other objects together in a ubiquitous fashion (p. 2), or as Telleria (2017) called this process, a "liquidity" or "diluting" across multiple boundaries of action (p. 1). Subsequently, scholars across various fields call for a theorizing of mobile technology that highlights the affordances that mobile offers as an "always on" and ubiquitous technology (Baron, 2010; Bentley & Barrett, 2012; Ling, 2012; Banga & Weinhold, 2014; Rainie & Wellman, 2014; Telleria, 2017). So, too, networked, mobile technologies are "critical links to virtual cognitive architectures that mediate work in non-places. Yet to cast mobile devices this way, we must begin by understanding the effect of mobility on our ability to create and use information" (Swarts, 2007, p. 282). As a result, this project draws from scholarship that inspects how our cognitive, embodied composing (Hawk & Rieder, 2008; Sun, 2012; Farman, 2012) and literacy practices shift in and through networked and mobile activity (Baron, 2010; Ling, 2012; Pigg, 2014; Wolff, 2013; Wolff, 2015).

Distributed Writing and Research

Like researchers in communications and sociology, researchers in technical communication have begun to study how work practices have transformed through distributed mediation. Specifically, Pigg (2014) builds from Reich and Johnson-Eilola's definitions of symbolic-analytic work and decentralized companies to show that we need to consider more closely the everyday practices of symbolic-analytic workers using social media networks in their work habits (p. 69). She's working with a definition of mobile media as couched in social networks and social network sites, but like Shah's research on mobile working, she's studying the impact spatial mobility has on writing and communicative practices. Through a case-study of "Dave," Pigg argues that social media help workers gain access to specialized knowledge and "existing communities of practice," understand and leverage community norms, and maintain an existence and presence within these community spaces (p. 70). In his work, Dave accessed many different layers of responsibilities through different interfaces and platforms, building and shaping alliances rapidly over the course of an observation session (p. 70). His continual, oftentimes quick, and simultaneous use of social media, embedded in his overall work practices, suggest that he has a *constellation* of practiced, mediated patterns of behavior (p. 79). Although Pigg doesn't expressly use the term mobile mediation in her observations of Dave, her work points to the complexity of our interactions with mobile devices and distributed content that researchers are highlighting as integral factors in how we manage information, work, and communicate with others.

While some researchers have studied the contexts of mobile mediation, others have used mobile technologies to collect data and argue for user-centered approaches to research methods. Specifically, Addison (2007) argues for a phenomenological approach to research—research from the perspective of people who have lived them—particularly in reference to studies of literacy. She argues that composition and rhetoric has a key opportunity for building literacies in areas where people are marginalized, and allowing people the opportunity to have their own perspective shared is a key way to developing sustainable literacy practices (p. 172). She notes that phenomenological research is driven to "describe and interpret some aspect of human experience from the point of the view of those who have lived the experience via direct evidence," it's the direct evidence and perspective that could pose challenges (p. 172). Addison offers that wielding mobile technology as a research tool can support this kind of research (p. 173). She notes that the question of literacy is embedded within a network or system, "variously situated in the world" and requires research methods that can identify and document themes and characteristics of literacies within specific socioeconomic settings, etc. (p. 174). Specifically, she offers that "experience sampling methods," those that focus on the lived experiences of participants, are those that can help support this research.

Studying a business writing course, Addison (2007) had participants take note of their writing situations (based on some prompts she provided) by using a data watch that would signal researchers to take notes on participants' writing habits (p. 178). She called this research tool an "entry level" mobile technology as it was easily accessible and could be used and learned fairly easily (p. 179). Although Addison's research takes a more limited use of mobile technology given the time at which this research was conducted and

published, her argument does add to the idea that mobile technologies can allow for people to more accurately or in a more time-sensitive way track their own literacies. These can be used in combination with interviewing or surveying to help make that method more effective, given the research question or goals. I think it's clear through these examples of mobile technology within technical communication research that 1) scholars are starting the variety of affordances these technologies bring to our field and our work practices, and 2) we're just beginning to see research that studies the importance and impact of mobile technologies, communicative practices, and interface designs not couched within social media platforms, websites, or networks.

Defining Mobile Technologies

Throughout the rest of this first chapter, I want to frame how scholars have defined some of the major terms I use throughout this project, and second, consider how scholars have examined the impact mobile technologies and devices have had in how we perceive space, information, and relationships. First, what do scholars mean when they use the term **mobile technology** and how am I using it in my research? Mobile technologies have been broadly described as devices that allow for location-bound communication (Frith, 2015), or often location-aware technology (Gordon and Silva, 2011), devices that can help users locate the self digitally and materially simultaneously (Farman, 2012), socially-embedded communication technologies (Ling, 2012), or simply synonymous for a smartphone, a networked communication device capable of displaying web, mobile, and application content and more (Webb, 2010; Bentley and Barrett, 2012; Banga and Weinhold, 2014; Rainie and Wellman, 2014). When discussing explicitly a smartphone, scholars typically refer to it as a mobile device and describe its functionalities, rather than using the broader term of mobile technology (Zoetewey and Sullivan, 2008; Swarts, 2012; Pigg 2014), referring to it as a device that often blurs boundaries and activities of domain (Swarts 2007). While I often use these terms interchangeably, I find that my research is bound to mobile *devices*, specifically the smartphone, mobile affordances, and mobile software design. Pigg, et al. (2014), quoting Gurak, assert that "as communicative devices, smartphones are remarkably agile and mobile writing technologies that provide users with the ability to leverage the speed, reach, anonymity, and interactivity afforded by computer networks (Gurak, 2001)" (p. 92), and what I find important in assessing smartphones is not entirely that they have affordances similar to computers, but that mobile affordances have shaped interaction, social structure, and communication and work practices in ways distinct from other devices.

Secondly, when referring to **mobile interface design** or mobile experience design, or even more broadly, an interface, I am using a combination of definitions that positions the interface not strictly as a screen, but a mediating, networked environment that shapes experience and communicates cultural values (Selfe and Selfe, 1994; Sun, 2012). I'm drawing on Loel and Swarts' (2007) iteration of the interface within technical communication scholarship, combined with Farman's (2012) discussion of the mobile interface. Loel and Swarts propose that an interface is not simply a screen, or the connecting point between users and technologies, but wrapped up and "stretched over" information, materials, and networked space (p. 218). Through this, they argue that the term interface does not strictly mean the screen of a computer or device, but the interface

extends beyond to include our social interaction and experience with information, people, and networked systems (Loel and Swarts, p. 218). So, too, a mobile interface includes the material device, as Farman argues, but also includes a larger network of relations with people, information, and software to shape our experiences with interfaces. Farman explains that the mobile interface is not strictly a thing but, "a nexus of social conventions and practices of embodied spatiality," in that these conventions and embodied experiences inform design (p. 116). In reference to embodiment and embodied knowledge, I define embodied knowledge as knowledge through active participation and interaction using Dourish's (2004) work wherein he argues that embodied knowledge is knowledge drawn from interaction, from engaged participation, rather than "disembodied cognition" (p. 189). In this way, embodied knowledge foregrounds personal accounts and contextualized experience. But more central to my reflection than the nuance of these terms is how networked and mobile devices shape social interaction and communicative practice as they've become increasingly embedded technologies through embodied experiences.

In recent history, mobile technologies, particularly mobile phones, have become embedded in the sense that people have started to feel like they are essential to social interaction and communication[4] (Ling, p. 101). This points to a shift in perceiving these devices as acting not strictly in instrumental ways, or in other words, "not merely a functional object," but are instead are the "locus of a broader discussion" of intercommunication and social interaction (p. 102). **As such, mobile devices have shifted the foundation of how we interact and coordinate with others** (p. 124). Ling recounts that as the mobile phone reached mass concentration in our lives—as they became more socially embedded technologies—we began to see the social affordances of the mobile phones, rather than perceiving them only instrumentally (p. 167). And as the mobile phone became more embedded, we've become more broadly reliant on mobile phones for social interaction, information processing, and more. In becoming so reliant, Ling argues, that we've developed social expectations surrounding mobile technologies and communication: when we don't have access to networked, mobile communication affordances, it throws a wrench in our social interactions (p. 3), as social mores and expectations regarding mobile communication continue to shape our communicative practices and habits (p. xi). I think this starts to express the importance of mobile technology in our society and why it can be such a problem when aspects don't work the way we want them to or were never *designed* to work the way we'd like as a socially ingrained technology, whether we're talking about functional errors in a mobile site or an application that doesn't quite serve our needs in the ways we expect.

Hawk and Rieder (2008), too, argue that "small tech," or essentially mobile devices, bridge networked systems and everyday practices, creating more complex ecologies of networks across digital and physical space. While small tech, as Hawk and Rieder call it (what many would largely define as mobile technologies broadly now:

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[4] Baron (2010) argues that mobile and online communication changes how we interact with others fundamentally: prior to digital/networked communication we had to rely mostly on physical presence to control our interaction (p. 33). New practices and affordances allow us to engage in multitasking (p. 37).

smart phones, cell phones, tablets, etc.), they argue, allows for easier access to wider networks of information, that doesn't mean that power is evenly distributed across the networks available through mobile technology (p. xi). Like Farman, Hawk and Rieder point to the embodied and physical practices associated uniquely with mobile technologies, noting that an "emerging handheld culture" is prompting "new physical interfaces embedded in material ecologies" (p. xiii). While Farman, Hawk, and Rieder attend to definitions of mobile technologies and devices, other scholars have questioned the mobile literacies that have emerged in the past decade (Pflugfelder 2015, Pigg 2014) and also how networked mobile technological information is used in contextual and localized ways (Swarts, 2007; Sun, 2006 and 2012). What I draw from these definitions is that even though there are more scholars researching mobile technologies, literacies, and communications, there is still little focus on how organizations develop and strategically build mobile engagement practices and effectively integrate mobile content and interfaces into a larger communication ecology.

Space, Ubiquity, and Interaction

Over the past decade, scholars studying mobile interfaces and technologies have pushed against popular beliefs that networked, mobile devices disconnect us from our physical space (Gordon and Silva, 2011), effectively separate us from interacting with the physical environment (Farman, 2012), act as distractions in social interactions or interruptions (Ling, 2012), increasingly isolate people from one another (Rainie and Wellman, 2014), or that they detract from or take away from the current spaces, places, or people to prioritize the "distant others" whether through texting, telecommunications, or social network interaction (Silva and Frith, 2012, p. 78). Instead, these scholars and others argue that mobile technologies afford new, transformative interpretations of space, literacy, and materiality as dually networked and present in material space that I believe shows the important role that mobile interfaces play within how we process information, connect with others, and compose across networked and physical space (Sawhney, 2009; Swarts, 2012; Pigg, 2014; Frizzera, 2015; Buck, 2016).

Mobile technologies, particularly the smartphone, have been described as functioning as a social distraction or disconnection in public spaces (e.g. using your phone on the bus disconnects you from that environment). However, in part, the mobile devices have been represented as a distraction or a mode for disconnection is because they were radically different from how traditional phones were perceived as functioning in public space (Silva and Gordon, p. 83). In the same vein, mobile devices have been characterized as voyeuristic tools that more so bolster strong, homogenized ties, rather than supporting weak, or otherwise diverse, ties across social networks: "the mobile phone is viewed as a device that enables remote communication and the formation of close-knit social networks while on the move, at the expense of local connections" (p. 84). When Gordon and Silva use the term strong and weak ties[5], they're referring to the

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[5] Granovetter (1977) was one of the first to popularize researching weak ties, explaining that weak ties— the diffuse connections between people at the margins of a social setting or structure—are valuable. They are valuable in the sense that they allow people to connect with different networks of people. Through the 1970s, sociologists typically structured dyads and triads through their connections, or ties, to one another. And for a long period of time, strong ties—ties where people communicated consistently

persistent or patterns of interactions between people (Giuffre, 2013). And while these critiques overall aren't entirely untrue, these arguments about how mobile phones, software, and communication function are generalizations that do not attend to the full extent of contemporary mobile user experience.

What these perceptions of the mobile device as distractions point to is a limited perspective of mobile affordances. Rather than distractions, mobile devices can help *manage social and communicative interactions* with people and places (Silva and Gordon, p. 87). Mobile communication or engagement is not inherently disconnecting users from their local spaces, but **an active process of managing social and networked interactions grounded in local space**. The local environment is a part of the mobile experience, playing a role that shapes mobile user experience and is, in turn, shaped by users in an active way. Networked, mobile technologies allow for a managed layering of space. Farman defines this concept as a "multiplicity of experiences": instead of mobile technologies strictly transplanting us from one environment into another (say, transporting us away from a restaurant if we use mobile technologies there to a digital space), using these technologies mediates our physical, material experience, networked experience in a *layered* fashion (p. 36). There is a "constant interplay that bonds the virtual and the actual together," and the more that we use mobile technologies throughout our daily lives, the more our everyday practices are transformed into this multiplicity of experience (p. 39). In this way, mobile devices create an overlay, a hybrid, of embodied experience and networked space for communication. Because of this layering effect or hybridity of embodiment and networked space, mobile devices simultaneously *mediate* those experiences, in real-time, acting as a kind of *social interface*: "space has gained new dimensions [through mobile media], resulting in a sort of hybrid space where digital information overlays the physical space," and as these devices become more engrained, or further embedded, they can take on the role of a social interface that increasingly mediates our experiences of space, information, and communication (Frizzera, p. 33).

While scholars have shown how mobile devices have created a kind of layering effect in how we experience physical space, scholars within rhetoric and composition point to how mobile technologies shape how we craft literate habits and information across locales (Swarts, 2012; Pigg, 2014; Strantz, 2015). In a study of shifting composing habits in an increasingly mobile environment, Pigg found that mobile affordances—she's specifically studying composing in Internet cafes—restructure how we might otherwise compose. For instance, she realized that students who, because they could, chose to compose outside of libraries or in dorms, creating for themselves new practices in internet cafes as these environments were more comfortable for them (p. 262). This speaks to the ways that writing practices continue to co-evolve as we compose in different environments through mobile affordances. Although quite a different kind of study, Swarts work on veterinary students and PDAs shows how the *design* of mobile

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and typically consisted of more homogenous and stable dyads and triads—were seen as most influential in social structures. So, it was the strong ties that were considered more helpful in circulating information across social spheres. Granovetter, however, noticed that what he defined as weak ties, ties between typically more diverse people through unstable interactions, did, in fact, shape social interaction and communication. Weak ties were the connector points across different networks.

devices informs our composing in situated environments. The material device of the mobile phone, because of its nature to space cross boundaries and layer physical and networked spaces on top of one another, means that when using mobile devices we bring our expectations of genres with us. And in the case of the students Swarts studies, the genre of the illness narrative was not necessarily built to be composed through a PDA. Swarts argues that students with access to PDAs had larger swaths of data to sift through when developing their illness narratives, making that process challenging as the devices were not designed to attend to building those narratives. In other words, the cognitive processes students developed in writing illness narratives were not easily transferrable because the design of the device did not match the students' composing practices and cognitive processes.

Much of the research I've discussed so far has predominantly been focused on how mobile devices or technologies have created a layering of networked and material space, and this concept extends to mobile platforms and software (e.g. Facebook, Instagram, Twitter, etc.) as well (Wolff, 2015; McNely, 2015). In fact, much of the research from writing scholars draws from, closely analyzes, and traces different moves rhetors make and how content circulates on specific platforms. For example, Wolff found that by following ~14,000 tweets with the word "Springsteen" over a year and a half, participants tweeted about pre-, during-, and post- events that Wolff broke in several categories: 1) Historicizing their activities within their own lives or a fandom (in this case, Springsteen fans) 2) Intertextual references "that overtly or unconsciously had its full meaning in the understanding of a larger context;" 3) Perpetuating the events of the show; 4) Integrating language of the discourse community 5) Mediating their experience through multiple modes and platforms (e.g. Twitpics, Check ins, Instagram photos, etc.) (Wolff). All of these categories suggest that participants needed to acquire and use new composing and reading practices to participate fully in the Springsteen fandom, but what I find particularly telling in this research is that it shows how a platform, while not a strictly mobile platform, when enacted and analyzed through its mobile affordances, provides new categories of reference within a community's structures for communication. In recent rhetoric and composition scholarship, we tend to put focus on specific platforms, like Twitter, as that data is mostly publicly available and has impact socially, but at the same time, we tend to highlight the networked affordances of these platforms over the mobile affordances, whereas I see these as inseparable aspects of the software (at least in how we typically use these applications or mobile sites). In other words, the layering of the physical space of the concert with the networked space of Twitter directly influenced the nature and content of the tweets in ways that couldn't be as easily circulated throughout a fan community before this hybridized effect of mobile technologies.

In an analysis of mobile communication and space, McNely (2015) offers that studying geocachers on Instagram can highlight the *when* of social, mobile communication and activity. McNely argues, extending Selber's work in rhetorical literacy, that online environments "move with us" can be considered through social media and the concept of when (rather than what a platform does): "Exploring *when* we choose to post images to social media is a line of inquiry very much tied to one's lived

experience" (McNely). What I find especially insightful in McNely's discussion of space and mobile interaction is that this kind of research necessitates methodologies that allow for a broad contextualization of when we communication through of mobile technologies and software and why:

> If we are to systematically study and understand the kinds of actions that have become tacit for Louise and other geocachers, we need theories and approaches that help us carefully attend to the actions she makes, the times and spaces in which she makes them, and her individual and social motivations for doing so. From this perspective, the context framing an action that seems routine and mundane—a simple Instagram post depicting her geocache find—may become quite complex very quickly. (McNely, para. 9)

McNely's work shows not only that creating just a single Instagram post requires a wealth of prior knowledge and literacies of using the platform itself, but that the new combinations of space and networked affordances—mobile affordances—make for increasingly complex composing that needs grounding in theories that can attend to everyday, mobile actions.

I started this section with some of the myths of mobile technologies as distracting tools that disconnect users, and while I want to emphasize that mobile technologies are valuable beyond distractions, that doesn't mean we shouldn't be careful about how we position them moving forward. For example, Kimme Hea (2009), rightfully warns against the myth of mobile and wireless technologies as inherently positive. Instead, we need to move towards critical assertions and assessments of these technologies in the classroom space and I'd like to think beyond as well (p. 200). Assuming that mobile technologies for learning opportunities (M-learning) or otherwise will always be valuable to users, students, or community members is a dangerous perspective that contributes to ineffective and ultimately not useful mobile applications, sites, and educational opportunities. Part of this myth is that mobile technologies serve as a continuous, reliable connection[6] to networked resources; however, the "anywhere, anytime" models need close, critical inspection to push against the idea that mobile ubiquity is inherently valuable or even true in certain communities (p. 200). Without a critical perspective of time and space, mobile technologies are often perceived as "omnipresent, invisible and everywhere," which tends to obscure the reality of their usefulness in a given situation, supporting the idea that mobile applications, sites, and engagement will be inherently positive when there's possibility for efforts and resources to be wasted on building apps and sites (p. 205).

And we, as rhetoricians, are in a unique position to push back against uncritical perspectives of mobile and wireless technologies. Although my discussion doesn't delve

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[6] The US was notoriously slow in picking up cell phone usage. Holds placed on airwaves for cellular devices by the FCC led to a 10-year lag in developing cell phone infrastructure and use in the US (Hazlett, p. 70). With increased licensing opportunities and infrastructural support through the 1990s, while mobile phone usage was still expensive comparatively, it allowed for this conception of mobile phones as, idealistically, affording a continuous connection between users, although this was largely unrealized at the time (p. 75).

as much into pedagogical concerns, we should be wary of the idea that these technologies will automatically engage students: "Wireless laptops alone cannot guarantee critical literacy" (p. 208). Specifically, we as rhetoricians can speak to the ways that technological innovations are supported over "educational potential" (p. 213). WPAs, in particular, must attend to the local constructs of our institutions as we build mobile and wireless programs, particularly to issues of security, workload, labor, and privacy.

What I think the research throughout this chapter suggests is that mobile technologies, devices, and platforms not only inform how we access and process information, but also how we interact with space as a kind of hybridized place, both networked and material. As such mobile devices offer a restructuring of both our social interactions and embodied experience through a kind of layering, or a blurring of social interaction and networked engagement. The distinct layering that mobile technologies afford allow for new embodied interactions, literacies, and practices across multiple spheres that continues to need applied methodologies and theories[7] to accurately contend with the strengths and pitfalls of mobile communication technologies in society.

Chapter Overview

My second chapter expands upon my discussion here by developing a theoretical framework for studying mobile, networked communications and interfaces **appropriately contextualized within a constellation of other channels, values, and experiences**, an ecology of communication. This framing is grounded primarily in Engeström's activity theory and Certeau's construction of space as practiced place as a way to focus explicitly on motivational use across ecologically-bound activity, or activity that is tied to contextual factors, multiple devices, and simultaneous activity across space and time. Specifically, I argue that activity theory (Nardi, 1996; Engeström, 1999 and 2000; Kain & Wardle, 2005; Spinuzzi, 2008; McNair & Paretti, 2010; Sun, 2012) highlights the complex systems of local information, people, environments, and the various technologies that mediate activity to accomplish some kind of objective or activity. As Nardi (1996) argues, "activity theory proposes a strong notion of *mediation*—all human experience is shaped by the tools and sign systems we use," within activity systems (p. 6). Activity as a unit of analysis in activity theory requires that activity or *doing* is always framed by larger, ecological constructs of the surrounding environment (Spinuzzi 2008; Kaptelinin & Nardi, 2012). In other words, by defining activity as the unit of analysis, researchers must take into account the broader actions, practices, habits, and communicative structures that exist in combination with, in association with, in tandem with the localized activity. Effectively, it is a framework for examining the complex ecologically-bound contexts of technology use and mediation.

Chapter three further develops this framework by examining the community-based research (CBR) practices (Lather, 1986; Cushman, 1996; Stoecker, 2009; Getto, Cushman, & Ghosh, 2011; Grabill, 2007 and 2012) imperative to my research. Because

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[7] For instance, both McNely (2015) and Kimme Hea (2009) call explicitly for new methodologies and theories or experimenting with methodologies and theories applied anew to mobile research.

my research is with community organizations on their development of technology, I outline theory that not only investigates the activity of mobile experience, but also shapes ethical interaction with community members and organizations both online and in-person. As Stoecker (2009) argues, to truly engage with CBR practice, researchers must productively include community participants in research stages beyond data collection. Chapter three also discusses my primary research site and investigates how the community I worked with creates meaning through mobile technologies, and how those mobile technologies support the community in local and context-specific ways. Additionally, I explore how mobile technologies inform community systems by assessing where breakdowns occur in the larger communication systems. To apply this framework, I assess the activity systems—the mediation of communication, practices, habits, and engagement through mobile technologies and other technologies—of an organization based in Cincinnati, OH through the following methods: Semi-structured interviews with organization leaders (n=3), a survey of the community at large (n=266), and follow-up semi-structured interviews with participants who have completed the survey (n=11). These methods are grounded in user-centered design and community-based research, encouraging user-focused perspectives from a variety of different users in the community.

Chapter four delves more deeply into key findings from chapter three by examining the factors that impeded use of the mobile application. I first focus on traditional usability elements through an ease of use analysis. I realized that while standard usability errors and issues did exist within the application, **these were not the breakdowns that were causing immediate issues in sustained and motivated use of the application.** Given that my methodological framework encourages study of technologies and communication channels in context and in communication of other interfaces, devices, and platforms, I explore further both 1) what emotional characteristics motivated users to develop a strong attachment and/or habit of use and 2) what breakdowns existed across the channels, including those beyond the application, for instance, the weekly bulletin or email update. Using these characteristics and the breakdowns, chapter four develops strategies and practices for creating productive mobile user experiences that prioritize connectivity across channels and novel use of mobile affordances.

The fifth and final chapter of my dissertation reflects upon and argues for mobile communication research situated within a reworked or reimagined version of activity theory to account for space and ecological perspectives of technology use. Largely, an activity-space-framed methodology speaks to research design that supports in-context data collection and contributes to the following: 1) Encourages a holistic perspective of mobile user experience that attends to local patterns of experience, space, and contextual factors through practices that orient mobile user experience as distinct from web experience; 2) Highlights embodied experiences rather than pre-determined tasks of mobile software or a mobile site; 4) Calls for researchers to preemptively assess user behaviors and mobile software and communication uses and iteratively negotiate them throughout new designs; 5) Acts as a flexible guide for studying interaction design across space that can be extended as needed for newer technological innovation.

Chapter 2 - Locating Mobile Experience Design through Activity and Space

When I began my research with a local community organization in Cincinnati and the native mobile application they had developed, I realized that in collaboration with them, studying what motivated people to use the application, how mobile technology impacted their experience of the organization, and the challenges they experienced—the breakdowns in communication—would be useful for the organization *and* provide a contextualized perspective of mobile communication. And in order to get to a more contextualized perspective, I decided that I couldn't study the application by itself, isolated from the different communication channels (e.g. print materials such as a weekly bulletin, and newsletters, and networked materials such as weekly emails, the mobile application, website, etc.) this organization put out to its members. To more fully understand the motivational behavior behind using the application, I had to compare these motivations, values, and expectations across activity with communication channels the organization used. In other words, I needed a methodological framework that would 1) appropriately *situate* people's motivations for using mobile technologies within a setting or context and, 2) attend to how we conceptualize connections to material and networked spaces in those experiences within a larger ecology of motivations, use, and functionality. Importantly, as Hawk and Rieder (2008) position technologies as "only experienced in relation to other entities arranged in complex constellations to form particular environments," so I think it was imperative that I studied the application in such a constellated environment (p. xvii).

I've found activity theory (AT) applied to this kind of research to be a helpful fundamental component of this methodological frame as it is a theory that encourages researchers to develop a snapshot of interactions between communities of people, specific tools, objectives, and their motivations for using a particular tool or resource to mediate their actions. While activity theory is useful for theorizing why people use particular technologies in meaningful or significant ways, it is limited in how it attends to queries of material space. AT prioritizes instead social space: social structures, rules, conventions, and expectations over the impact of material space. And since material space is such an important factor in contextualizing *mobile* experiences, I've found that Certeau's (1984) perspective of space as practiced place to be a useful extension to activity theory's framing as it positions activity as creating, informing, and moving within the spatial experiences of the everyday embodied experiences of users. This chapter first examines fundamental aspects of AT through Engeström's early research of AT, before considering the impact AT has had in writing studies research. The second half of this chapter focuses on the characteristics of activity and space that I find to be most valuable for mobile user experience research, particularly the concept of activity as mediated by tools, activity as layered, and space as practiced place.

Foundations in Activity Theory

Although activity theory has often been used as a kind of tracing tool of genre within writing studies, broadly, AT is a framework for theorizing mediation and use of culturally and historically-situated tools within larger structures of conventions and patterns of behavior, or an activity system, made up from people, motivations, conventions, and community roles (See figure 2.1 for a visual interpretation of an activity system as described by Engeström). It's not a predictive model, but instead a *descriptive guide* to document, observe, and examine layers of mediated activity across systems (Nardi, 1996, p. 4)[8]. The theory itself comes from Vygotsky's philosophical resistance, in part, towards the concept that social research is reducible to human-to-human dyadic or triadic-based interaction; instead, activity theory asserts that human-to-object interactions are a foundational concept in how connections and networks are formed (Engeström and Miettinen, 1999, p. 4). Further, a distinction in activity theory from other social theories is that the unit of analysis is activity rather than human characteristics or individuals. The unit of analysis is, more specifically, an activity system: the connections and co-present mediations between humans and their motivations and culturally and historically informed tools, which should allow for a rich description of technology *use* over time. Through activity theory, all local activity "resorts to" or is mediated by "historically formed mediating artifacts" (p. 8). And the combination of human and artifacts, common in certain systems or contexts create momentary, yet durable connections within systems that can be studied and analyzed.

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[8] Nardi, B. A. (1996). *Context and consciousness: Activity theory and human-computer interaction*. Cambridge, MA: MIT Press.
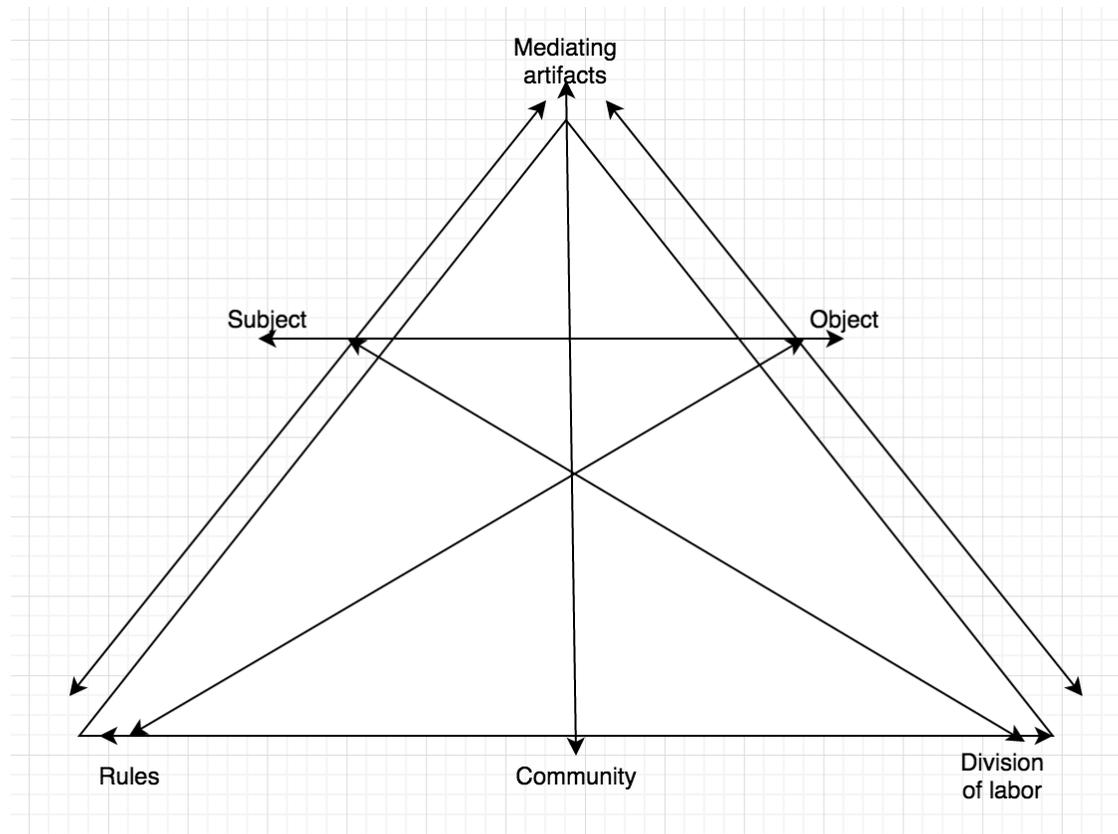
Figure 2.1: A visual reference to describe an activity system, recreated from Engeström's (2000) "Activity theory as a framework for analyzing and redesigning work"

Engeström and Miettinen argue for activity theory's extension beyond simply a psychological theory and instead highlight its broad application to the many locations of practice-bound cognition (p. 8). Through activity theory, all local activity "resorts to" or is mediated by "historically formed mediating artifacts" (p. 8). And these artifacts, "cultural resources" common in certain systems or contexts, create momentary, yet durable actions within systems and networks (p. 8). Engeström and Miettinen points to how Latour really comes to a similar conclusion about mediation and society, how nonhuman objects mediate in locally constructed ways to build social structures and societies (p. 8). They argue that new landscapes of interactions between new technologies and users is a perfect space for activity theory: "To be able to analyze such complex interactions and relationships, a theoretical account of the constitutive elements of the system under investigation is needed. In other words, there is a demand for a new unit of analysis. Activity theory has a strong candidate for such a unit of analysis in the concept of *object-oriented, collective,* and *culturally-mediated human activity*, or *activity system*" (p. 9). The internal tensions and "contradictions" lead to change within these systems: it's a framework for providing a larger picture of activity and looking for the breakdowns that make change.

Engeström and Miettinen argue that new landscapes of interactions between new technologies and users are a prime space for activity theory: "To be able to analyze such

complex interactions and relationships, a theoretical account of the constitutive elements of the system under investigation is needed," wherein the unit of analysis is activity systems, patterned behavior, mediation, and object-oriented human activity (p. 9). Internal tensions in the system or "contradictions" lead to change within these systems. How this plays out is when people try to accomplish some kind of goal, what activity theorists call the "object" of the system[9] and some aspect of the system blocks, challenges, or otherwise does not allow someone to achieve that goal, that is an area of contradiction or breakdown. Overall, activity theory is a framework for providing a situated perspective of contextual use and interactions between people and tools through goal-oriented behavior over time in their everyday use, asking researchers to highlight the variety of different materials, tools, platforms, and technologies that support actions and motivation-based activity. In my own research, this means that the frame guides me to focus most explicitly on how the community typically uses the communication channels (including the mobile application) and what characteristics block their motivations either consistently or so severely as to impede their use.

Using a longitudinal child healthcare study in Finland as a case study in his early research, Engeström presents AT as a framework that "attempt[s] to overcome the aged dichotomies between micro- and macro-, mental and material, quantitative and qualitative, observation and intervention" in a sociological and psychological theory (p. 961). Essentially what AT does, according to Engeström, is make sense of individual action *within* a collective system. While the actions within a system may be momentary and unstable, it is within a larger, more stable or routinized system created by contradictions and innovations. This system is made stable through conventions, norms, and "scripted" practices (p. 964). And ultimately we can start to study these systems through the stability of structure these breakdowns and actions create broadly.

Central to activity theory is that tools and artifacts mediate social interaction, social structure, and cognitive practices in human activity and development, to the point that tools not only allow for certain activities, but *transform* activity into something it couldn't have been before (Engeström, 1990; Engeström and Miettinen, 1999). Vygotsky argued that culturally/historically-situated uses of intentional signs and tools were vital for learning about cognitive development. And, while activity theory began as a more psychology-focused theory, over the past several decades it has been extended through many fields, including Human-Computer Interaction (HCI), technologies studies, sociology, and more recently, rhetoric and composition (Kain and Wardle, 2005; Spinuzzi, 2003, 2008; Potts, et al., 2011; Sun, 2012). However, as a theory that began mostly in psychology, it offers grounding for user research and observation, requiring researchers to more closely evaluate what users are thinking throughout using technologies, considering their motivations, and evaluating their lived practice in real time. Much of the research using AT draws from Engeström's body of work, and before delving into the aspects of the theory helpful for my research more specifically, I want to show the flexibility of its use within our field.

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[9] I think it's helpful to think of the object of an activity system not as a physical object, but instead an objective or goal.

Activity Theory as a Framework in Writing Studies

Writing researchers have used activity theory in many ways: to study language, teach and study genre within the composition and professional writing classrooms.

For instance, using activity theory and speech act theory, McNair and Paretti (2010) argue that AT (as articulated by Engeström) holds power "in large part, in its ability to position communication within a larger sociocultural system, enabling, as Artemeva (2008) explained, ''a detailed analysis of human activity,''" by considering the subjects, object(ives), the community these subjects exist, the rules and expectations of said communities and contexts (p. 326). Instead of focusing strictly on one interaction, speech strictly, or interactions only between humans, they position AT as providing an analytical lens for studying larger systems of people and non-human actors. They argue that AT allows them to point to the *many* factors that mediate within globally networked environments (e.g. communication differences, technologies, etc.) and the ways in which these tools interact that lead to breakdowns or *transformed activity,* the blockages and workarounds users develop when they can no longer work within the interface or use a tool as efficiently and effectively as they wish (p. 326). Using a digital work meeting at a large manufacturing company in the US with international branches as a research site, McNair and Paretti show how they broke down the meeting into its parts through both AT pieces (subject, objectives, community, etc.) and additionally into speech acts to show the breakdowns across the meeting. Their overall goal with this research site is to show students in the classroom how language (speech acts) technologies (digital technologies, material technologies such as a white board given access to the US HQ but not the branches and the politics of said artifacts) interact and intersect to mediate activity within a system (p. 342).

They argue that AT is vital to parse out how various tools in the classroom mediate in order to achieve the objective or not: "linguistic and technological tools mediate both the nature of the activity and the relations between subjects enables teachers and researchers alike to develop a framework for analyzing the ways in which these tools sustain or inhibit the desired outcomes of the activity system" (p. 351). They note that combining AT with speech act theory and politics of the artifact help show how artifacts and tools mediate and transform linguistic practices in writing classrooms (p. 351). Although McNair and Paretti highlight quite a different application of AT than my own, I want to point to some of the successes writing scholars have had with the theory as a framework for breaking down complex ecosystems of technology, genre, and communicative practices.

So, too, Kain and Wardle (2005) use AT as a framework for teaching students the nuance of relationships across context, genre, writers, and convention. Their study came out of the growing pressure for professors to create environments where students can gain experience with professional genres and contexts, Kain and Wardle explain that one of the main challenges of this endeavor is that classrooms cannot authentically mimic the workplace. We are left with the question: "How can we, as instructors, effectively introduce students to practices and genres of professional communication in meaningful ways?" (p. 114). It is through genre, that students often learn about professional environments beyond or outside of the academia. But genres are not static forms, they are

specialized social knowledge that evolves and shifts given the surrounding system of context. And in the classroom, genres still adhere to the rules and conventions of that space, no matter how hard we try to mimic other spaces: "Because genres and the conventions that shape them are inherently linked to the work people are accomplishing, the genres that students learn in school respond to the exigencies of the classroom where students' work is learning (Lave and Wenger)" (p. 116). While it is impossible to completely mimic workplace settings, Kain and Wardle offer that transfer can still take place by teaching students a framework of activity theory: students can bring experiences, skills, and knowledge from classrooms to new settings and apply them by:

1. Facilitating opportunities for practicing genres, skills, and experiences;
2. Contenting with abstract principles and knowledge from the classroom setting and explore their potential and applications, limited or not, in other settings, through projects and thought experiments;
3. Promoting mindfulness – a state of alertness to the complexities and nuance of the work in the classroom; require students to break down the point of the assignment, perhaps;
4. Understanding further application through metaphor and analogies (pp. 117-118).

Kain and Wardle contend that teaching AT to students, a theory that helps understand context and the relationships between objects, subjects, and tools, can help students not only recall former experiences, but know how to explore and analyze their new contexts: "Activity theory as we present it in this section does not require the student-turned-worker to recall and then adapt generic conventions and formats learned in a one context (the classroom) to different documents in a new context. Rather, it provides students with tools for analyzing contexts and situating communication practices within context" (p. 119). Specifically, they note the various concepts of AT, based mostly in Engeström's interpretation, rightfully noting the contention that mediation is one of the most vital components of an activity system: "The choice and use of tools can inhibit or facilitate group cohesion, empower or disempower people in activities, and limit or expand discursive activity" (p. 121). Kain and Wardle explain, "Engeström argues that activity theory provides "an approach that can dialectically link the individual and the social structure"" (p. 122). In other words, by examining the relationships and interactions among subjects, tools, and motives and the ways that the social basis of the system shapes individual actions, we can better understand how individuals perceive activity and operate in contexts and explain why individuals are motivated to learn and use particular tools;" we can more fully understand the context or the system by which tools mediate, subjects, and object mediate and inform activity (p. 122).

In a study of two classes taught by Wardle and Kain, they explained the assignments they asked students to complete, including teaching AT and asking students to explain the function and mediation of genres in certain situations while using AT (p. 125). While students were able to sophisticatedly offer explanations of genres, AT offered experiences beyond learning specific conventions of a genre and instead understand the context through which that genre became/becomes useful and valuable:

"Beyond learning about documents, students investigating context learn to look for and ask about the relationship between activities, participants, and the presentation of information" (p. 127). So, too, students identified that genres were:

- Stabilized for now, but could change based on activities (p. 129);
- Informed by historical setting (p. 130);
- Informed by other activity systems outside of the immediate one being researched (p. 130);
- Have different value for different people and divisions of labor (p. 131);

In this way, they argue that people and communities can have many different motives for using a genre (p. 131) and although not as commonly discussed by students, some noted that genres anticipate future activity and responses (p. 132). While some of these features can be understood through rhetorical analysis or textual analysis, AT offers vocabulary and insight into a broader context than often rhetorical or textual analysis offers. Although Kain and Wardle use AT as a guide for studying students and their learning, their research speaks to activity theory's strength in identifying habits of behavior that could ultimately shape and guide our not only our use, but how we perceive *the value* of a tool in our lives, how technologies and communication channels *become* valued in context.

Russell (1995, 1997) also uses activity theory as a framework for studying communicative practices beyond dyadic interaction. In reaction to dialogistic/dialogism or Bahktinian ways of viewing writing which are too focused on conversations for Russell, he melds AT and genre theory to prompt focus on a dynamic, emergent context of writing (p. 509). Using Cole and Engeström's iteration of AT, Russell explains that AT is an "ongoing, object-oriented, historically conditioned, dialectically structured, tool-mediated human interaction" (p. 510). Tools are those that mediate, as such they are always in use (p. 511). Systems are not entirely stable, yet wholly dynamic systems created and re-created through small patterns of actions (p. 512). Important to his argument is Bazerman's iteration of genre theory, wherein genre systems and genres have more or less influence in an activity system based not on inherent power in its structure or form, but power through our expectations of them in tool-mediated spaces (p. 524). In other words, genres do not inherently have power, but hold power within activity systems, in part, due to our constructed expectations of their use. While Russell uses AT to examine the impact, challenge, and influence genre has in student learning and genre use, his research points to how the theory itself supports researchers mapping practices over time, practices that ultimately shape and guide our expectations of use broadly.

In reaction to Kitzhaber's work (1960; 1963) regarding developing an FYC course, Russell (1995) argues through AT for reforming general writing skills instruction, while maintaining a central course (p. 53). Referring to Engeström's articulation of AT, Russell notes that AT offers focus on how change occurs in systems based in the concept that **individuals' minds never accomplish anything alone**: "consciousness is not individual but intersubjective, networks of systems mediated by our tools of interaction" and change is made dialectically, or through joint activity (p. 55). AT provides a more

complex perspective of learning and development: people do not simply get better at writing, they interact with people, tools, and genres over time to apply in new contexts (p. 56). The importance of AT in the context where people also use terminology like "learn to write" or a course will "improve your writing," helps, I think, more accurately, realistically, and complexly show the writing process (pp. 58-59). He argues against courses that only teach strict genres, noting that a strict adherence to particular genres only points to one part of the activity system, the mediational tools, and not other pieces that create and transform and shape genres (p. 65). Russell's focus on AT points out the ways writing often becomes invisible in courses (WAC, WID, etc.) because it is not a primary objective in these courses, but rather embedded in tacit knowledge of the discipline (p. 70). Rhetoric and writing scholars' use of AT points to its function as a way to parse out how students, workers, and more use the tools around them to develop communicative habits within the genres they practice, but broadly positions AT as a way to uncover and identify why and how we come to value tools as mediating objects in our lives.

Activity as Mediated by Tools

Specifically, I find Swarts' (2013) articulation of how tools transform work useful as applied to technical communication to show how AT acts as a guide for studying how tools mediate motivations and actions. Swarts explains how tools mediate the work of technical communicators, shaping and informing it: as tools have different affordances, the rules of an organization must change to accommodate these new affordances (p. 147). Swarts notes that technical communication as a field has always been deeply mediated by and involved with tools, technological and otherwise (p. 148). Using references from AT through Vygotsky, he argues that tools can encompass language and writing and that these, too, mediate social behavior, structure, and interaction (p. 149). Specifically, he notes, "to say a tool shapes an activity means that with a tool, one sees and approaches that activity differently than without" (p. 149). Tools "impose a structure on them," in mediating them (p. 149) and shape not only the appearance of action, but also the "ways in which others can use it" (p. 150).

Swarts warns though that understanding the causality or usefulness of tools is not always easy, but AT can be a helpful framework by encouraging people to question: "How does a person formulate an objective [or motive] and recognize the value of a tool for meeting that objective?" (p. 151). He also uses a piece of ANT, in that tools "develop historically, by connecting with and incorporating other tools" (p. 151). By considering this understanding of tools, Swarts explains that tools contain transmittable social knowledge, which informs both external and mental/internal function (p. 152). He argues that by considering AT and ANT, we might ask the following in order to understand how to answer that question:

1. How do tool's impact a user's understanding of a task?
2. How do tools mediate social relationships?
3. What is the tool's design history? And how does that history inform its use?
4. What other tools are connected to the one in question? (p. 150-154)

Swarts positions tools as transformative, mediative objects in a larger activity system. In this way, we can orient mobile, networked devices as only temporarily aligned with the motivations and objectives of a person or organization, so studying their history, use, and mediation can help developers understand why certain software or tools were adopted, how these tools mediate at the organization, and how making changes can be made more useful when understanding the shifts that may occur when changes are made within a larger network (pp. 160-161).

Activity as Layered

Along with activity theory's close connection to tools, I find the definition of activity as layered especially useful to connect to mobile user research as it helps distinguish between our ultimate goals through activity and our preferences and motivations for attaining those goals. Activity as a tiered concept means that it is built through both individual series of actions and operational features informed by context, meaning that researchers can drill down and analyze broader activity through its components, which I think helps us analyze both the device and interface, along with the social engagement qualities of the technology (Sun, 2012) (see table 2.1).

Table 2.1: A visual reference to describe activity in three levels: activity, actions, and operations, recreated from Sun's (2012) *Cross-Cultural Technology Design*.

Levels of Activity	Governed By	About
Activity	Motive	Why
Action	Goal	What
Operation	Conditions	How

For instance, if we consider the broader activity of part of this system to be users wanting to obtain information on a local organization, we might find that the action(s) in this case are akin to downloading the native application and the operation and the variety of microinteractions within the application itself. While the non-profit organization would like this system to be linear (making for lots of downloads and usage of the application itself), there can be breakdowns throughout that system of activity, which would be areas to then research further. I think this example shows that activity theory is a descriptive, framing tool, not a predictive model for research. Activity theory combined with a critical perspective of space as constructed by people and as a mediating force in nature, I find, encourages more thorough contextual research methods in mobile experience design than relying on methods that may prioritize expediency or indirect methods of user research.

Particularly, I've found it beneficial to combine this layered concept of activity with Certeau's (1984) vision of space as practiced place to ground motivations and goals within physical settings. Certeau's iteration of space is tied to often habituated, mundane, and ultimately transgressive activity of users who carve out walkways through their own practices. Certeau offers that places, built by engineers and city planners and more, become a space when people walk in that area. Certeau argues that walking, the normal and everyday actions of people filtering through places and making them lived in,

"affirms, suspects, tries out, transgresses;" as such, walking shapes the space by sometimes subverting it, and it is through these actions that spaces change and spaces are formed (p. 99). In this way, he argues that "space is a practiced place," a locale created by the embodied, lived experiences of the combination of people and material objects and conventions in that area (p. 117). These everyday practices effectively *transform* places into spaces, which I find acknowledges the seemingly mundane but nevertheless innovative and transgressive practices of people. Certeau notes that these moves are transgressive in the sense that we have the opportunity to walk outside of the predetermined pathways developed for us. And these pathways need not always be conscious to users, but are often simple innovations that etch out new meaning within physical spaces.

There are many of perspectives of place and space within and around our field, and some of these theories prioritize space as tied to our social and relational ties (Lefebvre, 1991) in distinction from space as limitless and boundless. Rice (2012) catalogues several theories of space, including Lefebvre's work, alongside work that positions space as developed through memory or story (Perec, 1974; Barthes, 1979). Although these theories in many ways run parallel to one another, Certeau's space as practiced place asserts that users navigate, weave through, and subvert the bounds of rules and tools that order our lives. It is through practices and use that city dwellers develop a space. In this way, I find it a fitting tie to activity theory, while supporting the study of activity that crosses systems, networks, and locations. Including space as practiced place as a key element to how contexts are defined in AT works to support Engeström's (2009) claim, which was echoed again in 2016, regarding the expansion of the theory itself: "In social production and peer production, […] Processes become simultaneous, multidirectional, and often reciprocal. The density and crisscrossing of processes makes the distinction between processes and structure somewhat obsolete" (p. 309). What Engeström is referring to here is the multiplicity of simultaneous activity across systems and mediating tools and the muddiness of identifying structural processes in this kind of activity. As such, space as practiced place offers grounding and some stability in the sense that spatial construct is defined by user behavior and the pathways they develop though routine. When we track the routine pathways users carve for themselves, we can identify the connections, motivations, and breakdowns that exist across these systems. Further, applying this concept of space as practiced place, in combination with activity theory to mobile experience research foregrounds 1) valuing local user innovation, and 2) observing not only the motivations and conventions and histories that inform activity, but how mobile activity is informed by material space, whether the space of a bus, a sidewalk, a home, a grocery store, and more, and 3) acknowledging and researching the sometimes meandering, mundane, sporadic uses of mobile technologies throughout a day, or in other words, its embedded nature as a flexible mediating tool in our lives that can intersect our lives and interactions across space and through time.

Limitations of Activity Theory

I don't want to suggest that this combination of activity and Certeau's space framework is not without its limitations in reference to mobile experiences. For example, I'm not sure

it can track collections of power or impact across networks as well as, say, Actor-Network theory (ANT). Activity theory, as it stands now, is very tied to certain factors that make up an activity system (e.g. rules, community, object, actions, tools, outcomes, etc.). And ANT, unlike activity theory, presupposes that the human and non-human objects, or actors, that make up a network are symmetrical, meaning that in some cases, non-human actors can have more power or *impact* in a network than the human actors. In reference to design, for example, in a study of mobile media and disaster response, particularly in response to Hurricane Katrina and the London Bombings, Potts (2009) traces some of the main interactions on sites used for crises, like Flickr, through Actor-Network theory, rather than activity theory. She found that crisis sites are often inflexible, meaning users can't discuss the data, users can't add to or modify the data, or cannot triangulate the data they've amassed. Potts calls on ANT to help "map the existing information, see how it is spread, and from that, inform the design of systems to support such patterns of information-sharing during times of crisis (Potts, 2008)" (p. 284). In this way, ANT is a way to identify actors and to trace their impact across a network.

Potts specifically documents and identifies the patterns across important actors in the network, some of which she terms "moderators," who help collect data and pass it along to others. So, in this instance, ANT is an incredibly valuable framework for tracing the interactions between social media platforms and specific users over large sets of data that can inform our design practices. ANT has a place in documenting the spread of information, and can be particularly helpful in social media research (among other areas), but activity theory provides a contextualized perspective of use that I find helpful in assessing mobile experience design. Instead of studying in process, emergent practices or connections across actors, activity theory is more suited as a descriptive framework for studying multiple levels of context. And although activity theory has been critiqued as defining networks as more stable than they really are in actuality (Spinuzzi, 2008), when combined within a space-oriented framework, activity theory is more so positioned not as a rigid model but a lens for studying the *topography* of mobile experience and use across the lived experiences of users and the spaces they create. As such, this framework helps me ground my own observations of users both within a broader communicative landscape and also within their own physically situated experience.

Notably, Spinuzzi (2008) argues that there are similarities in these two models. They both study networks of actors and actants, but, "Unlike actor–networks, activity networks assume asymmetry, casting nonhumans as mediators or objects of labor rather than as actants," in this way tools are meditational objects rather than actants with what ANT describes as power. Spinuzzi goes on to explain that by AT theorists interpretations, non-human actants have some form of acting power through mediation only:

> "Cables don't have interests – they are tools meant to mediate human communication or objects to be transformed through sedulous human labor. Switches don't yearn to continue running – they are materials designed and maintained by collectives of workers. Dogs are unpredictable organisms that may become the object of activity if they flee or bite. In sum, activity theorists tend to

see humans as actors and nonhuman artifacts as crystallizations of human activity" (p. 44).

Overall, Spinuzzi argues that AT weaves and positions activity as evolving from singular units, whereas ANT splices, or things exist because they continue to work over and over through similar pathways. In other words, the more connections within a network the stronger that network of relations is and exists "through accretion rather than development, associations rather than evolution" (p. 66). AT, instead, develops activity over time and the mediation of it through people and objects: "Actor–network theorists are much more concerned with ontology and find abstractions such as concepts to be quite untenable as ways to address that problem; they are more concerned with the associations that constitute each phenomenon" (p. 67). Ultimately, while these models study similar activity and structures, they position human activity very differently, AT as central to studying an activity system and ANT as only a part of a larger network.

Nardi (1996), too examines AT, situated action models (SAM), and distributed cognition models in relation to technology design and considers the benefits and limitations of each. Nardi argues, adequate design decisions, designers should study context to "discard irrelevant details while isolating and emphasizing those properties of artifacts and situations that are most significant for design" (Nardi quoting Brooks, p. 70). Situated action modeling focuses research on the real-time actions unfolding in contained and seemingly stable environments (e.g. grocery stores): "situated action emphasizes responsiveness to the environment and the improvisatory nature of human activity" (p. 71). Subsequently, research highlights the less stable actions in these environments, so rather than looking for frequent patterns of behavior, SAM focuses on the improvisations (p. 72). This model helps researchers focus on the ways the environment shapes behavior in small, one-time improvisations (p. 72).

AT, in distinction, according to Nardi is defined by the object; SAM is defined by an abstract concept rather than a specific motivation (p. 79). In AT and cognitive studies, activity is transformed by the object, but in SAM, activities are unique to certain situations or environments, focusing more so on what AT would call operations and actions rather than an activity system (p. 80). Although cognitive approaches and AT have much in common in regard to focusing on mediation and stable artifacts, AT tends to perceive technologies and humans as unequal: tools mediate, but humans create activity (p. 86); where cognitive approaches view tools and humans as equivalent (much like ANT). Nardi argues that of the three models, AT provides a more detailed approach for talking about users' "activity in meaningful subjective terms and gives the necessary attention to what the subject brings to the situation" (p. 90). Although Nardi doesn't include ANT within her analysis, she still points to some of the same limitations and benefits of AT as a guiding framework.

I think it's also helpful to look at Pflugfelder's (2015) argument regarding mobile technologies and the usage of ANT to show that mobile devices and platforms are active agents in making change in society. In his work, and by Latour's definition, non-human objects like cellphones and emails and app can act as players with agency in networks.

Furthermore, Pflugfelder not only gives agency to cell phones using ANT, but names humans that use cell phones a kind of hybrid entity, a human and non-human hybrid, changed by and different from humans without cell phones. While we could debate the implications of a post-human or hybrid kind of entity within networks, what I find useful in Pflugfelder's interpretation is that he points to the ways humans are changed—their contexts of use, function, and purposes—by and when using mobile technologies. In this way, ANT acts as a kind of tracing methodology that assumes an inherent push and pull across humans and non-human objects in terms of power within a network. Activity theory, in distinction, is much more heavily influenced by humans and their actions as the source of how systems function. Subsequently, AT cannot track power in the ways ANT can, nor does it make the same assumptions about human power and non-human agency. As such, AT works best as a descriptive model for assessing use, motivation, and the influences of other people, tools, rules, and conventions in systems of explicitly human-based activity.

Applications for Mobile Experience Design

An activity theory and space-oriented framework should encourage research that situates user activity through multiple, qualitative methods that account for actions, innovations, and contradictions throughout both time and space. This kind of research should conceptualize mobile experience design as distinct from web design, consider device constraints (e.g. battery life, service carriers, etc.) when designing mobile software, prepare to design for multi-screen platforms before developing software or a mobile site, and approach mobile applications as crafting experiences over simply offering content (Hinman, 2012; Mendoza, 2013; Banga and Weinhold, 2014; Verhulsdonck, 2015; Nagel, 2016). User experience and usability practices that rely more heavily on universalized design principles and indirect user research that favors expediency may be less helpful in contextualizing mobile experience design across time and space[10].

Because mobile experiences are often found within short-lived moments throughout a day and across a series of spaces (Bentley and Barrett, 2012; Buck, 2016), our research practices should be continually reshaped to document and analyze these "quick bursts" of use in as close to real-time as possible (Bentley and Barrett, p. 29). Part of the difference in mobile experience, too, is found within the device and the carrier; in other words, new aspects of the devices (e.g. operating systems, device size), combined with users' shorter attention spans given towards phones (typically), carriers, signal strength, etc. makes for a very different kind of mobile experience (Mendoza, 2013). In order to account for all of these elements, user experience practices for mobile needs to be situated in real places and locations, rather than in only maps or virtual reality: software, sites, and applications should be assessed and evaluated in physical locations for observations and interviewing (Bentley and Barrett, p. 17).

Additionally, we need to continue assessing general mobile user behavior and practice (e.g. what mobile sites and applications do users find themselves using most

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[10] I find it imperative to build for design practices, procedures, and models that are flexible enough to account for future innovation.

often? What devices do people use throughout the day and why? At what times?) as a basis for conceptualizing how various sites and applications will fit into people's lives. Particularly because I work with native applications and mobile sites (and there are quite a few steps that are involved in downloading an application, for instance, making it less likely to happen if the application itself isn't useful), it is incredibly challenging to build a useful and ultimately successful and effective application when target users general use, experience, preferences, and motivations are not studied preemptively[11]. Bentley and Barrett (2012) offer that qualitative-based research—interviews, photo logging, diaries, and home tours—provide a perspective into real human experience that can support development stages (Bentley and Barrett, p. 21). But as I've mentioned, mobile data is not always easy to record as highly contextualized user behavior is usually not "directly observable" by researchers—and are so engrained in our lives that we may not remember to explain them in an interview—or so short, that they are difficult to recall (p. 35). To alleviate some of these challenges with mobile user experience research, I believe that a framework grounded in activity and space reinforces, for instance, the call for a combination of using recording software to visualize daily use (sometimes called a probe),[12] observational research methods, diaries, videos, or applications that track location and use, for example, to provide support for stimulated-recall interviews and surveying[13] (p. 35). As such, we might work to incorporate mobile technologies in our research for data collection. For instance, Strantz (2015) suggests that studying data collected by mobile devices, images, sound, GPS-information, etc. in relation to other artifacts (in this case, student writing), offers a "contextual, localized view of research" when these localized data points are connected to collected artifacts or other methods, which I believe is the kind of research that speaks to this framework of space and activity (p. 174).

Largely, an activity-space-framed methodology speaks to research design that supports in-context data collection and contributes to the following: 1) Encourages a holistic perspective of mobile user experience that attends to local patterns of experience, space, and contextual factors through practices that orient mobile user experience as distinct from web experience; 2) Highlights embodied experiences rather than pre-determined tasks of mobile software or a mobile site; 3) Shapes designs based on network providers and the materiality of devices and their constraints (e.g. battery life, GPS accuracy, and more); 4) Calls for researchers to preemptively assess user behaviors and mobile software and communication uses and iteratively negotiate them throughout new designs; 5) Acts as a flexible guide for studying interaction design across space that can be extended as needed for newer technological innovation. As such, I've found that this framework is valuable for situating use and motivation within a communication

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[11] At least with the organizations I've worked with, they often don't feel they have the resources to study this kind of behavior, but often a fairly simply survey is enough to build a kind or prototype to test with different kinds of users before creating an application or mobile site.

[12] Probes refer to having users download software (in some cases a prototype version of a site or application) that records data and task usage usually of a particular application with the participant's consent, allowing developers insight into daily use of applications.

[13] Usability practices for mobile experience need to be tested *in context*, out of the lab, with strong and weak service connections, and in contexts of use (Bentley and Barrett, p. 100).

landscape while building interfaces that are sustainable through different technological advancements. The third chapter expands upon this conversation by examining my observations of the organization and participants I worked with as a model for applying this activity and space-informed framework.

Chapter 3 – Assessing Habits, Emotions, and Triggers to Support Community Engagement

As I mentioned in chapters 1 and 2, my work is grounded not only in a space-as-practiced-place-informed articulation of activity theory, but also community-based research practices. Activity theory calls for in-depth and deep collection of observatory and descriptive data, and when we tie this to Certeau's concept of space, I find we can add more in-the-moment observatory methods into our studies. While these kinds of methods allow for descriptive data of in-use and contextualized use of mobile applications—when a user goes about opening up an application, what were they doing right beforehand, what triggered their use of a particular application, etc.—AT does not inherently speak to how this data should be conveyed, used, and applied with research participants. Subsequently, adding a theoretical branch to the methodological framework I described in chapter 2 that considers how to interact with research participants was vital to my project. When we look to UX articulations of how user data should be used and collected, many of these interpretations of observatory and descriptive data-collecting methods are couched in corporatized contexts, leaving less guidance for how to work most productively with community organizations and members. In my case, I was working with an organization that had different goals from most corporations: a focus on extending *presence* in their community members lives and learning from this research to build sustainable community engagement strategies with their application over developing a brand image, or marketing and selling a product or service. Subsequently, I found it fundamental to examine specific community-based research (CBR) practices that frame ethical, active participation of users that can be missing from conventional UX guides.

For instance, Portigal's (2013) user experience-grounded work on interviewing users argues for helpful understandings of interviewing, but has some limitations in reference to applying findings to community-based contexts. He argues that compelling insights are created, developed, and prompted by creating opportunities for user stories. His work was developed for UX team leaders or practitioners as a guidebook for conducting better interviews, particularly those involved in product development. Interviewing is positioned as an iterative method that can help UX designers develop products that people will need or find useful. Portigal calls to create opportunities for stories because then participants are sharing valuable data that provides context for their lived experiences. By asking participants to share a sequence of events (e.g. how do you make coffee?), examples, exceptions to processes, expectations of products, or relationships across different products (such as various technologies), users can share valuable, categorical data for designers and developers (p. 90). Portigal argues against or rather warns against viewing interviewing as taking *individual* responses and incorporating suggestions wholesale. Instead, interviews should help clients and researchers "reframe" or position new directions or new opportunities for products or technologies based on categorizing larger amounts of individual data points. These sorts of interviewing techniques can be incredibly useful, but what Portigal's work fails to consider is the funding, people, and equipment required to enact these often large-scale

interviewing methods. Additionally, participants are not described as being active members in the research process, nor did this work attend to what participants could take away from the interviews beyond monetary incentives. In other words, research participants were not given an active role in using or applying the information they shared in Portigal's work. This is just one example that while has some productive ways to measure and assess user experience in the moment but is also limited in its application to community-based organizations. To that end, I find it imperative to discuss the community-based research practices and concepts that, along with the methodological framework discussed in chapter 2, informed my methods and interactions with my research site and participants before discussing the method and findings of my study. Specifically, first I examine definitions of communities, CBR practices that support research participants, then I describe my study site, participants, and context, and then I examine some of the initial findings and perceptions gathered in interviews and surveys. I close the chapter by summarizing some of the concepts shaping mobile use, particularly the habits, emotions, and triggers that informed sustained use or encouraged breakdowns in the communication ecology I studied, which is discussed in more detail in chapter 4.

Defining Communities and Community-Based Research

When examining community engagement, I find it important to first identify what we mean by the term community. And alongside this thread is the question of the rhetors' role in community work. Defining community has never been simple or consistent, but at least within the scope of this project, I've found that combining or perhaps layering two definitions of community most accurate and useful for my purposes. Grabill (2001) notes that not only is community a mutable, but also a difficult term to define, it has been defined in a variety of ways across different disciplines. Referencing several different scholars, most notably Cohen, Grabill argues that a community is a symbolic, constructed, relational system that defines boundaries, values, norms, and identities (p. 90). While Grabill doesn't use the term assemblage, I understand his interpretation of Cohen as such: an assemblage of relations across objects and people that define boundaries, values, and norms. What I think is not as explicitly stated within this definition is the question of place within our concept of community. As such, I find layering Giuffre's (2013) definition of community onto Cohen's definition useful.

Although Giuffre argues against defining communities by *only* location (and while I don't think Grabill or Cohen did that), she still maintains the importance of constructed space in how we define communities. She notes, "merely existing in the same local space does not guarantee that individuals will form a cohesive community," (p. 197); "instead of thinking of neighborhoods or other geographically bounded spaces as communities […] it might make more sense to flip the equation […] communities are, in reality, broad ranging networks of strong and weak ties with people from a variety of settings" (p. 198). So if I were to extend my own definition of community, based on this intersection of theory, **communities are an assemblage of human and non-human objects connected through weaker and stronger ties that are not *necessarily* geographically bound and are defined by values, boundaries, shared materialities, and relational networks across networked, digital space and physical space**.

So if a community is a relational, constructed and symbolic network, I want to define community engagement in reference to organizations and community members as the processes and practices that build consistent, strong ties with community members. While sometimes community work is couched in university relationships with outside partners (Cushman, 1998; Flower, 2008; Grabill, 2001, 2007, and 2012) and the tensions and challenges of that kind of work, I am referring to the practices that organizations employ to interact with community members, an activity that is rapidly changing as communication platforms emerge and evolve. In many cases this requires building community literacies regarding a particular event or technology, but I'm defining this as a term that encompasses the plans and strategies employed to broadly and consistently interact with a larger community. While this definition may sound neat and tidy, it is not. Community engagement is an often messy, difficult, and evolving endeavor for organizations and researchers alike.

Completing the Power-Knowledge Loop

Within this messy community research, it is our responsibility as community-based research scholars to provide opportunities for our research partners to actively participate within the research process rather than be treated as objects to be studied. I draw from Flower (2008) and Stoecker's (2009) interpretation of community-based research as purposefully engaging participants in our research for their benefit as well as our own. Specifically, Flower notes that when we engage in research with communities—she's referencing community in relation to community literacies specifically—that researchers are called to work *with* participants when working in community-based projects as opposed to research *on* participants (p. 10). Community-based research practices should encourage us as researchers to adhere to the idea that our community participants and partners should have active voice within the research process, rather than simply acting as subjects to be studied. Stoecker argues that when we more actively involve participants in our research, we work to give participants back power. In our relationships with participants, we as researchers are often the ones with more power: CBR practices support giving some of that power back through a variety of ways. One of those ways that's particularly important to me is offering participants something *useful* to them through the research process (refer to section "Research Partners and Relationship" for more information on how I enacted this in my project). Stoecker asks of community researchers, "If we can train community members and organizations in the skills of knowledge production, and supply the relatively inexpensive means, we can support their access to the power–knowledge loop," (p. 398). What this means is that when we, as experts in certain fields of study, enter into or end relationships with participants, they should have some means to not only use the knowledge developed through research, but build from it.

Although Stoecker's work predominantly studies if proposals defined as community-based research (CBR) are actually enacting CBR practices, his definition of CBR is what is particularly valuable to me, and what I tried to emulate in my own work, alongside his discussion of the power-knowledge loop. Stoecker notes that CBR, a form

of **action** and **participatory research**, requires both of these aspects to be successful. Through action and participation, productive change occurs through research. Participants are left with some positive, actionable resource or outcome, and secondly, like Flower, Stoecker argues that community members should be active participants; "In looking at who participates in CBR, the CBR model says the most crucial participants are community organizations or community members (p. 392). In order to study how involved community members were, Stoecker quantified how often members were involved in each stage of research, noting that many were only involved, if at all, during data collection and rarely were they involved in defining research questions (p. 393). And while around 30% were involved in data collection, only around 20% involved participants during the data analysis stage (p. 394). Ultimately, he notes that many researchers who defined themselves as community-based researchers in the proposals did not adhere to two key tenets of CBR: action and active participation of participants (p. 394). Stoecker provides that partially the issue lies in how we teach knowledge acquisition and exchange societally: **knowledge is tied to power and maintaining power**, but knowledge *exchange* is only typically produced and circulated by small groups of people (e.g. academics) and when that knowledge is provided for others, it can be challenging to apply. Subsequently, Stoecker argues for researchers to provide opportunities to community participants regarding knowledge production of their own:

> "If we can train community members and organizations in the skills of knowledge production, and supply the relatively inexpensive means, we can support their access to the power–knowledge loop [...] When people engage in designing, carrying out and using research, they enter Foucault's power–knowledge loop. By participating they learn the process of knowledge production. By acting on knowledge they produce power that in turns informs their knowledge production" (p. 398).

When we control research and do not allow members to participate, we do not allow them into the process of the knowledge-power loop and continue oppressive research practices (p. 398). Stoecker's approach informed my own position when working with participants. I involved key participants: asking for their feedback on survey questions, seeking their insight on what they wanted out of the study, and providing dissemination materials that we discussed could be best utilized by the organization and its members as needed.

Stoecker provides some major ways to think about our relationship with participants, but I want to examine Lather's definition of validity as I find it important for framing how research participants come to fully participate in the power-knowledge loop Stoecker describes. In 1986, Lather pointed to the limitations of typical definitions of validity in positivist empirical research (p. 63). Throughout her work, she draws from a guiding principle of neo-Marxist Antonio Gramsci to forward making social change within research, not just studying or describing "the researched," and instead *empowering* research participants, what she calls a kind of "emancipatory theory-building" practice (p. 64). Validity, traditionally, refers to trustworthiness of data but "paradigmatic uncertainty" in social science research requires that we "operate simultaneously at epistemological, theoretical and empirical levels with self-awareness" (p. 66, quoting

Sharpe and Green). Modifying construct validity and face validity for more presence and flexibility towards participants, Lather argues for *catalytic validity* (a term originally developed by other social scientists) wherein the ultimate goal is for participants to be able to use research results, data, and the process for their own transformation: "respondents gain self-understanding and, ideally, self-determination through research participation" (p. 67). As such, we are guided to involve participants throughout the entire research process to democratize knowledge and to help guide participants to see issues from a new perspective (p. 73). In this way, Lather and Stoecker's arguments do map onto one another, but I find it important to incorporate Lather's specific understandings of validity into my own research stance. Based in Lather's work, I encouraged participants of my research site to shape and guide the research processes based on their feedback and insight across the entire study as they were willing. Additionally, I was careful to collaboratively discuss what forms of data, information, and findings would be most useful for them so that they could use the findings of this research as they saw fit.

Lastly, I want to point to Cushman's work influence on my research as framing what community-based research can do for participants and how. Part of Cushman's argument is that civic participation and social change can happen in **small, everyday ways**, particularly when tied to literacy and language: "we need to take into our accounts of social change the ways in which people use language and literacy to challenge and alter the circumstances of daily life" (p. 12), and it's that part of her argument beyond her general focus, that really draws me to her work. By researching the sometimes small and mundane, but nevertheless important practices of community members, we can start to understand how to serve these communities best. Cushman argues for building from participants' own literacies and language as a start. In other words, the literacies that she wants to understand and promote are those that already exist: "I need to emphasize the difference between missionary activism, which introduces certain literacies to promote an ideology, and scholarly activism, which facilitates the literate activities that already take place in the community" (p. 13). In order to work with community members, we must maintain focus on their needs, values, and wants first, while still maintaining our research goals. Because of this call and other arguments in this subsection, I explicitly asked participants for suggestions in what they wanted from this research or what they hoped it would help them achieve. I gave them my ideas about how I envisioned my research helping them and others, but what did they think? And I actively worked to combine our ideas together as I moved forward through the study. We decided that building strategies they could follow and build upon would be most helpful. Additionally, I worked closely with participants as I encouraged them to participate as they saw fit as I constructed interview and survey questions for community members.

Research Site

My research site is network of technologies, people, developers, community leaders, community members, devices, media, users, genres, and conventions revolving around a large religious organization in Cincinnati, Ohio. The organization currently has over ~2000 active parishioners and reaches out to that community predominantly through in-person communication, email, newsletters, posters, fliers, a mobile application, and their

website. I chose this research site because it is an integral part of its wider local space and one of the few community-based organizations in that area that had just recently developed a native mobile application. I had heard from a few members that the leaders were curious how to increase user engagement of the application, so I contacted them to collaborate on possible future research. I conducted a series of initial interviews with key staff members and followed this by conducting a broad survey of the community of members and user interviews to allow for a fuller perspective of the communication ecology and activity system. Given that I studied the activity systems of communication and community engagement practices, particularly mobile ones, I incorporated several research methods to capture an ecological perspective of the technologies, communication practices, and perspectives across this system, as discussed below.

Research Partners and Relationship

The participants in the first stage of the study were three key staff leaders of the organization itself. One member was the head of the organization, another participant was a key business developer and was primarily involved in developing the mobile application for the site, and the third participant was the communications director of the research site. Each participant was a native-Ohioan and a long-standing member within the surrounding township and actively involved in the research site itself. A key staff leader of the organization requested anonymity, but I found their responses vital to the context of this entire inquiry. However, it did require me to censor much of the history, context, and visual components of this project overall (e.g. responses, screen shots of the application, etc.), so within this chapter and others, I have censored aspects of this study to best keep this staff member's anonymity. The non-profit works with over 10,000 people in the surrounding area with ~2000 active members and ~4000 total members. All three participants had years of experience with the non-profit and most had over 10 years of experience in their given field. Throughout the study, I actively involved my main contact points, the communications director and business developer, in my research by collaborating on research questions, research outcomes, and deliverables that would be productive for them. Considering Stoecker's power-knowledge loop, I specifically encouraged the key partners to collaboratively adjust our research directions by involving them in the process as I constructed survey and user interview questions. Additionally, I worked closely with these partners to ultimately identify the best forms of deliverables so that they could most effectively use the vast amount of data I had collected. Through negotiating different options, my partners decided that a short-form report would be the best way for them to use the survey and interview data. In this report, I worked to meet the organization where they were in terms of their resources: subsequently, I emphasized low-cost and minimalist changes and strategies the organization could employ to meet some of the major issues I uncovered throughout the survey and user interviews.

In the second phase of the study, I sent out a survey to an email listserv of members of the organization and followed up those surveys with user interviews of the organization's mobile application and other communication avenues. There were 290 participants who started the survey with 266 completing the survey with the option to skip questions. The majority (~26%) of members who took the 2017 survey described their age category between 55-64 years old, with ~21% describing themselves as 65-74, ~21% as 35-

44, and ~22% at 45-54 (n=174). The survey was sent out June 2017 with a follow-up email sent to members that did not open the first email in July 2017. I do want to note that it's difficult to assess the statistical validity of the survey as it was sent to 4351 members, but I came to find that the list provided included emails from people who were no longer members of the organization as well as multiple emails per registered household. The organization has approximately 2000 active and participative members though based on how many people attend events throughout the year and donate to the organization. While challenging to determine the relevance of the survey statistically, I did still find the data helpful in showing larger trends in communication preferences and breakdowns.

Throughout August and September of 2017, I interviewed members as a follow-up to the survey, specifically over their use of the mobile application. Interviewees were recruited using the survey itself, allowing for both contextualization and clarification of the survey results. Interviewees were contacted through email and then scheduled for interviews if they consented to further communication within the survey. Of the 26 members who gave me their contact information that they would be willing to be interviewed, 11 members were available to be interviewed (see table 3.1).

Table 3.1: Participants interviewed and surveyed.

Research Methods	Participants	Timeline
Semi-structured Interviews with organization leaders	3	March-April 2016
Survey of organization members	266	June 2017
Semi-structured follow-up interviews with participants who completed the survey	11	Aug.-Sept. 2017

Research Methods

I found it most useful to develop phases where I was first informed of the larger goals of the organization revolving around the mobile application and follow up this information with a wide scale survey and user interviews. AT encourages methods that allow researchers a broad perspective of an area. I decided to start this project with my initial 3 interviews as they allowed me to work closely with key members of the non-profit, religious organization, giving me the opportunity to work with community members and organization members to see how the organization's leaders goals were being enacted and where, if at all, members were experiencing innovative breakthroughs in their use of the communication platforms and where they were experiencing any challenges, blocks, or breakdowns in the communicative process. Additionally, I felt it necessary to draw from the organization's knowledge and experience first, gathering stories, narratives, and explanations from the participants before involving my second stage of methods, a wide-scale survey and follow-up interview of organization members regarding both the communication ecology and their use of the mobile application developed by the organization.

Initial Interview Questions

I conducted three, initial semi-structured interviews with leaders at the organization. This series of questions revolved primarily around strategy and community engagement, technology design and development, and questions of mobility and embodied practice through mobile technologies. I conducted semi-structured interviews to allow for more flexibility with the interviews, particularly because my goal was to engage with the participants' views and story, not necessarily to strictly compare stories across different participants.

1) How would you describe your organization and the services they provide to the community?
2) How would you describe your position in the organization?
3) How would you describe the population you work with or for?
4) Do you have a formal strategy for engaging with the community? If so, how would you describe that strategy or strategies?
5) In what ways do mobile technologies (e.g. mobile applications that you utilize in unique ways, mobile applications that you create, etc.) impact your community engagement strategies?
6) Why did you decide to use mobile technology as part of your community engagement strategy?
7) Describe for me how you developed this mobile application (e.g. how was the idea conceptualized, how did you decide to create the application, what software did you use or what company did you use to create the application)?
8) What companies or developers did you work with to create the technology?
9) Did you get feedback throughout the process from other organization members; if so, how? What kind of feedback did you receive?
10) Could you describe the development process of creating the mobile application?
11) What challenges did you encounter in the development process?

Through these questions, I hoped to uncover 1) how the different staff members defined key community engagement goals of the parish, given that their roles were all different at the organization, 2) how the staff members perceived the mobile application impacting their community engagement goals or plans, and 3) how they developed the functionality of the application itself.

Findings of Initial Interviews with Organization Leaders

Through my interviews with three key staff members at this research site, I realized that through an AT framework, I started to encounter just parts of different mediated activity. But through these interviews, I was able to see the boundaries of this larger network of activity in relation to community engagement. That said, these first interviews left me with more questions than answers. Subsequently, I decided to expand my research to hear from users of the application, non-users, and those who used other communications channels the organization offered overall. Beyond the process of expanding my research, I want to shift focus to what I found about mobile communications and technologies through this initial interview process. How did this organization build the application? What were some of the challenges of creating and sustaining this application? And,

lastly, what did the research participants feel were the affordances of mobile technologies?

Developing the Mobile App

The staff research participants expressed a quick and relatively painless transition in developing their native mobile application. The staff participants explained that the application was developed over the course of several weeks conceptually before a mobile app creator team in Cleveland, Ohio created the application. The application was based on other applications this team had created for similar organizations in the Cincinnati area. Partially, this could be very representative of the processes and rationales that organizations go through when working with a programming team to build an application. In many cases, applications are outsourced and consequently are dupes of pre-existing applications, as noted in figures 3.1-3.2 below. For example, on the left below is a template advertised to parishes broadly that can be customized slightly in terms of branding and functionality. Note the similarities in terms of function: both applications include a locations tab, support or giving (donations) tab, prayer or Bible resources, and other communication channels, such as audio-based or video-based options to review sermons or other services of the parish. While these applications are not exactly the same in terms of design, navigation, or branding, many applications developed for religious organizations are template-based like the example on the left, rather than customized or localized to a particular organization, location, or need. Although the branding of the application from my research site (fig. 3.2) does include localized imagery—photographs from around the site's campus—and colors—blue, gold, white—that match the site's broader branding scheme and certainly these moves are helpful in tandem with other research to localize the functionality of the application itself, these attempts at localizing the design of the application only seemed to not be enough to capture users' in that they made the application a major part of their habitual interaction with the organization. Ultimately, what I think is important here is that although outside developers have the capability to mimic current brand imagery and colors, these template-like applications may still not be an effective contact point for community members for larger issues of functionality—what the application can actually do or accomplish—even if it generally works well.
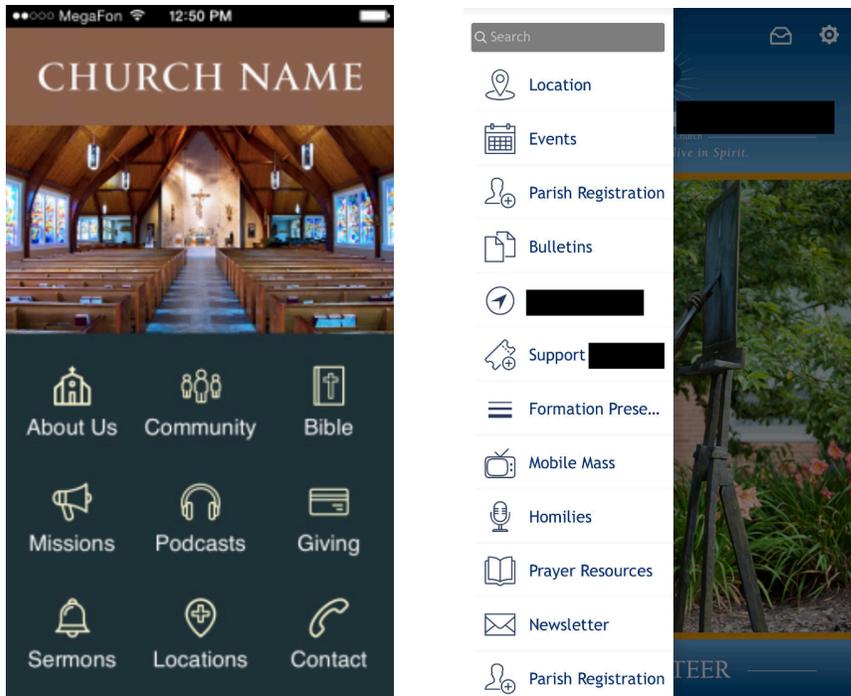
Figures 3.1 and 3.2: A template parish mobile application versus censored application of the organization I studied (right). All screenshots of the mobile applications were taken on an iPhone 7 Plus (software version 12.2).

Challenges Developing the Application
The overall development of the app may very well be representative of other organizations who have developed their own native applications. However, the main contact person working at the organization was skilled and knowledgeable in web design. Ultimately, this particular participant didn't express any challenges in developing the application, noting that the programming team the non-profit worked with only developed mobile applications, which made the process incredibly smooth. I'm unsure how representative this process is though to other parishes and organizations: I question how easily average organization members could develop apps or even make changes to an application template to fit the organizations' more specific needs.

Mobile as Constant and Efficient Presence
In general, the staff participants discussed, although in different ways, mobile technologies—and, again, specifically the application—as a way to extend their "philosophy of presence," one that extended one-on-one interactions or other media contact. In some cases this philosophy was discussed as an undergirding layer to community engagement that surpassed platform, technology, mode, etc. Simultaneously, media channels were discussed and seemingly strategized as separate entities. This makes sense, given that each platform will offer something slightly different from the rest, but it was difficult on my end to see how the "philosophy of presence" tied the channels together. This philosophy of presence was also one that was discussed through a variety of different terms and ultimately different contexts. A philosophy of presence was

discussed in my interviews with organization leaders in reference to the mobile application as:

- Allowing members to view the organization media and content more "easily,"
- Offering "consistent" content to users – essentially, if the content is in the front of the user, they will be more engaged in the organization. Participants also used terms like "constant contact" to explain how mobile communication and technologies functioned.
- Providing "access" to information to people with a "lack of knowledge" or an inability to access services from the organization otherwise (such as listening or watching Mass services from remote locations).

Mobile communication through the application is characterized as, in part, reaching people consistently and perhaps more easily than other media. While it's difficult to say if the application actually lives up to its characterization, I want to note some interesting and insightful stories my initial participants shared with me.

Several leaders at the organization noted that the application was really built to reach a mobile audience that was young and interested in using mobile devices, whether that was a smartphone or tablet. The participants explained that the app would make donating and other transactions more seamless at events, along with allowing younger audiences information to help involve that demographic more in the organization itself. I think this is a typical story, and it's not even a myth. It's true that younger demographics more readily use mobile communications and devices, but I found two components interesting: 1) while the organization hoped to engage a younger demographic (ages 20-30s), the organization doesn't automatically keep records on users downloading the application, so it'd be difficult to know who is actually using the application and why. And 2) when the organization *has* had impromptu feedback, it is that much older populations are using the application to engage with the organization services without attending the site or engaging with events digitally because they are unable to regularly attend. For example, many of the people in this population use the live streaming services on the app to engage with events that they would otherwise be unable to attend (see figures 3.3 and 3.4). Even though many of these users live less than a mile from the organization, they're unable to access the location physically due to a variety of factors including not having accessible transportation to visit the organization in person.

Overall, the staff interviews showed me that there was little planning towards how application fit into the larger goals of community engagement at the parish. The unique affordances of the mobile application were not considered beyond assumptions about specific age demographics that might be interested in the application. Along this same line, it was not clear how the staff members saw the application working in tandem with or in distinction from the other channels the parish used. Beyond these issues, it was clear through the interviews that the staff members had not considered asking users of the application or members of the organization broadly for their feedback on the app. Because these key definitions concerning what the mobile application could offer in specific and goals about obtaining feedback over time were not defined preemptively, the

application was not heavily integrated with the other engagement channels used by the parish, nor was the application specifically localized for their community's needs.
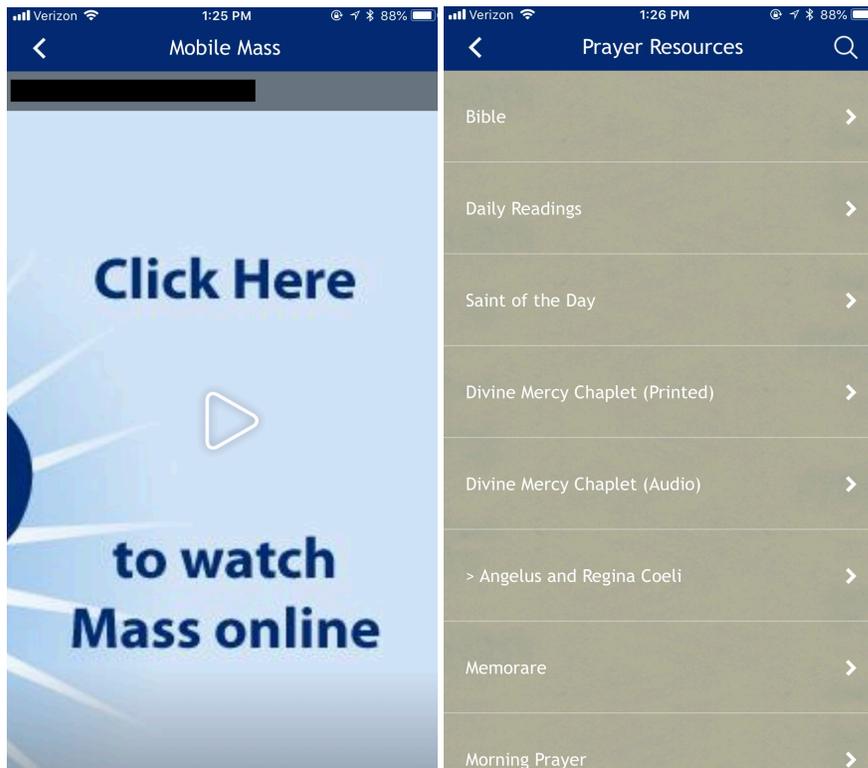
Figures 3.3 and 3.4: Examples of mobile options for accessing parish events and resources (censored).

Additionally, what this research told me was that I needed to engage with community members to more fully understand the impact of the application in the community. So, too, it's challenging to build a sustainable strategic plan for a platform or device without more information on its contexts of use within the community: speaking with current users was imperative at this point. That said, while I've found the specific interviews provided a small window into the larger activity system of community engagement with this particular organization, I did give the organization several steps that could be taken to more productively use mobile communications as part of a community engagement strategy:

- As a team, consider what a mobile application might have to offer that a mobile site or other mobile platform doesn't offer. Mobile applications are costly investments that can have real payoff, but there are other mobile platforms that may be more useful in given contexts.
- Seek feedback from community members and key organization members to when developing a concept for a mobile application. What would they find helpful and useful in specifically a mobile app?
- If an organization does seek to build an application, craft a one-year plan for the mobile application once it has been developed: what do you hope to accomplish

with the application within one year? How will you assess the effectiveness of the application?

- Blend the various communication strategies together. Communication platforms work best when they work in tandem.
- Document minimal demographic data on users downloading the application: age ranges provide valuable data as to who is using the application.
- Provide a systematized way for users to provide feedback progressively (that could look like surveys or focus groups), but I recommend also including an actual feedback mechanism within an application itself. Review feedback consistently throughout the duration of the application.

As just a start, these strategies and practices would help build more flexible, sustainable, and community-inclusive content over time.

Developing mobile communication strategies is not easy, particularly for community organizations that have few resources aimed specifically at their contexts. What I've learned is that just as challenging as this process can be for organizations, it's just as challenging to document from an AT perspective. What I've recognized is that this study is ultimately limited in that I only worked with one site, one application, and even only one mode of mobile communication. I found through my interviews that there are more of the same kinds of applications within Cincinnati developed for different non-profit organizations, all of whom used similar developers to create their mobile applications. I realized that these interviews provided only a very small perspective into the activity system of community engagement: to more fully understand this system, I needed to investigate further, interviewing the users explicitly about the application itself, while conducting a larger survey to assess the communication landscape of the organization, hence the second phase of research I conducted in 2017.

Survey and Follow-up User Interview Overview

In my second phase of research, I wanted to build upon the foundations of my initial interviews with organization leaders to identify how community members used the vast variety of communication options available to them and how mobile communications fit into this ecology of technologies, agendas, practices, and habits. Additionally, given that I wanted to highlight use scenarios as a way to document any breakdowns in the Activity System and consider space and time as well, the survey and follow-up interviews incorporated key questions that referred to time, location, and the kinds of triggers, motivations, and habits that informed use of the various communication options available to members (see Appendix B for survey questions). For example, I specifically asked the following in the follow up interviews:

1. What information are you most often trying to gather when you consult [the organization] communication platforms? Essentially, what are the tasks you're trying to get done when you consult these platforms?

2. How do you currently retrieve this information? Are there particular times of day or days of the week? Are there particular, physical locations? What do you use to retrieve that information?

I followed these questions about location and time in my questions about the mobile application as well: "Are there particular locations you most often use the application? Are there particular times of day or days of the week? Describe these settings or scenarios to me" (refer to Appendix ABC for full interview questions). I was expecting to hear quite a variety of different scenarios in reference to the mobile application, but what I found was that members had created very solidified, scheduled habits as to when they checked in with the application and why. I expected this from the other communication methods, as they are provided to the community on specific, scheduled days throughout each week, but members were not using the application as fluidly throughout the day as I believe was intended for the application. For example, many members mentioned to me that they checked the mobile application and other communication materials all at the same time as a bulletin or weekly email was released or at a specific time of the week as a kind of refresher of what they had read earlier in the week. I believe this has something to do with members mapping on their prior, scheduled experiences with the organization's materials onto the mobile application, but this also could be explained by the kind of content on the mobile application itself, which tended to be a duplication of other materials, which I'll discuss in more detail. Participants' responses have been minimally modified to remove identifying information and for clarity.

Key Communication Preferences

Organization members noted that their strongest preferences for receiving communications from the organization comes in the form of the following media or platforms:

- Weekly Bulletin – 53.73% "prefer a great deal" (n=108; N=201)
- Email (mid-week) – 32.98% "prefer a great deal" (n=64; N=194)
- Website – 31.63% "prefer a great deal" (n=62; N=196)

The rest of members used in-person communication and the mobile application most commonly before traditional print materials. While the weekly bulletin and mid-week email were described as easy to use and without severe challenges, the organization website was reported as "difficult" to use more often than the weekly bulletin or mid-week email, although a preferred method to check before traditional forms of media (e.g. fliers, posters, signs) or social media (e.g. Twitter, Facebook, and mobile application). While the majority of members do not currently consult the organization's website, their responses for wanting to use the website more regularly had a common theme: feeling a sense of engagement. For instance, the following representative response points to the pattern of engagement in reference to materials most often unused by members: "The more engaged I am with the [organization], the more I believe I would use/engage other resources." Additionally, 50.56% of members (n=89) noted preferring their laptop or computer for receiving information, to most commonly review the bulletin, with 38.06% of members (n=67) using their mobile phones to most commonly review the communication materials provided by the organization (N=176).

Overall Communication Trends and Opportunities

Across both the survey and follow-up interviews with organization members, members noted a strong appreciation for the current materials' consistency and organization. Broadly, members responded with positive impressions of the organization's communications, but did have some with negative experiences or concerns associated with three overlapping categories:

- **Duplication** – duplication of information or single-sourcing information across platforms and media;
- **Personalization** – customization of information for specific groups of members;
- **Pertinence** – positioning content as relevant to members or relevance of events, information, and content.

Members suggested a desire for information and events to be made more personalized and relevant to their needs. From a perceived limited explanations of events and a duplication of said content across most platforms, the organization has the most opportunity to engage current members through localized descriptions, categorized content, related imagery, and representation of current active members' stories in the communications materials to encourage further participation in organization activities, events, along with an even higher satisfaction with communication materials.

Breakdowns Related to Duplication, Personalization, and Pertinence
The following samples come from survey responses that offer perspective into how users were describing their breakdowns in motivation, particularly in reference to duplication and repetition of information across channels, personalization of content, and pertinence or value of content to their lives.

- "When multiple emails are sent from the school or [organization] in a week that detail the exact same information except one or two new pieces. I would prefer an email just for the new information and not a recap of something already said. It just clutters up an inbox and means people will dismiss an email because it looks exactly the same as the previous one."
- "Sometimes notices are too repetitive."
- "Looking for what I'm interested in reading about (impacting me) amidst all of the other activities at the [organization]."
- "The subject of the email should be previewed in the subject so I can tell if it is relevant."
- "Pictures help me see the breaks and help me decide if i want to read that section."
- "I dislike the approach that assumes everyone is familiar with all [religious] practices. Stating simply, "We have PEA needs" is not a way to invite members to find out about this lovely practice."

Mobile Application Responses

53.10% responded "yes" (n=94) to having heard of the mobile application (N=177) and 44.21% responding "yes" to having downloaded the application (N=95). The majority of members downloaded the application as they perceived the application as providing

"quick" or "easy" access to information, particularly details of events, talks, or other items typically reviewed on the weekly bulletin. Most often, members used the mobile application as a replacement for their physical copy of the bulletin or in an effort to retrieve more details on events that were not listed in the bulletin:

User Interpretations of Ease of Access
Many users initially downloaded the application because they thought it served as "quick" or "easy" access to otherwise tangible copies of the weekly bulletin and other information the app provides.
- **"Always with me. Easy access."**
- **"I thought it would be a good way to receive information. I receive the weekly notification from the app. I like the app (and it is very well done), but haven't really used it to access information. I could see this as an easy way to obtain information."**
- "Ease of use for smartphone apps and to receive updates regularly."
- "Easy access to information about the [organization] and current events."

Largely, members noted challenges with **navigating** through information of the mobile application: a wealth of information (a few times described as a duplication of the website and therefore unnecessary) while helpful to some was more often perceived as impeding use: 1) "There is a LOT of information. You have to click through a lot of links before you actually find what you need. Also, it is very busy in terms of color scheme and layout. Simple is best w/ mobile; " and 2) "not [sic] as easy to navigate." Members suggested making the interface more **simplistic** with an overview page of weekly events. Additionally, users expressed a desire to use the application for purposes beyond what they could do already using the website or app: creating spaces for **communication** with other members in the application:

- "[I'd use it as a] place to chat, put photos, or a place to find information quickly. What is happening now tab current events, events to kids events to adults."
- "I'm not sure if able at this point but would be nice to have a "weekly" events page."
- "I would like to be able to communicate to other commissions through the app. I would also like prayer chains to be easily acceptable via the app."

Based on the evidence from the survey and interviews, as I mentioned earlier in this chapter, I developed a short report for my partners that highlighted low-cost and minimalist changes and strategies given that I knew they were not in a position to make any major revisions to the application. Subsequently, the following recommendations highlight ways to better integrate the mobile application into the communication ecology and support the unique affordances of the application that interviewees and survey respondents wanted:

- **Increase communication that emphasizes the value of events, activities, and more across platforms.**
  Given evidence suggesting that members are less interested in events that aren't

pertinent to them or described as valuable, I recommend increasing descriptions of what members could take away from the rich events and practices available through the organization. The data suggests that members want brief details on what they can find valuable in the events that the organization provides, such as events categorized by age. Categorizing information to specific groups across platforms could help in personalizing content to members.

- **Increase content that highlights stories of strong participation and engagement in the organization as models for others.**
  I recommend highlighting key involvement in the organization by members. Highlighting stories of engagement and strong involvement can help personalize the concept of participation: in other words, help members see the connections between more engaged and participative members and themselves or see higher engagement as a real possibility in the organization. Additionally, spotlighting or highlighting members within the organization materials through images of events and images of members can help strengthen their role as models to others in the community.

- **Invest in the unique affordances of different platforms and make connections across media.**
  Given the responses that suggest information is often duplicated across platforms and media, I recommend utilizing the key and unique affordances of each platform. For instance, more descriptive language could be suitable for the website that wouldn't fit in the bulletin, dynamic images of organization members and key members and events could be useful on the website where there's less room for that content in the bulletin, etc. Along with these practices, I recommend making clear and consistent connections across all forms of media: 1) encourage members to seek out information across the platforms available and 2) make sure information is hyperlinked appropriately from the mid-week email to the digital bulletin to the website and so forth, along with descriptions of available platforms through the bulletin so members know where to find unique information.

Overall, the survey and interviews indicate a strong appreciation of the current, consistent communication materials provided through the organization with primary areas for improvement revolving around 1) making content more personalized and personable to members, 2) utilizing the distinct affordances of the multiple platforms available (e.g. website, newsletter, bulletin, email, etc., 3) developing connections across media, and 4) emphasizing the pertinence and value of events for members to encourage participation.

By and large, what these interviews and survey with leaders of the organization and members show, which I'll delve more deeply into in the following chapter, is: 1) organization leaders had perceptions of mobile technology that weren't entirely correct, that the application would automatically be a draw in and of itself of younger demographics, 2) and that users would want the same materials they could pursue elsewhere (e.g. weekly bulletin, website, weekly emails, etc.) on the mobile application, making the application function first and foremost as a mobile access point to the same information from other sources, and 3) that users would go against strong habits formed

with the more traditional communication channels in favor of the application. To that end, I found that community members had strong habits already in place regarding their interactions with communication materials. And in many cases, there was sentiment attached to these habits: community members often found pleasure, joy, and a feeling of stability in their community when consulting the weekly bulletin on the same time, at around the same time every week. In some cases, these experiences reminded them of when their parents or other family members would consult these materials and discuss them with the family during childhood or act as a kind of structure and stability— something that remains the same—across different parishes as some of the members I talked to had moved and changed parishes over time, but felt stability and familiarity in the more traditional, long-standing communication channels used (e.g. the weekly bulletin or monthly newsletter). In reference to the application itself, many community members wanted to use the application in different ways than it currently functioned: they saw the value in having intimate access to the parish when they couldn't physically be there, but didn't want to see the same information from other channel simply replicated. They offered that the mobile application could be a much more engaging tool for the community. In this way, I think we have a divergence in how mobile technology is understood by leaders of the organization and users, along with distinct preferences and emotion tied to how members use and engage with the communication channels offered by the site I studied. As I mentioned, I want to use the next chapter to delve more deeply into these assumptions, myths, perceptions, and desires and also point to key, sustainable ways that I worked to resolve some of these inconsistencies between users and leaders in this context in hopes that this localized strategy could be helpful for others in some capacity.

Chapter 4 – Analyzing Primary Motivations and Breakdowns Across Activity Systems

A multitude of factors inform frequent use of a particular communication channel, content, product, or service: if we can make something easier to use for particular users or for particular purposes, if we can make something that fulfills a specific goal, if we design an object that provides some kind of utilitarian function in our daily lives, or if by using something we experience some kind of positive emotion (Buley, 2013; Mendoza, 2013; Eyal, 2014; Nagel, 2016; Moatti, 2016). In chapter 3, through an analysis of the communication ecology and the variety of activity systems bound to my research site, I found that participants encountered significant breakdowns regarding duplication of content, a lack of personalization of content, and challenges of understanding pertinence of content the organization developed. This chapter further explores the function of contextual habits in developing sustained and motivated use: in other words, the behavior, patterns, and pathways that community members used *across* the ecology that informed their use of the mobile application. In this way, this chapter examines motivations of use and habits across different technologies, devices, and platforms the organization uses—not just of the application itself—to consider where breakdowns in motivation and value existed by 1) analyzing ease of use of the different channels and technologies tied to the communication ecology and 2) identifying primary motivations that existed within the habits, emotions, and triggers across activity to develop strategies for building mobile community engagement.

One of the primary aspects of user experience that Buley (2013) notes is to "reduce the friction" across different actions users wish to take or things they want to accomplish with a particular too, and I argue that productive user experience identifies the breakdowns and motivations *across* these factors along a communication ecology (para. 2). By prioritizing motivation and decreasing breakdowns, we can create more frequent and what we might call "habituated" use of technologies and tools to support our purposes. Social scientists and UX researchers alike (Wood, et al., 2002; Gourville, 2006; Duhigg, 2012; Eyal, 2014; Moatti, 2016) argue that there is a spectrum of behavior, thought, and intention to actions we might define as habits, from nearly unconscious tracks or patterns of behavior to more "emotionally evocative" activity (Azzawi, 2016, pp. 9-10) that is tied to a significant degree of utility (Eyal, 2014, p. 28). While corporatized iterations of crafting habits lean more towards making products "indispensible," I believe that for community engagement, habits associated with interacting with the organization show strong progress of an organization's message, mission, content, and scope embedded within community members' daily lives (Eyal, p. 2). In this way, habits suggest that members have developed patterns of thought and behavior that are trusted without outside prompting from the organization: content, services, a mission, or a tool are so simultaneously important, functional, and emotion-driven that they can, too, become habituated with community members.

Habituated behavior is so important to user experience design because it points to a level of trust users have in a technology, tool, product, or content to produce a kind of

intended or expected effect or provide some kind of utilitarian function. Habits show us what's working as product adoption is typically an incredibly difficult hurdle to overcome. Gourville (2006) argues, based in Kahneman's 2002 Nobel Prize-winning theory and Tyversky's research, that there are a multitude of sometimes overlapping factors that inform consumers buying into a new product, such as the products' perceived value and users' perception of the benefits gained through using the product in comparison to the tools or products they already use (p. 4). It is not enough for a product to be simply easier to use than an older version or a different product: habits tend to form through tools that instead *not only* function better, but also do not "require significant behavior change" with few new benefits (p. 8). Researchers have found that users have very little patience for tools and products that require them to learn new behaviors while offering little added functionality, positive emotions, or utility. In this way, mobile habits are formed through sustained positive emotions tied to utility. It's especially important to recognize habituated behaviors and preferences within a communication ecology to better understand why and where old habits have already formed, how new habits can be developed through other tools, or how we can build upon the foundation of current habits. I found that the leaders of the organization I worked with tried to rely upon the emotional attachments to replicate the kind of habits users had developed with older channels, but the repeated content was not enough to replicate these already established habits or patterns of trust. In fact, the duplicated content was frequently perceived as a negative aspect across all of the communication channels, and users instead expected to have a more unique experience with the mobile application over other channels, such as the website or weekly bulletin. In other words, the application seemed to require far too many new patterns of behavior with limited distinction from the other channels and too few benefits for users to be motivated to make it a tool of habit.

Subsequently, I want to delve into some of the findings regarding participants' motivations for using particular communication channels: I think they are imperative to consider when introducing mobile communication practices and interfaces into a non-corporate organization. I'm referring to the kinds of habituated emotional connections community members described to me across the various channels, devices, and technologies of the activity system I studied. I use the term habituated or routinized emotional connections as users tended to combine some form of action or practice with a positive, emotional response. I want to note briefly that there are likely many factors influencing why users were motivated to use particular communication channels over others (e.g. access, demographics, technology experience, consistency of content creation across channels, etc.), but I focused on what users told me: they held routinized practices that simultaneously supported some kind of positive emotional experience. That doesn't mean that users weren't also informed by other motivating factors, but my research suggested habit, routine, and positive emotions to be strong motivators for using a particular communication channel over another (i.e. consulting the weekly bulletin over the mobile application even though much of the content is the same across channels).

This chapter details users' perceptions of ease of use and the emotions tied to the habits and preferences they've already developed to answer what is driving habituated or routinized use of particular communication channels? What is blocking users across other

channels, particularly the mobile application? And perhaps most distinctly, what strategies can we draw from these habits, emotions, and breakdowns when we study them from an ecological perspective? As Hinman (2012) argues, designers must begin to design for ecologies of behavior and interaction rather "singular, siloed experiences," and I think an activity theory and space-based perspective requires we move away from building siloed experiences and studying experiences singularly and instead developing, designing, and analyzing experience from a multi-device, cross-channel and multi-platform perspective. In this chapter, I will first start by examining the breakdowns associated with ease of use across all of the communication channels the organization I worked with used before delving further into the motivations that drive routine use of these channels and the breakdowns that block usage of certain channels.

Analyzing Ease of Use as a Key Factor in Motivation

System functionality and ease of use are touted as such important factors to building routinized and habituated behaviors (and they often are), and so I wanted to confirm that users did not prefer different channels over others—or did not build habits—mostly due to issues in ease of use, functionality issues, or system errors. Based in data from the survey I conducted, in terms of usability of the mobile application (N=25), 56% (n=14) reported encountering no challenges or aspects they would change within the application. The remaining 54% of members noted minor issues with the application loading quickly or material not being added to the application in a timely manner. 24% (n=6) of the total users that responded noted issues with the navigation of the application, but generally users mentioned that these challenges did not interfere with them continuing to use the application.

Broadly, members responded positively to the ease of use of most of the communication channels available, including the mobile application. When asked, "How would you rate the following in regards to how easy it is to find the information you want through the following methods? If you've never used a method or channel before, please select N/A," 86.63% of members noted that the weekly bulletin was very easy or easy to use (refer to table 4.1 and appendix C for more information). Other traditional channels, signage and fliers, were more towards positive or neutral in reference to ease of use. The mobile application tended to trend towards easy to use or neutral, with most users noting they hadn't used the application regularly to assess it properly. When asked about the issues they faced across the board with the communication channels they most preferred to use, across 121 responses, the majority of members didn't have any major problems or issues with the various channels they used most often.

Table 4.1: Participants responses based on ease of use of communication materials.

Channel	Number of respondents based on ease of use						
	Very Easy	Easy	Neutral	Difficult	Very Difficult	N/A	Total
During mass (in-person)	55	47	40	14	5	8	169
Sunday bulletin	86	63	15	3	2	3	172
Website	21	62	60	17	5	5	170
Mobile application	8	13	32	7	2	106	168
Newsletter	34	51	54	7	2	22	170
Flier or poster	17	39	67	20	3	24	170
Electronic sign	32	67	41	14	5	10	169
Facebook	12	27	31	9	6	85	170
Twitter	4	4	10	7	15	129	169
Telephone	5	23	36	22	9	72	167
Email	51	73	29	1	4	12	170
Mail	29	79	37	7	4	11	167
Word of Mouth	13	42	57	21	18	19	168
Other	4	2	0	0	1	40	47

Some members pointed to issues with communication being repetitive across weeks and months and content being overwhelmingly duplicated across channels in ways that didn't increase the members desire to participate: repeating and duplicating information across channels was not enough to effectively pique members' interest. Further, some did note more nuance to how they perceived the duplication issue. For example: "There is a lot of information in the bulletin that maybe could be eliminated or directed to other sites ([organization] website). Example Parish Ministry contacts (maybe include once a month or quarter) and Liturgical ministers schedule. Weekly Calendar of events could maybe be eliminated or directed to the website. Commercial activities should not be in the bulletin (example ACT prep class)." Comments like these seem to speak to disconnects with the information on particular channels that would be better served in other channels.

More interestingly to me is that based on these results, members didn't seem to have catastrophic issues with the ease of use of these materials to engage with the organization, as seen here in this member's response: "I don't find it confusing. It is pretty straightforward. I'm often times thinking it is missing key opportunities for families to volunteer, etc. Seems to have a lot of the same information in it, so I sometimes feel like I am missing out on current or new opportunities." This particular member, much like many of the rest, note that they didn't find anything particularly challenging or confusing, but *lacking* in terms of making the content engaging and valuable to the community. We see this same sentiment in another participant's statement: "If they are being used to send out regular information, sometimes it is too

much text to plow through. **Get to the point and tell me why I would want to go, or would benefit from it, or how it would impact my family**. Sometimes information is not laid out in a clean and easy way to read. Pictures help me see the breaks and help me decide if I want to read that section." These aren't standard usability errors, they're issues of engagement, issues of pertinence, and challenges in valuing the experience of the application. Certainly, there were critiques of the media and materials (specifically in reference to the website) regarding usability issues like issues of navigation or errors in the application that caused it to shut down, but many of the most serious issues that users pointed to that impeded frequent and habituated use were not those that traditional methods of ease of use would be helpful in understanding entirely or fully resolving. For example, while usability testing of this application would certainly be needed at a variety of different stages in development—given that it is such an important factor in sustained use—what I realized through my own ease of use analysis, was that the most serious breakdowns in motivation were not attributed to the usability issues in the application, but instead revolved around the fundamental functionality of the application and integration of the app with the other communication channels. Although usability testing could point to some factors in motivation breakdowns, this research site needed a lens informed by activity theory and space as practiced place to identify the nuances of habit and pertinence to support integrating mobile experiences across the communication landscape alongside usability research.

The responses from community members confirmed my own observations of the app: the application mostly functions the way it was intended with some issues in navigation and clarity of pages. For instance, in some cases, the pages are more difficult to view easily because they use pretty small text sizes, even for a mobile application. By and large though, nearly every seemingly clickable button does link somewhere else in the application in largely expected ways, names of menu items generally match what users would expect, and information is categorized under specific headings (albeit, at times the application is a bit cluttered with an excess of information on one screen). For example, on of the main sliding pages of the application, swept right from the home panel, members can click on various screens with titles such as mass times, volunteer, donate, etc. (see figures 4.1-4.3). These screens, or the menu of the application, can be used to navigate through the app. And yes, sometimes there are a few too many jumps to get where you expect to be in the application. In the example of mass times below (see figures 4.1-4.3), users must navigate through a second screen where they have to click on "parish events" to get to the actual calendar of events with all major events, requiring members to search for mass times among all the different events. Not only is the second screen a seemingly unnecessary page at the moment that only adds to the time it takes a user to get where they want to be within the application, but once the calendar of events is reached, members are still left with the task of searching through a variety of different days and times to see the scheduled mass times. Although I can't be certain, my suspicion is that the developers and leadership team may have been thinking that the second screen could be expanded to include other elements, but it doesn't quite make sense to go to a screen with multiple options from a button that explicitly notes "mass times." In this scenario, it's pretty clear what members would be attempting to find, so the middle, extra screen is not necessary the ways its being incorporated into the structure of the application as is. It's a bit clunky in places to say the least. And I thoroughly expected to

hear participants discuss these kinds of usability issues, which they did in both the survey and follow up interviews, particularly in terms of the navigation, layout, system errors, and information overload on the application as noted below:

Navigation Issues
- "[The application is] not always the easiest to navigate - a lot of links crammed onto one page."
- "[I] don't like that school and parish are connected. [It's] not as easy to navigate."[14]

Excess of Information or Media
- "There is a LOT of information. You have to click through a lot of links before you actually find what you need. Also, it is very busy in terms of color scheme and layout. Simple is best w/ mobile."

System Errors
- "The tabs won't refresh at times and it is freezes the app. Other times there aren't any issues."
- "[I] cannot always open [the application]."
- "The rosary doesn't come up, but most other things I have looked for have been there. Formation presentations can be listened to."
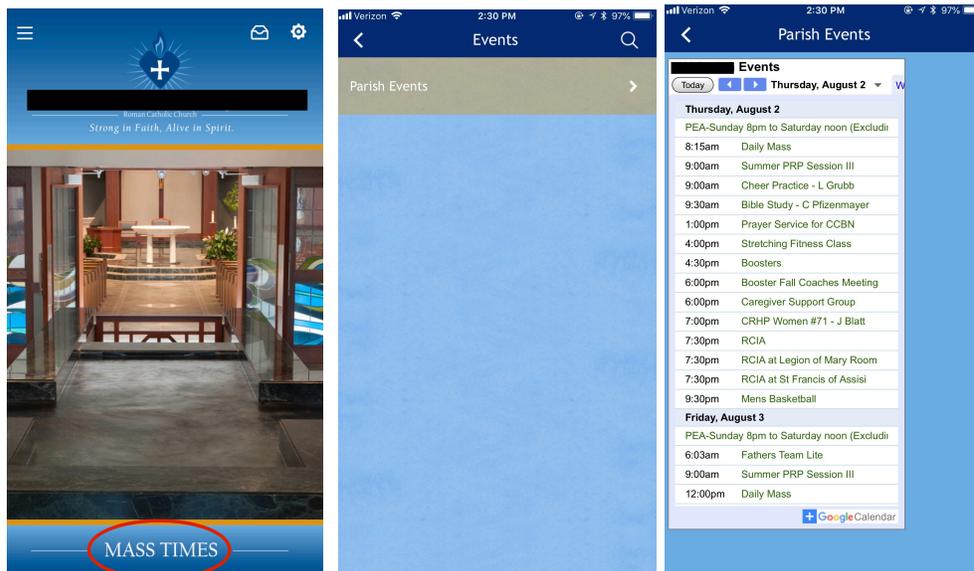

Figures 4.1-4.3: Examples of notable usability issues in the application. Mass times initial page and events page that opens when "mass times" is pressed; users must click on the events link before a calendar of all the different events, including the mass times, can be reviewed. The images have been censored to remove identifying information to the organization.

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[14] Of the 25 responses to "What challenges, if any, have you encountered with the [organization] mobile application? Please provide specific examples or details," 3 participants noted navigation issues.

Beyond the errors and issues found, the application does have quite a few different positive aspects: 1) the branding of the application is fairly strong with appropriate, corresponding, consistent, and familiar colors and imagery used through the design of the interface; 2) the application includes search functionality in more complex parts of the design and 3) includes structured, organizational pages to allow for users to more quickly find information. For example, there are search capabilities for videos of formation talks, and topical and date-based markers to search through the wealth of resources, bulletins, newsletters, etc. available through the application (see figures 4.4-4.6). These are just a few the main aspects that this application does well. Members noted that they particularly enjoyed an ease of access to all of these different resources throughout the day, along with knowing that they could easily find out information they might have missed at mass or at an event while out of town. Of 35 responses, 40% (n=14) of members noted that they liked having easy access to the resources the application included. The remaining responses were focused on specific aspects the application offered: for example, some users noted liked having access to prayer resources, streaming services, and bulletins. When asked how users currently use the application, many referenced searching out volunteer opportunities, bulletins or other resources available, or general information on events, or event that they may have missed:

- "[I use the application] to seek information about events and to download information or talks."
- "[I use the application for] General information and calendar updates."
- "[I use the application to] to check special mass times for holidays, etc. or special events, etc."
- "[I use the application] to pray the Divine Mercy Chaplet, check the readings of the day."
- "[I use the application to look] at bulletins to get times and places for events, I have also used it to volunteer for events (e.g. festival)."
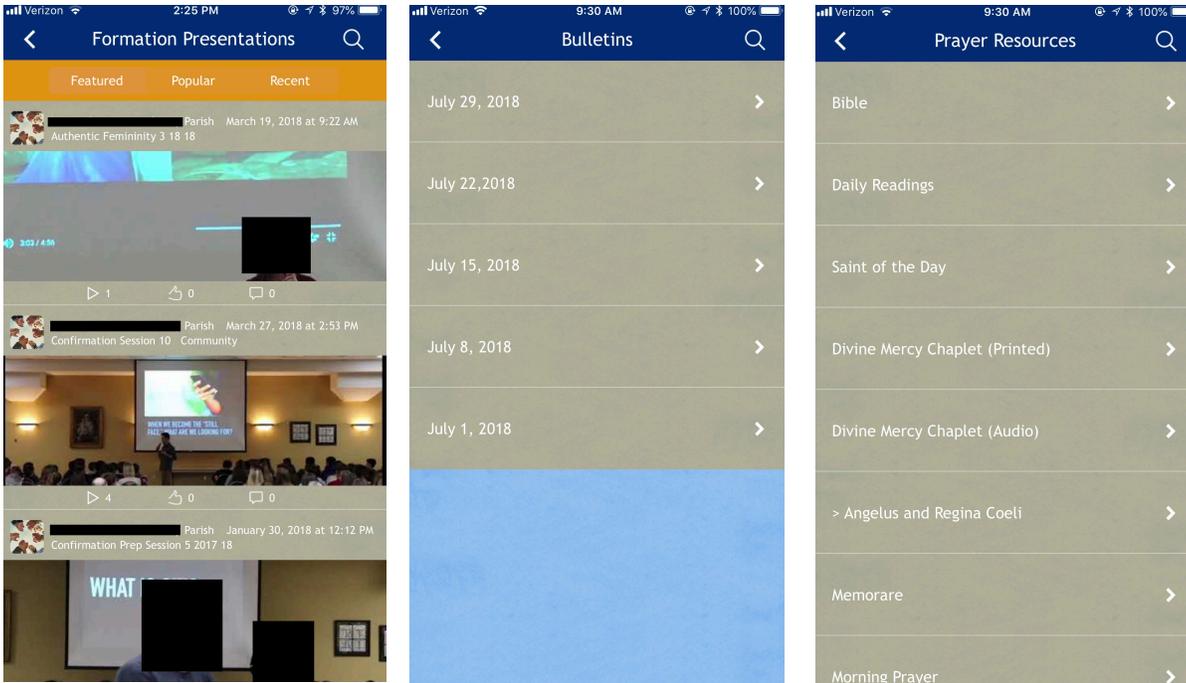
Figures 4.4-4.6: Formation videos screen, showing the search capabilities in "featured," "popular," "recent," and keyword search and organizational screens that provide topical or date-based information to find bulletins and resources quickly. These images have been censored to remove identifying information.

What I find critical in this ease of use analysis is that while participants spoke to both positive and negative experiences of traditional usability factors, the participants who had used the application before **did not seem to be catastrophically confused or so impeded by errors** and challenges they experienced in the application that it could not be used in ways the developers intended, nor were the positive components so supportive of what participants wanted to accomplish with the application that they supported sustained use. And while negative usability factors were mentioned, participants still reflected upon their overall experience with the application as generally easy to use or neutrally so, while pointing to other factors that frustrated them or demotivated them to continuing use the application, such as duplication of information, a lack of personalization, etc. Broadly, what I think is important here is that the usability errors and issues that exist in the application were not wholly influencing breakdowns in motivational use. And, in fact, some participants offered that while they did experience some usability issues, they did not seem to be incredibly bothered by them. For example, this participant explained experiencing challenges or issues related to what they perceived as a cluttered or busy interface, but ultimately was not overly frustrated by that experience in reference to questioning if they had experienced any challenges using the application: "None. [No challenges experienced] It is very "busy" at first glance but it's fine." Other participants couldn't point to any specific challenges they experienced with the application, but that there were still some disconnects in sustained use: "It's not a go to app like a Facebook or Instagram app, so I often forget that I have it on my phone" or noted no issues or challenges with the application itself but still "[forgot] to check it

frequently" or "just don't think of [the application]." These challenges appear to me as issues of valuing the application as an essential or productive tool in community members' lives.

Ultimately, I could've used more of my time in uncovering additional errors or bugs in the system for the developers could fix, but what I found through this analysis was that a study of **ease of use left me with a limited perspective of what actually motivated users** to consistently use the organization's application and where breakdowns in motivation actually occurred, given that the usability errors found did not seem to thoroughly impede usage. What was more important now was understanding 1) what people wanted out the mobile application, 2) what motivated their preferences for certain communication channels, and 3) how might the organization apply these findings. Unraveling more about how the members of this organization might reimagine the use of the application in their lives was more important to me to study than the functionality. Participants mentioned in the survey and follow up interviews they hoped they could use the application to "chat with others" in the parish, "upload pictures" of events or meetings, or find out quickly what was going on in the parish that week (e.g. events for parents, events for children, etc.) or spoke of wanting components where they could personalize the information they received: "[I would like a] place to chat, put photos, or a place to find [information] quickly. What is happening now tab current events, events to kids events to adults," and "I would like to be able to communicate to other commissions through the app. I would also like prayer chains to be easily acceptable via the app." These responses speak more to a desire for personalization and connection across members in the community, facilitated by the functionality of the application.

I think it became more apparent to me that breakdowns in motivation spoke less to usability factors and more so to the intended purposes, goals, and functionality of the application when I asked why some users had not downloaded the application. Many users had similar responses as the following that position the application as having no real advantage *in comparison* to the other communication channels offered, such as the weekly bulletin or website:

- "**Do not see big advantage** to using mobile app, compared to using web site and/or parish newsletter/bulletin."
- "I have enough apps but I'm not opposed to another, **just haven't had the need for it.**"
- "I have too many apps, **no significant advantage** to checking just the website."
- "I don't need an app junking up my phone for a bulletin that I can see in a mobile or regular website. **I hate having too much stuff on my phone that gets infrequent use**."

It's responses like these that most pique my interest as a usability and UX researcher because they don't speak to our traditional methods of findings errors and problems in the systems created. Members saw some value in the application in some cases, but many felt the application was unnecessary given it functions very similarly to the website or the physical bulletins **without any of the experiences of familiarity, tradition, or**

connectedness that the other materials carry with them. These issues more speak to challenges and disconnects in motivations of use and expectations. And it wasn't until I studied these suspicions *in context,* by studying an activity system of communication in the organization, that I could more fully understand where members were left unfulfilled by the application, where the breakdowns in motivation occurred.

Studying Activity Across Systems and Through Breakdowns

Engeström's activity system is defined by, instead of narrowing exclusively on actions or individual actions or movements, the study of *systems* of actions. In this case, the activity system is the unit of analysis:

> Activity theory contends that such of a notion of context beyond our influence is fiction, a fetish. It is true that arenas of our everyday life are usually not *directly* and *visibly* molded by our actions. But they are constructed by humans, not by superhuman agents. If we take a prolonged look at any institution, we get a picture of a continuously constructed collective *activity system* which is not reducible to series or sums of individual, discrete actions, although the human agency is necessarily realized in the form of actions. (p. 78)

Additionally a system is not stable, nor without contradictions, and as systems become more complex and centralized, typically activity becomes more unique and novel (p. 83). Activity systems transform, morph, and change through contradictions (p. 84).

Regarding contradiction, of all of the studies conducted, Engeström's experiment on computerized health records/charts seemed to be the most applicable to my own. He noted that use of the computerized records should be appropriately placed within an activity system of work, labor, time constraints, etc. In this way, AT appears to afford the researcher a more detailed perspective or at least a more focused perspective on the context of use that extends beyond individuality, user error, and usability from a systems' perspective (p. 162). While an initial observation might point to software optimization or user error as primary issues, Engeström explained that the contradictions of the system reside in other factors that inform the computerized record use and success. For example, patient and doctors' desire for quick visits, different doctors being coupled with different patients each time, and short wait times result in contradictions that would be difficult to solve merely with software changes or training (p. 169). The strength of this methodological framework is that it **requires study of tools and use in context of other tools, people, and experiences**. That said, I do want to note that this framework does have drawbacks. It requires a broad-scale approach to assessing context, which makes for large data sets, many of which is qualitative descriptions of what users might want and their experiences. As many of us know, these kinds of deep descriptive methods do take time to conduct and analyze, and at least in my case, as much as I tried to enact community-based research practices—allowing participants to help shape or refine my approach to building interview and survey questions, for instance—most of the time, my community partners didn't have the time to offer many suggestions to my work. I tried to include the leadership team in appropriate ways (by appropriate I mean in ways that I

think would be valuable to them and be considerate of their time and resources), so naturally I headed all of the drafting, recruitment, data analysis, and dissemination of results myself, which I expected.

However, I believe that this methodology invites developing iterative research practices and collaborative goals or questions, but unfortunately when it came to discussing guiding aspects like these, the leadership team simply didn't have the time to be an active participant throughout this study. I would've liked some more interaction with the leadership team throughout the process so I could be more certain that the research I was doing would be truly helpful, and overall I didn't have as much interaction as this framework would encourage. But this wasn't an ideal scenario, and many of our research projects aren't going to be ideal. Subsequently, I relied upon my own assessment of the breakdowns within this activity system as a whole to account for my limited interaction with the leadership team to incorporate methods that would allow for more of a big picture perspective of the organization: a study that allowed me to evaluate how motivations, contradictions, and behaviors were formed with the mobile application in comparison to other communication channels. It is within these contradictions that breakdowns occur. Spinuzzi (2003) defines breakdown as what "happens when an artifact that has become operationalized ("ready-to-hand") suddenly does not behave as expected" (p. 145). And while his focus is on work-related contexts, I think the definition of breakdown can still be used. They are interruptions in action when a tool cannot be used in a way that a user intends.

Identifying Breakdowns and Building Motivation

In the case of the organization I worked with throughout this study, I found that while the application did have some system errors and usability flaws, the challenges that members spoke to above point to three major breakdowns in activity in relation to the mobile application's success within the communicative landscape in reference to duplication, personalization, and pertinence: 1) **Duplication**, or a duplication of information or single-sourcing information across platforms and media; 2) **Personalization**, or the customization of information for specific groups of members; and 3) **Pertinence**, or positioning content as relevant to members or relevance of events, information, and content. Members of the organization had trouble creating new habits of use and conceptualizing how the application could add value to their daily lives because "ease of access" or mobile access to information—a common perception of the main component that mobile communication offers—wasn't enough in light of members' strong emotional connections, feelings of **stability**, **familiarity**, and **tradition**, to the more traditional channels (e.g. the weekly bulletin) the organization offers. The application was built to be a holding place for all of the information that the other channels provided, and subsequently didn't do much in terms of offering anything unique to members, aside from a few aspects: members can stream masses lives on the application, for example. I suspect the application was developed in such a fashion—relying upon a characteristic of mobile communication that is not always valued depending upon the content offered, duplicating the information and engagement from all other channels—based on the leadership's team understanding of how the mobile application should function, tied to the developer teams templates they had created, which

functioned simply as mobile sites, essentially, rather than an application that can serve some other, unique affordances for community members.

So, not only does the application have to go against emotional attachments to other communication channels and strong habits that have been created over time with these channels, it also has to overcome that the application simply doesn't offer much that is explicitly different from the other channels[15] aside some quick, mobile access to information and live streaming capabilities. So, how do we get around these major breakdowns and build motivational activity towards the mobile application? At least in the case of this organization, users reacted especially negatively towards duplication of content across channels. They didn't need more tools to do the same thing or offer the same kinds of information. Or, at least, they didn't appear to need more tools that offered the same content as a primary function of the tool itself. Instead, they sought experiences that supported personalizing information, building ties or connections across members of the organization, and experiences that identified the value that an event or resource would offer *their life* and *their family*.

Ultimately, to build habituated behavior and motivation use, the application must both create some kind of positive emotional experience and fulfill a major goal or utility that is distinct from the other channels. I'm recommending that instead of duplicating or replicating content across channels, the leaders of the organization should prioritize providing distinctive mobile experiences, even if that means limiting the overall functionality of the application by considering the app as a unique piece of their entire communication ecology or a series of bound activity systems, rather than a tool that could replace another channel. In this way, I'm calling for developers and leaders to consider the following characteristics of mobile communication and tools **in context** of the other channels, communications, and technologies they already offer to build mobile habits across developmental stages:

Emotional experiences that highlight connection – whereas community members tended to experience emotions such as stability, familiarity, and tradition in reference to the more traditional communication channels, and these emotions continued to emphasize their sustained use of these channels, they spoke up wanting a community space in the application. They saw that the mobile application had distinct affordances from the other channels the organization used and could offer ways for members to connect with other organization members, possibly ask questions of the leadership, set up volunteer groups, etc. Many of the possibilities that users described to me were inherently experiences of connection with other users, so I'd recommend emphasizing that kind of emotional experience by increasing avenues for users to interact with one another and upcoming events and groups the organization hosts.

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[15] There were other issues that I noted when assessing the communication landscape, like a lack of connectedness across the channels. In other words, the channels used didn't have any explicit connections across them. For instance, in the weekly email, information that could be linked to the website usually wasn't. The bulletin doesn't typically advertise the website, weekly email, or mobile application.

Unique utility that prioritizes mobile affordances – Broadly, designers and corporate leaders have often taken a "mobile first" approach to mobile UX that has been critiqued but is still relied on by community leaders. Mobile first approaches emphasizes incorporating a responsive mobile version of a company site or an application that serves to provide similar functionality as an organization's website (Wroblewski, 2011; McGrane, 2012; Mesibov, 2017; Xia, 2017). Mobile first approaches typically provide organizations and companies with suggestions that are ultimately limited ways to easily create a mobile access point without adding different functionality or content to the mobile site or application. These approaches tend to prioritize efficiency and speed (in the sense that organizations can quickly create a template-driven application or site to simply say they have a mobile access point) over distinctive affordance or unique utility. And at least in the conversations I had with community members, this approach was not valued. Instead of prioritizing efficiency, I recommend creating a unique way for members to interact with the organization or each other, even if this means limiting the functionality of an application from more of a dumping ground of content to a few key functions such as a community chat space, live stream viewing, or a discussion area for ongoing events.

Consistent connectivity and clear pathways across channels – While I'm recommending a shift away from mobile first tendencies, there does need to be clear connectivity across communication channels. In this way, organizations can and should rely upon the habits and emotions community members have built through other channels. For example, the mobile application should have clear pathways to other networked channels (e.g. social media platforms, websites, weekly emails, etc.) to tie the application more solidly into the larger communication ecology. Additionally, more traditional channels should also mention the application and its functionality in brief, along with the other channels the organization provides. Overall, rather than following a more mobile first approach, I recommend providing experiences that prioritize the unique affordances of mobile, networked communications so that the application, as a tool to connect with the organization and its mission, acts in novel ways in users' daily lives distinct from the habits they've already created with other communication channels, while working through the preferences members have built with more traditional pathways.

Because the application I studied is well past the development stage and not slated to be updated significantly anytime soon, I wanted to suggest some strategies with the organization's leaders, based in the members wants and my own assessment of the activity system, that could help incorporate the application into the other more commonly used materials to help integrate it more effectively into the communication landscape. I wanted to use what already existed in the application and build a perception of value for members of my research site. After all, many users did note that they enjoyed the ease of access to a lot of different kinds of information and resources, for example, so I wanted to start by crafting some avenues for the leadership team that would work with their current communication infrastructure and application design. That said I also want to focus on what could be helpful for organizations that have yet to develop an applications. My goal is that these short and long-term strategies can be helpful for some who have already developed applications and those who are in the development stage or are just starting to consider implementing mobile communication into their organization channels.

Developing Ecological Mobile User Experience Strategies

In an activity theory and space-based framework it's important to consider how not only particular content and channels function individually, but how to they interact and impact use of other channels across locations, uses, and contexts? In other words, how do these channels function in context of one another? Further, how do these channels work together, connect across a broad landscape of communication, to support habit-driven and positive emotion-based experiences? When, where, and why do habits develop across time and space? The following strategies stem from challenging the characteristics I identified earlier—pertinence, personalization, and replication—that seemed to be tied closely to breakdowns in motivational use. Additionally, the following strategies encourage community engagement through valued and **novel mobile experiences** based in strong habits, **connectivity**, and positive, **distinct emotional experiences**: characteristics that based on my data are connected to stronger, sustained use for community engagement.

1) Assess Your Assumptions of Mobile Technologies

- **Solidify Definitions and Assumptions** - Based on my own experience with my research site, many on the leadership team had different understandings of what the application meant for the organization, what it could do, and how they thought it would benefit members. There's nothing wrong with people having different perspectives on how a tool can be presented and used within a community, but I highly recommend starting this kind of process by developing as a team an idea of what you think mobile communication can offer your organization and its members. Understand what other key people in the organization assume about mobile communication and how that might impact the overall design and function of this form of engagement.

- **Build Goals for Mobile Communication** – Broadly, consider what do you hope to accomplish through mobile interfaces? What do you think a mobile application will allow for in your context? What are the benefits of a mobile application versus a mobile site? The application I worked with throughout this project functioned very much like a mobile website, and it may have been a better option to simply create a mobile-compatible version of the organization's main website (during my time of working with the organization, they did overhaul their website in terms of design, structure, and content, which could've allowed the opportunity for a mobile version).

2) Identify Habits Across Your Communication Ecology

- **Assess your Communication Landscape** – What I mean by this, is review the other communication methods and models that the organization already uses: what are the strengths and weaknesses within these methods? What can a mobile approach offer beyond quick and ready access to information? How, when, and why do users use the various communication channels offered? In other words, I suggest taking a look at any analytics data available to you through social

platforms, email, or surveying community members briefly to determine what habits they've already developed.

- **Get Iterative Feedback from the Community**: Throughout the entire development process, get feedback from your community members. Always keep in mind, will this be a beneficial tool for them? If so, how? I used some more time intensive methods, like interviewing, to study this, but a few simple, short surveys can help keep the project user-focused and productive for its members.

3) Develop Novel Mobile Experiences

- **Craft Experiences based in Preference Rather than Assumption**– In many ways, what I learned throughout this project is that in some cases leaders and members had very different perceptions of what mobile communication could offer the community as a whole. Instead of assuming that mobile applications or websites will inherently attract younger demographics by duplicating information across channels, use surveying to help connect your plans to what members of the organization are saying they would prefer or desire within an application.

- **Create a New Experience** – Although this was something that came out of the context I researched and may not be as needed for other contexts, it was important to make the mobile channel distinct from other channels. Users were not convinced as to the value of a mobile version of content that was *only* duplicated across channels, but instead in some cases were hoping for access to resources along with different functionality, like chatting with other users, or seeing some kind of overall community page where they could interact with events to volunteer, etc.

4) Build Connectivity Across Your Channels

- **Integrate Communication Channels** – Build connections across your platforms and channels. This can be easily accomplished by, at the very least, providing connecting links or buttons to other channels on different platforms, websites, and offering destinations on where to go for more information on other channels in print materials. I noticed that in many cases, digital or mobile bulletins did not include appropriate hyperlinks to other channels, nor were other channels advertised on the most popular media, the weekly bulletin. Use the pathways that already exist and are valued by the community to connect newer channels.

- **Build Value into Marketing** – I want to return briefly to this participants note: "Get to the point and tell me why I would want to go, or would benefit from it, or how it would impact my family." Users aren't inherently drawn to technologies simply because they exist, but because they serve a significant, valuable function within their lives. Throughout communication channels, offer what a mobile channel can provide for members that other channels cannot.

5) Continue to Seek Feedback

- **Implement a Long-term Feedback Plan** – Make sure to include an option for users to offer feedback on your new channels on the channel itself. Provide a feedback section on the application or an email for members to suggest improvements or mention any system errors they're experiencing. Construct a plan to review this feedback throughout the year (I suggest to look at feedback every 1-3 months, depending upon how much feedback you receive).

- **Develop a Plan for Assessment** – Lastly, I highly recommend that the organization develops a formal plan to assess the success, based on whatever measures the organization deems suitable (e.g. download counts, surveyed responses, etc.), of the application and refine it over time. Come back to this channel in the future and determine if its current state is most effective for members.

As I mentioned before, building localized practices means contextualizing this five-stage process for your own needs, but my hope is that these steps offer a productive guide for developing effective and user-centered community engagement through mobile experiences. By taking this kind of approach, which encourages building emotional connections and strong habits in context and in connection to other tools and channels based on the values and wants of the community, I believe that community organizations could much more effectively integrate mobile communication in useful ways into their communicative ecologies. When working with tools and technologies from this perspective, I hope that mobile communication fits more seamlessly into members' lives with fewer interruptions in the kinds of activity they want to accomplish.

Chapter 5 – Implications of Studying Mobile User Experience for Community Engagement

As a usability, technical communication, and UX researcher, who most commonly works with non-profit organizations, community members, and community leaders, I've sought and continue to seek the sometimes mundane, but wholly innovative ways developers, leaders, users, and community members pursue information, shape their contexts, and make change within their own spaces, in their own ways. I've been captured by the impact mobile communication has in our community structures, and as mobile technology use continues to grow globally, my hope is that research continues to expand as to how we most effectively and productively develop and design mobile experiences. Working fundamentally from a productive usability (Simmons and Zoetewey, 2012) and user-centered frame, I realized that the methodological frames I was familiar with from usability and UX that encouraged drilling down into the design, function, and perception of a singular tool or interface was incredibly helpful, but limited. Given my research site had long since had a history of engaging with its members through multiple channels, and other similar organizations communicated with their members in similar ways (what I mean by this is that there are a lot of expectations bound to the proper ways members might define interaction with organizations such as these), I needed to study the mobile channel *in context* with the other channels the organization used. I needed a methodological framework that spoke to the broader interactions of use, experiences, and emotions *across* tools, interfaces, and place: a methodology based in activity, space as practiced place, and community-based research practices.

Ultimately, I see this framework running parallel to Fleckenstein's, et al., (2008) call for ecological models and metaphors within our field. They argue that ecological metaphors "conceives of activities, actors, situations, and phenomena as interdependent, diverse, and fused through feedback" (p. 388). What I've found particularly helpful is that an ecological metaphor can provide some kind of harmony in the mess and complexity of research, a la John Law's (2004) messy research methods: "Thus, if the phenomenon we wish to understand is "complex, diffuse, and messy" (2), then we need to "find ways of knowing the indistinct and the slippery without trying to grasp and hold them tight" (3)" (p. 389). This ecological metaphor accounts for messy and complex systems and encourages researchers to perceive systems as ones " in which activities, actors, situations, and phenomena are conceived as interdependent, diverse, and fused through feedback" (p. 389). And while writing and research as ecological is not new, mobile research as ecological in writing studies is not as commonly constructed. To that end, Fleckenstein et al. argue for not static or independent elements of a research project, but *interdependence* of aspects (p. 394). They argue not only for three major concepts of ecological thinking and research: interdependence, feedback, and diversity, but also for a rhetorical perspective. Rhetoric requires that research remain "in concrete phenomena, in the human experiences of the here and now," in the practical (p. 406). And when I first started what would become this project in 2016, I didn't anticipate the weight, structure, strength, and guidance the methodological framework would add to my research. But

while I came away from this project with some clear ways this framework aided me as a researcher, it was not without its limitations in its real-world application.

So too, I see this work as working within Nardi and Kaptelinlin (2012) push for *theorizing* human interactions with technology. In the wake of new waves of HCI wherein scholars were trying to theorize, rather than rely only on methods and practices that had been useful in the past, Nardi and Kaptelinlin note the importance activity theory has had in technology studies. They argue that AT has reconceptualized HCI through the 1990s in explaining how people's lives become intertwined with technology through action-based work (p. 2). Broadly though, the authors are arguing for theory to be a basis of HCI work, expressing that theory, in particular, not only offers ethical underpinnings to research, but also offers a framework for complex human behavior and agency (p. 3). Although they argue for theory, they warn against highly mechanistic perspectives of humans, arguing quite simply that technology is designed by humans and controlled by humans and as such, they have quite a bit of agency from a design perspective (p. 3). Nardi and Kaptelin note that AT has framed the following in HCI:

1. The object of study is not a computer or other device, it is a subject-object -- it is the mediation and the actions afforded through the technology that is studied, further it is the larger system that is studied rather that one object strictly (p. 6). In other words, people are "interactions with the world *through* computers" not interacting solely with computers (p. 6).
2. Maintaining that interaction with the world through computers is often conducted through microlevel actions; that said, these actions are tied to "meaningful goals" and are "tied to needs and motives of technology users," given agency to these users (p. 3).

Although Nardi and Kaptelinlin are arguing from an HCI perspective, I believe that their claims relate to the work I've constructed in reference to mobile communication. In this chapter I offer what I've come to learn through this project, by studying mobile communication and mobile engagement, particularly the ways in which this framework functioned. Additionally, I want to highlight the portable aspects of this research alongside my key findings and where this research could be expanded upon in the future.

Methodological Frame Overview

The methodology for this project takes a three-pronged approach: drawing from activity theory (AT), theory of practiced space, and community-based research practices (CBR) for both the research design and analysis. Overall, my methodological framework draws from the following tenets:

- Technology is designed, developed, and used through complex **activity systems** of constructed knowledge and relational interactions across channels, tools, interfaces, perceptions, and people and when these relational connections are interrupted when breakdowns or contradictions in the system occurs;
- User innovation, habits, and practices and lived experience across time and space is **tacit knowledge** and central to developing productive technologies and tools;

- User practices, motivations, emotions, and experiences are tied to **wider relational systems** that should be contextualized within a broad perspective, an ecological perspective, of the multiple channels, interfaces, devices, etc. that participants use;
- To be useful in terms of design and development, the end users or people using the products, should be **involved** in every developmental stage.
- Knowledge should be **built upon** in ways fitting and useful for participants.

Activity theory as a guiding theory assumes that activity is constructed through complex systems, framed through various cultures, histories, people, and objects: an activity system (Spinuzzi, 2008). Specifically, AT allows for objects beyond humans to remain the focus of study, even if humans do play a significant role (that is accounted for within the theory itself). Activity theory allows for researchers to follow activities rather than specific people: in other words, an ecological system of people, objects, and other aspects within a networked system. Spinuzzi explains that AT systems are built through relational connections, and like Actor Networked Theory (ANT), without inherent hierarchy: "Links are made across and among these nodes in fairly unpredictable ways. Since there is no hierarchy or "analyzable inner structure," the only restrictions to linking are relational or associational" (p. 7). What this means is that while there may not be an inherent hierarchy in terms of power or *influence* in a system, certain humans or non-human objects (e.g. the weather, a geographical feature, a computer, a phone, an email, a post-it note, etc.) have more influence than others based on the strength of these associational and relational ties. Simply put, humans are changed—their contexts of use, function, and purposes—by and when using mobile technologies, and mobile technologies have acting power within the often relational-based community networks I've worked with throughout this project.

What I found could be expanded in AT as a framework is a concept of space as practiced place. Of course, there are descriptors of contextual space in AT, including cultural rules and expectations, etc., but I found it useful to more extensively pull from Certeau's 1984 imagining of **space as practiced place**. As I referenced in chapter 2, Certeau argues that walking, the normal and everyday actions of people in place, "affirms, suspects, tries out, transgresses;" and it is through these actions that places are changed and *spaces* are formed (p. 99). As such, "space is a practiced place," a locale created by not only the relational connections between activity and people, but the combination of people, locations, and material objects and conventions (p. 117). It is these everyday practices of shaping locales, perhaps a more nuanced perspective of "rules" in AT, encourages researchers to study how users, members of our community, and tools transform places into spaces sometimes in mundane ways across time and location. Applying this concept of space, in combination with activity theory to mobile experience research should encourage researchers to 1) examine and value local user innovation, and 2) observe not only the motivations and conventions and histories that inform activity, but how mobile activity is informed by material space, whether the space of a bus, a sidewalk, a home, a grocery store, and more, and 3) focus on the innovative and sometimes mundane uses of mobile technologies across time and space.

What I think Certeau adds to this framework is a reworking on how users interact with a variety of different tools simultaneously while still being very much tied to use scenarios in terms of how objects and people work *in relation to one another across systems* through oftentimes mundane, carving out of habituated behavior. These relational connections are the main focus of study, and where we're able to see breakdowns and contradictions in activity that occur specifically *across* and layered within activity systems (see figure 5.1). And while figure 5.1 appears static, habits, emotions, and triggers exist **within and across** the layers of activity across communication ecologies as represented in the zoomed-in version of the model in figure 5.2: emotions, habits, and triggers exist across activity systems, shifting in and out of systems as objectives and usage changes. Additionally, habits, emotions, and triggers are informed by and mediated through different key mediating tools (e.g. a weekly bulletin, a mobile application, desktop, fliers, etc.), rules, and locations. These activity systems are only momentarily stabilized, fluid within a communication ecology, and bound by context. Activity can be analyzed within routines of behavior, routinized emotions, and habitual experiences, but these behaviors are shaped and transform over time and space. Tools, rules, and locations shift in and out of this model as the context and ecology are solidified or broken down. So while this methodological framework may appear static, it is a constantly shifting matrix contradicted and strengthened in part by mediated triggers, habits, and emotions.
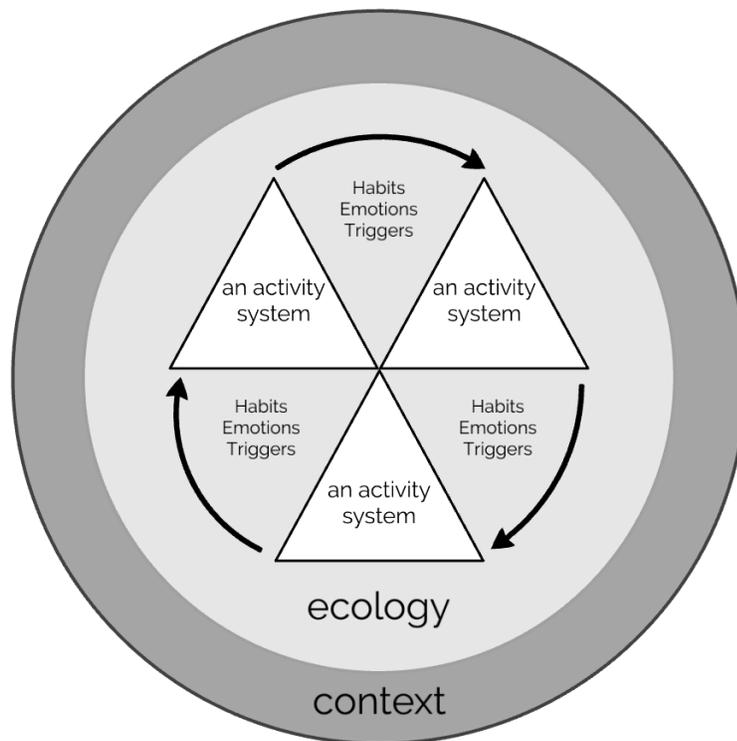

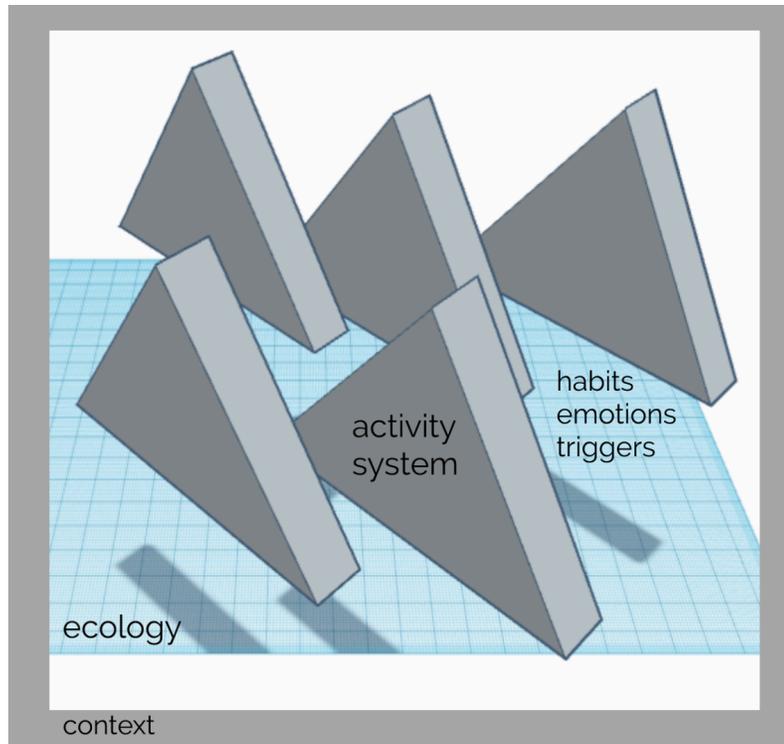Figure 5.1: Model of a space-informed activity theory framework.

Figure 5.2: Expansion of framework that shows habits, emotions, and triggers across layers of activity.

While AT and Certeau's articulation of space provides specific theoretical frameworks for designing and analyzing studies and data respectively, my framework is also heavily informed by community-based research (CBR) practices. What I find particularly valuable in CBR is that it required community participants to have an active voice within the research process, rather than simply acting as subjects to be studied: when we do more actively involve participants in our research, we work to give participants back power within the research process (Stoecker, 2009). Because researchers and experts are often the ones in charge and in a more powerful position, by actively encouraging engagement and providing collaborative ways to participate, the research process can serve both the needs of the researcher and the needs and wants of the participants. Specifically, I want to call back to one of Stoecker's main suggestions: "If we can train community members and organizations in the skills of knowledge production, and supply the relatively inexpensive means, we can support their access to the power–knowledge loop," (p. 398). I think there are different ways of interpreting Steocker's argument here within your own research context, but ultimately participants should be able to build from the knowledge created through the research process.

There are a variety of ways CBR practices and CBR scholars call for giving power back to participants. In some ways, that means including key participants in the developmental stages of research by asking them to develop a research question that may be important for them. Stoecker noted that many research studies included research participants into the research process as active participants typically as help for codifying

data, but this doesn't always allow for participants to get a broader perspective of what is being identified or how to use that data to make changes within their own context. I also want to point back to Lather's argument of validity, and how as researchers we should strive for a reimagining of validity. Ultimately, Lather argues for **catalytic validity** wherein the trustworthiness of data is tied to the ability of participants to use research results, data, and the process for their own gain, use, and transformation. In this way, like Stoecker's argument of the power-knowledge loop, Lather argues that: "respondents gain self-understanding and, ideally, self-determination through research participation" (p. 67). In this way, Stoecker and Lather argue for research where we ideally develop relationships, opportunities, and research practices that allow participants to not only use our work, but also build from it.

That said, I found it sometimes challenging to realize the CBR-based practices I discussed in previous chapters throughout my project. I've mentioned this before in chapter four, but developing sustainable solutions with organizations can be limited by what organization leaders are willing to take on once a researcher's partnership has ended. I don't want to suggest that research with a community organization should stop immediately after data collection, and in fact extended relationships can be incredibly valuable, but the fact of the matter is that I want to offer suggestions and solutions that allow organization leadership to continue the work we've started together so that they can pursue their own ideas without my intervention. Close the power loop, if you will. But I found towards what I'll call the end of my time with this organization, was that while many people were appreciative of the information I collected, they were not interested in making changes to their current communication practices, with my support or not.

After deciding a condensed report of the results with specific strategies included would be especially useful for the organization leaders, although I've tried to contact them to apply some of these findings in smaller, sustainable ways, it seems that the organization leaders became busy with more pressing endeavors. After trying to contact them regarding how I might help in the future, and with no further replies from my contact point, I realized that the CBR-based aspects of this framework work best when the researchers and participants have expressed goals as to the outcomes and applications of findings earlier in the research process. Of course, I'm perfectly fine with whatever the organization wanted to do with the findings, but I should've taken the time to collaborate on applications ahead of time so we were on the same page as to the future timeline of the project as a whole, especially since I believe many of Stoecker and Lather's claims of interactions with participants include not only active participation throughout, but the ability to *build from* research. While I structured the information I provided for the organization in such a fashion, without confirming that or realizing some of its application within their communicative landscape, it's hard to say for certain if the leaders could actually use the data and information productively. That said, I still think that the organization has opportunity to use the information from this study in productive ways if they so choose.

Identifying What's Portable

Although other research sites may have different needs from mobile communication devices, applications, and mobile sites, I want to recognize the research practices and strategies that are portable across different organizations. Immediately, I found that to understand how mobile user experiences could be developed more effectively for members, I first needed to know how organization leaders were defining mobile communication and the benefits of engaging with the organization through some form of mobile interface. I noted through my initial interviews that the leaders of the organization characterized mobile communication as consistent, access to information. They defined mobile technologies by their capacities to afford information and content at any time, but what I don't think they considered is why and when someone would actually use their content beyond ease of access. What motivated users to use the application? And, further, how might those motivations shape the content of the application? To answer these questions, I turned to a broader survey of the communication channels and interviews with community members. Participants' responses were generally positive, and I think part of the reason is that many of the members felt emotionally connected to the familiarity and tradition of the different communication channels used most frequently, namely the weekly bulletin. But even though participants had positive emotional responses to some of the communication channels, duplication of the same content did not map those same emotions onto other channels, such as the website or mobile application.

From this research, I came to what I think was one of my most important findings: users could be emotionally drawn and connected to channels through feelings of **familiarity** and **tradition** while simultaneously frustrated by the actual content on these channels, due in large part to the lack of pertinence and personalization, combined with excessive duplication of content across channels. I'm unsure if other organizations and community members would have the same kinds of emotional attachments and connections to specific channels. But what I think is important here and what other sites can build from is that largely replicated content across different channels did not always transfer these positive, strong emotions that users have developed. Even though the content was similar, and in many cases the same, across the organization's website, native application, and print materials like the weekly bulletin, participants did not experience the same kinds of emotional connections to the content itself, but more so to specific channels. If organizations want to develop similar kinds of emotions through different channels, they must consider how best to personalize and make valuable the interfaces and information they've created that uses unique utility of mobile applications.

Broadly, these emotional characteristics required me to develop strategies that considered building value and motivation in ways that moved away from duplication and increase experiences of feeling like content was important and pertinent to users. To do this, I first studied how the multiple channels the organization used (e.g. mobile application, website, email, print materials, in-person discussion, etc.) functioned in context of one another by examining patterns of preferences across these channels in terms of use and ease of use. Further, I examined how these channels work together, connect across a broad landscape of communication, to support habit-driven and positive

emotion-based experiences. Instead of relying on duplication, which seemed to increase breakdowns in pertinence and personalization, I built for motivational use by recommending developing interfaces and systems that support mobile **novelty**, **connectivity** across channels, and **distinct emotional experiences** (See table 5.1 for a condensed version of the practices and strategies and appendix D for a full review).

Table 5.1: Practices and strategies for mobile community engagement.

Stages of Mobile Community Engagement	Practices and Strategies
Assess Your Assumptions	**Solidify Definitions and Assumptions** – Develop as a team an idea of what you think mobile communication can offer your organization and its members. **Build Goals for Mobile Communication** – Consider what do you hope to accomplish through mobile interfaces?
Identify Habits Across the Communication Ecology	**Assess your Communication Landscape** – Review the strengths and weaknesses across the communication ecology. **Get Iterative Feedback from the Community** – Throughout the entire development process, get feedback from your community members. Always keep in mind, will this be a beneficial tool for them? If so, how?
Develop Novel Mobile Experiences	**Build Experience Based in Observed Preferences** – Solicit feedback on what users prefer or desire within an application rather than relying on assumptions of what mobile experiences can offer. **Create a New Experience** – Based on user research and feedback, make the mobile channel distinct from other channels.
Build Connectivity Across Your Channels	**Integrate Communication Channels** – Build connections across your platforms and channels. Use the pathways that already exist and are valued by the community to connect newer channels. **Build Value into Marketing** –Throughout communication channels, offer what a mobile channel can provide for members that other channels can't.
Continue to Seek Feedback from the Community	**Implement a Long-term Feedback Plan** –Provide a feedback section on the application or an email for members to suggest improvements or mention any system errors they're experiencing. **Develop a Plan for Assessment** –Based on whatever measures the organization deems suitable (e.g. download counts, surveyed responses, etc.), determine if the app's current state is most effective for members.

Without a framework built from activity theory, CBR, and Certeau's notion of place as practiced space that together encourage an ecological perspective of communication, the breakdowns in motivation because of emotional connections, habits, and traditions would not have been visible. Additionally, I would not have been able to assess the emotional connections members felt towards the various channels and subsequently their usage and relational ties to all of the different channels without a framework that encouraged an ecological perspective of communication. It is a framework that guides researchers to continually position technologies in context with other channels and media, which truly helped me understand why users were motivated (or not) to use particular media and channels beyond system errors and other standard usability issues, and even beyond how users felt specifically about the mobile application itself. It was incredibly valuable for me to see these technologies in context rather than singularly researching one channel.

While this framework was developed through research with a specific site—wherein I found that issues of duplication, personalization, and pertinence impacted motivated and sustained use of the mobile application the organization developed—broadly this methodology can support work outside of this site. And while other researchers could find challenges in other areas and motivations based in different characteristics beyond connectivity, distinction, and novelty, I find that structure of this research portable for future projects. Specifically, 1) considering the assumptions and definitions key leaders are using when considering mobile technologies as a first step in examining current communication strategies, while building short and long-term goals for what you hope to accomplish with a mobile interface, 2) identifying the spectrum of communication channels an organization uses to support community engagement, 3) researching preferences *across these channels* by the local community of users to support the development of mobile experiences that are valued by that body of people, while 4) noting key breakdowns in what is motivating members to user different forms of communication and how those motivations might impact use of a new communication channel, and 5) constructing some novel experiences across channels rather than simply duplicating content (see appendix D). Of course, members of the community should assess this kind of research across different stages of development and avenues for feedback should be available to further support content creation across mobile and digital channels. Broader channel goals and strategies, as well, should be analyzed and assessed on a regular basis as well.

Conclusion

I've been fascinated by how people value, use, and experience technologies, particularly mobile technologies, for several years now. As such, much of my research has revolved around questions of interface design, mobile engagement and participation and research practices: what interfaces allow for access? What interface choices accommodate the needs of users? What kinds of research practices with communities allow for developers to create technologies in ethical and productive ways? And while there are many technologies to consider while tackling these kinds of questions, as the rate of mobile users continues to rise, I feel the need to orient these questions towards mobile technologies. As Katz (2007) reminds us, "No other technology has achieved as rapid an

adoption rate as the mobile phone" (p. 42). Mobile technology continues to be used in the United States specifically, with more than "90% of Americans own[ing] a mobile phone, with one-third of these being a smartphone; that is, a hand-held computer capable of multiple functions in addition to placing calls" (Kaplan, 2012, p. 129). It is quite clear that mobile technologies, particularly the smart phone, are an integral piece in how we communicate globally.

Because of the utter pervasiveness of mobile technologies, I wanted to consider how mobile technology is shaping the ways in which we interact and communicate in different ways than computer technology. How does mobile technology allow more for the intersections of physical and networked space? With mobile technology, you can and are oftentimes persuaded to different physical locations, while still maintaining access to networked spheres through your cell phone. I started this dissertation by pointing to some of the ways mobile technologies have been characterized in the past, particularly as social distractions or functioning as a way to disconnect from physical and public spaces. But what I've confirmed throughout this project is Silva and Gordon's argument that that mobile communication and technologies have the capacity to help manage social and communicative interactions with people and places (Silva and Gordon, p. 87). People mediating their work and activity through mobile devices are actively shaping and managing their social and networked interactions across a variety of purposes. But in many ways, users encounter breakdowns as mobile technologies are not always designed to suit our needs.

Developing mobile communication strategies are not easy, particularly for community organizations that have few resources aimed specifically at their contexts. What I've learned is that just as challenging as this process can be for organizations, it's just as challenging to document from an AT perspective. What I've recognized is that this study is ultimately limited in that I only worked with one site, one application, and even only one mode of mobile communication. I found through my interviews that there are more of the same kinds of applications within Cincinnati developed for different non-profit organizations, all of whom used similar developers to create their mobile applications. I've realized that these methods provided perspective into only one activity system of community engagement: to more fully understand this other systems, I need to investigate further, interviewing the application developers, users, and leaders of other organizations.

Beyond these challenges, I think that this project has opened up a wide variety of new angles for research. Not only are there a multitude of other participants or even sites for researching a similar topic, I think there's a real opportunity to do more in-depth research in the kinds of resources organizations are using or are provided as they develop a mobile application (or otherwise). Are these resources helpful? In some ways I'm sure they are, but could they be more useful? And if so, how? Additionally, this project expands our perspective of what motivates use: beyond functionality and ease of use, what informs habits across ecologies of communication? And conversely, what are some of the breakdowns beyond duplication, pertinence, and personalization that impacted the community of users who participated in this study? What of issues of access and

accessibility? Broadly, I hope that this piece serves as an extension of Beck's (2013) reminder of Selfe and Hawisher's call for the field: that the most important aspect of our research of technology is our research of *people*, and our most important questions revolve around if technologies allow us to participate, communicate, and exist in the world in ways most want and useful by our own definition.

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Appendix A

Interview questions from follow-up/user interviews (censored to remove identifying information of the organization):

1. What information are you most often trying to gather when you consult [the organization] communication platforms? Essentially, what are the tasks you're trying to get done when you consult these platforms?

2. How do you currently retrieve this information? Are there particular times of day or days of the week? Are there particular, physical locations? What do you use to retrieve that information?

3. What information are you most often trying to gather when you consult [the organization] communication platforms? Essentially, what are the tasks you're trying to get done when you consult these platforms?

4. How do you currently retrieve this information? Are there particular times of day or days of the week? Are there particular, physical locations? What do you use to retrieve that information?

5. What do you most often consult when you're trying to retrieve information on an upcoming event?

6. What do like about using that particular communication platform?

7. What do you find difficult in using that particular platform? Can you show me what's frustrating about this process, if anything?

8. What could be better about how you do this?

9. Approximately how long have you been a [member of the organization]?

If the interviewee has used the mobile application:

1. What do you most commonly use in the application and why?

2. What aspects of the application do you use most often, why, and can you show me how you use it? Can you show me what's frustrating about this process, if anything?

3. What do you like most about using the application?

4. Are there particular times of day or days of the week? Are there particular locations you most often use the application? Describe these settings or scenarios to me.

5. In what ways could the app better enable you to do what you want to do?

Appendix B

Survey consent form and questions (censored to remove identifying information of the organization):

Consent to Participate in a Study
 Researcher: Kathleen Coffey, M.A., coffeykm@miamiOH.edu

Hello,
My name is Kathleen Coffey--I am a PhD student at Miami University. I am conducting a study with [organization] to better understand communication preferences with consent from the Institutional Review Board at Miami. The study includes a brief ~10 minute survey that focuses on considering your preferences for obtaining and engaging with information from the parish. Your feedback will help [the organization] better meet your needs in regards to communicating with parishioners. Your participation in this study is voluntary. You are free to decide whether to participate or not, and you may withdraw without penalty at any time during the study. You may decline to answer specific questions but still answer other questions if you want to participate.

You may be contacted for a brief, follow-up interview (~15 minutes) if you provide your contact information in the survey on your experiences and feedback. We very much appreciate your time and feedback! If you later decide that you do not want to participate, you may withdraw from the study at any time. If you later decide you would not like me to use any of your responses, you can also withdraw from the study once you have submitted your answers by contacting me at 513-529-5221, coffeykm@miamioh.edu, or 356 Bachelor Hall, Miami University, Oxford, OH 45056.

Questions or Concerns? If you have questions about this research, you may contact me, Kathleen Coffey at 513-529-5221 or by email at coffeykm@miamioh.edu. Or you may contact my faculty advisor, Dr. Michele Simmons at simmonwm@miamioh.edu. If you have questions about your rights as a research participant, please call the Office of Advancement of Research and Scholarship at 513-529-3600 or email: humansubjects@miamioh.edu. Thank you for your participation. I am very grateful for your help. I am happy to share the results of my study with you, if you request.

Consent Form I understand that by continuing on to the survey, I am submitting my consent. I am agreeing that I am over 18 years of age. I understand that I will not receive any form of compensation for participating in this study. I understand that I will be given a pseudonym in presentations and publications of my comments or answers. I understand that even if a pseudonym is provided, I may still be identified. I understand that by providing my contact information for a follow-up

interview, I may be contacted for a brief interview, but that I may decide later to not complete the interview or may skip a question at any point.

Page Break ————————————————————————

Q4 Of the following methods, how would you rate them in terms of **preference**? If you've never used a method or channel before, please select N/A.

	Do not prefer (1)	Prefer slightly (2)	Prefer a moderate amount (3)	Prefer a lot (4)	Prefer a great deal (5)	N/A (6)
During Mass (1)	○	○	○	○	○	○
Sunday bulletin (2)	○	○	○	○	○	○
website (3)	○	○	○	○	○	○
mobile application (4)	○	○	○	○	○	○
Parish newsletter (5)	○	○	○	○	○	○
Fliers or posters (6)	○	○	○	○	○	○
Electronic sign outside church (7)	○	○	○	○	○	○
Facebook (8)	○	○	○	○	○	○
Twitter (9)	○	○	○	○	○	○
Telephone (10)	○	○	○	○	○	○
Email (11)	○	○	○	○	○	○
Mail (12)	○	○	○	○	○	○
Word of mouth (13)	○	○	○	○	○	○
Other (14)	○	○	○	○	○	○

Q6 How do you or how would you **most** prefer to receive information from the parish? Pick one.

○ During Mass (1)

○ Sunday bulletin (2)

○ [org.] website (3)

○ [org.] mobile application (4)

○ Parish newsletter (5)

○ Fliers or posters (6)

○ Electronic sign outside of church (7)

○ Facebook (8)

○ Twitter (9)

○ Telephone (10)

○ Email (11)

○ Mail (12)

○ Word of mouth (13)

○ Other (14) _____

- -

Q7 Thinking about your most preferred method for receiving information (${Q6/ChoiceGroup/SelectedChoices}), why do you prefer that method the most? Please provide specific details.

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Page Break

Q9 How do you or how would you **least** prefer to receive information from the parish? Pick one.

○ During Mass (1)

○ Sunday bulletin (2)

○ website (3)

○ mobile application (4)

○ Parish newsletter (5)

○ Fliers or posters (6)

○ Electronic sign outside of church (7)

○ Facebook (8)

○ Twitter (9)

○ Telephone (10)

○ Email (11)

○ Mail (12)

○ Word of mouth (13)

○ Other (14) _____

- -

Q10 Thinking about your least preferred method for receiving information (${Q9/ChoiceGroup/SelectedChoices}), why do you prefer that method the least? Please provide specific details.

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_____

Q3 What describes how you most often **hear** about [organization] news, events, updates, and other information using the following methods? If you've never used a method or channel before, please select N/A.

	Never (1)	Sometimes (2)	About half the time (3)	Most of the time (4)	Always (5)	N/A (6)
During Mass (1)	○	○	○	○	○	○
Sunday bulletin (2)	○	○	○	○	○	○
website (3)	○	○	○	○	○	○
mobile application (4)	○	○	○	○	○	○
Parish newsletter (5)	○	○	○	○	○	○
Fliers or posters (6)	○	○	○	○	○	○
Electronic sign outside church (7)	○	○	○	○	○	○
Facebook (8)	○	○	○	○	○	○
Twitter (9)	○	○	○	○	○	○
Telephone (10)	○	○	○	○	○	○
Email (11)	○	○	○	○	○	○
Mail (12)	○	○	○	○	○	○
Word of mouth (13)	○	○	○	○	○	○
Other (14)	○	○	○	○	○	○

Q5 How would you rate the following in regards to how **easy** it is to find the information you want through the following methods? If you've never used a method or channel before, please select N/A.

	Very Easy (1)	Easy (2)	Neutral (3)	Difficult (4)	Very Difficult (5)	N/A (6)
During Mass (1)	○	○	○	○	○	○
Sunday bulletin (2)	○	○	○	○	○	○
website (3)	○	○	○	○	○	○
mobile application (4)	○	○	○	○	○	○
Parish newsletter (5)	○	○	○	○	○	○
Fliers or posters (6)	○	○	○	○	○	○
Electronic sign outside of church (7)	○	○	○	○	○	○
Facebook (8)	○	○	○	○	○	○
Twitter (9)	○	○	○	○	○	○
Telephone (10)	○	○	○	○	○	○
Email (11)	○	○	○	○	○	○
Mail (12)	○	○	○	○	○	○
Word of mouth (13)	○	○	○	○	○	○
Other (14)	○	○	○	○	○	○

Q8 Thinking about the method you most prefer to receive information from (${Q6/ChoiceGroup/SelectedChoices}), what is there, if anything, that you dislike or find confusing about this method? Please provide specific details.

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Q11 Thinking of the method(s) you rarely use or do not prefer, what would make you use or consult them more often? Please provide specific details.

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Page Break

Q12 What is your preferred device for receiving information or news about [the organization]? Pick one.

○ Computer/laptop (1)

○ Mobile phone/smart phone (2)

○ Tablet (3)

○ Other (4) _____

Page Break

Q13 If applicable, how do you most typically use your computer/laptop on a daily basis? Pick one.

○ Internet searching for research or interests (1)

○ Communicating or checking in with family, friends, or groups on social media sites (e.g. Facebook, Twitter, etc) (2)

○ Sending and checking email (3)

○ I do not own a computer or laptop. (4)

○ Other (5) _____

Page Break

Q14 If applicable, how do you most typically use your mobile phone/smart phone on a daily basis? Pick one.

○ Internet searching for research or interests (1)

○ Communicating or checking in with family, friends, or groups on social media site applications (e.g. Facebook application, Twitter application, etc) (2)

○ Sending and checking email (3)

○ I do not own a smart phone or mobile phone. (4)

○ Other (5) _____

- -

Page Break ————————————————————————————————————

Q15 Have you heard of the [the organization] mobile application before this survey?

○ Yes (1)

○ No (2)

Page Break

Q16 Have you downloaded the mobile application?

○ Yes (1)

○ No (2)

Page Break ───

Q17 The [organization] mobile application allows you to stay connected to the parish, stream masses, and view videos, prayer passages, and more through a mobile device. Now that you know a bit more about the application, would you be interested in downloading it?

○ Yes (1)

○ No (2)

Page Break

Q18 Now that you know a bit more about the application, what, if anything, is there about the mobile application concept that you like?

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Page Break

Q19 Now that you know a bit more about the application, what, if anything, is there about the mobile application concept that you dislike?

_____

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Page Break

Q20 Why did you download the mobile application? Please provide specific details.

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Page Break

Q21 How have you used the mobile application? Please provide specific examples or details.

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Page Break

Q22 What would you like to do, if anything, using the application that you are currently not able to do? Please provide specific examples or details.

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Page Break

Q23 What challenges, if any, have you encountered with the mobile application? Please provide specific examples or details.

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Page Break

Q24 What are some reasons you have not downloaded the mobile application?
Please provide specific details.

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Page Break

Q2 What category describes your age?

○ 17 years old and below (1)

○ 18-24 years old (2)

○ 25-34 years old (3)

○ 35-44 years old (4)

○ 45-54 years old (5)

○ 55-64 years old (6)

○ 65-74 years old (7)

○ 75 years or older (8)

Q25 We hope to use your feedback to inform future decisions about how we communicate with the parish and the platforms we use. We'd appreciate hearing more of your experiences and thoughts about [the organization's] communication methods.   Please provide your contact information below (name and email or phone number) if you're interested in being contacted for a brief interview.
If you're not interested in being contacted for a brief interview, please respond with N/A.

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Q26 If you have any other feedback about the parish's communication methods, please provide it in the space below. If not, please respond with N/A.

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Q27 Thank you for taking this survey. Your feedback and insights will help us make changes in the future about our communication methods and platforms. Please click the arrows below to complete the survey and submit your responses.

End of Block: Default Question Block

Appendix C

Table referring to ease of use of the channels and media developed by the organization:

#	Field	Very Easy		Easy		Neutral		Difficult		Very Difficult		N/A		Total
1	During Mass	32.54%	55	27.81%	47	23.67%	40	8.28%	14	2.96%	5	4.73%	8	169
2	Sunday bulletin	50.00%	86	36.63%	63	8.72%	15	1.74%	3	1.16%	2	1.74%	3	172
3	website	12.35%	21	36.47%	62	35.29%	60	10.00%	17	2.94%	5	2.94%	5	170
4	mobile application	4.76%	8	7.74%	13	19.05%	32	4.17%	7	1.19%	2	63.10%	106	168
5	Parish newsletter	20.00%	34	30.00%	51	31.76%	54	4.12%	7	1.18%	2	12.94%	22	170
6	Fliers or posters	10.00%	17	22.94%	39	39.41%	67	11.76%	20	1.76%	3	14.12%	24	170
7	Electronic sign outside of church	18.93%	32	39.64%	67	24.26%	41	8.28%	14	2.96%	5	5.92%	10	169
8	Facebook	7.06%	12	15.88%	27	18.24%	31	5.29%	9	3.53%	6	50.00%	85	170
9	Twitter	2.37%	4	2.37%	4	5.92%	10	4.14%	7	8.88%	15	76.33%	129	169
10	Telephone	2.99%	5	13.77%	23	21.56%	36	13.17%	22	5.39%	9	43.11%	72	167
11	Email	30.00%	51	42.94%	73	17.06%	29	0.59%	1	2.35%	4	7.06%	12	170
12	Mail	17.37%	29	47.31%	79	22.16%	37	4.19%	7	2.40%	4	6.59%	11	167
13	Word of mouth	7.74%	13	25.00%	42	33.93%	57	12.50%	21	9.52%	16	11.31%	19	168
14	Other	8.51%	4	4.26%	2	0.00%	0	0.00%	0	2.13%	1	85.11%	40	47

Appendix D

Table offering practices and strategies for mobile community engagement referenced in chapters 4 and 5.

Stages of Mobile Community Engagement	Practices and Strategies
Assess Your Assumptions	**Solidify Definitions and Assumptions** – Develop as a team an idea of what you think mobile communication can offer your organization and its members. **Build Goals for Mobile Communication** – Broadly, consider what do you hope to accomplish through mobile interfaces? What do you think a mobile application will allow for in your context? What are the benefits of a mobile application versus a mobile site?
Identify Habits Across the Communication Ecology	**Assess your Communication Landscape** – Review the other communication methods and models that the organization already uses: what are the strengths and weaknesses within these methods? What can a mobile approach offer beyond quick and ready access to information? **Get Iterative Feedback from the Community** – Throughout the entire development process, get feedback from your community members. Always keep in mind, will this be a beneficial tool for them? If so, how?
Develop Novel Mobile Experiences	**Build Experience Based in Observed Preferences** – Use surveying or other methods to help connect your plans to what members of the organization are saying they would prefer or desire within an application rather than relying on assumptions of what mobile experiences can offer. **Create a New Experience** – Based on user research and feedback, make the mobile channel distinct from other channels. Users were not convinced as to the value of a mobile version of content that was *only* duplicated across channels, but instead in some cases were hoping for access to resources along with different functionality.
Build Connectivity Across Your Channels	**Integrate Communication Channels** – Build connections across your platforms and channels. Use the pathways that already exist and are valued by the community to connect newer channels. **Build Value into Marketing** –Throughout communication channels, offer what a mobile channel can provide for members that other channels can't.

Stages of Mobile Community Engagement	Practices and Strategies
Continue to Seek Feedback from the Community	**Implement a Long-term Feedback Plan** – Make sure to include an option for users to offer feedback on your new channels on the channel itself. Provide a feedback section on the application or an email for members to suggest improvements or mention any system errors they're experiencing. Construct a plan to review this feedback throughout the year (I suggest to look at feedback every 1-3 months, depending upon how much feedback you receive). **Develop a Plan for Assessment** – Lastly, I highly recommend that the organization develops a formal plan to assess the success, based on whatever measures the organization deems suitable (e.g. download counts, surveyed responses, etc.), of the application and refine it over time. Come back to this channel in the future and determine if its current state is most effective for members.