

# Technology in Spiritual Formation: An Exploratory Study of Computer Mediated Religious Communications

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## ABSTRACT

In this paper, we report findings from a study of American Christian ministers' uses of technologies in religious practices. We focus on the use of technologies for spiritual purposes as opposed to pragmatic and logistical, but report on all. We present results about the uses of technologies in three aspects of religious work: religious study and reflection, church services, and pastoral care. We end by examining how the collaborative religious uses of technologies cross and blend work and personal life.

## Categories and Subject Descriptors

H5.m. [Information interfaces and presentation (e.g., HCI)]: Miscellaneous.

## General Terms

Human Factors

## Keywords

Spirituality, user experience, religious technologies

## 1. INTRODUCTION

In the last decade, we have witnessed computer systems migrating out of the office into other parts of people's lives. CSCW and HCI research has followed a number of those paths, exploring the use of technology to coordinate domestic life, for play, and for interaction in public spaces. Despite this, the collaborative use of technology in religious life remains largely undocumented.

More than simply adopting software to run the "church business" (e.g., accounting functions), religious institutions have also adopted technology into spiritual practice. Today, ministers podcast sermons to distant listeners, share the words to hymns using computer-based presentation tools instead of traditional hymnal books, and send requests to pray via email. Yet, despite this uptake of technology in service of worship, we know little about how these systems support collaboration between ministers and the laity. We also do not understand the challenges that users

face when appropriating technologies for spiritual purposes that were largely designed for office-based work.

This paper begins to fill this gap in our knowledge by presenting findings from an empirical study of how pastors use technologies to support their own and their laity's *spiritual formation*. We use the term spiritual formation following in the Christian tradition, which defines it as an intentional process by which individuals transform their lives through prayer, study, reflection and discussion with their faith community. We focus on spiritual formation because it involves a significant amount of communication and collaboration. Further, pastors play a significant role in this process: supporting, coordinating, and leading various aspects of spiritual formation.

We begin by discussing the results of previous research focused on the religious uses of technologies. Next, we describe our research that explored how church leaders have adopted technologies to coordinate and communicate with their congregations. We present results about the uses of technologies in three aspects of religious work: religious study and reflection, church services, and pastoral care. We end by examining how the collaborative religious uses of technologies cross and blend work and personal life.

## 2. TECHNOLOGY AND RELIGION

In this section, we describe previous work that has examined the role of technology in religious practice. We also reflect on recent reports that argue that the use of computers, and in particular the Internet, for religious purposes, is on the rise in the United States. Finally, we argue that the examination of the collaborative aspects of religious practice offer a unique lens through which to consider computer supported cooperative "work".

### 2.1 Studying Religious Uses of Technology

Religion has been the subject of much scholarly study, particularly within the historical, sociological, and anthropological traditions. Within the scope of this paper, it is impossible to summarize the entirety of that discourse, but it has provided useful framings for this work.

An early question for us was how to orient to the topic at hand. Scholars have taken a variety of positions towards the study of religion; ultimately we decided to follow a neutral stance (often attributed to Durkheim [8]). Specifically, it shifts focus from belief to practice by deemphasizing questions of whether religious beliefs are true, false, or within the scope of the teachings, and instead opening up questions about how religious groups are

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socially organized and serve as communities of practice for their members [12,27].

We followed this approach and focused on the role of technology in religious practice. Our focus on the social organization—specifically, its collaborative aspects—that supports and sustains spiritual formation afforded us the opportunity to understand how technology enhances the processes through which people attain spiritual self-awareness. It also supported the identification of sources of tension in the adoption and use of technology within those same practices.

Scholars have also documented religious institutions' critical examination of technologies [6]. For example, the printing press changed book production by increasing both the volume and manufacturing speed, and resulted in Bibles being widely available. This availability, as well as who controlled the means of production, caused some religious institutions to examine the relationship of this technology to their religious practices [29,33]. In the last century, Christian institutions and individuals have also examined “modern” technologies such as the telephone (see for example, [10]). More recently, critiques have focused on televangelism: the use of television to support religious practice (particularly worship). In particular, some have been concerned that the television distances its viewers from the message, and consequently argue that it disrupts the spiritual formation process [35]. The argument turns, in some part, on the idea that technology separates the individual from religious practice by mediating it in non-spiritual ways.

Despite these concerns, religious institutions have often been innovators, adopting new technologies to support religious practices (see for example religious TV and radio broadcasting [5]). Today, the theological community experiments with Internet-based technologies. Much of the work to date has focused on distance learning (see for example [1,9,13,18,21,45]). Theologians, especially those teaching at seminaries, have reported results from distance learning experiments that leveraged the World Wide Web, email and chat room technologies. One common feature of these studies is the focus on teaching future ministers, and has an emphasis on skills for leading theological and spiritual formation discussions. By contrast, this study focuses on the use of technology by ministers to communicate with (and to teach) their laity.

Online religious communities have been another focus for scholars [4,6,7,26,28]. Studies in this genre have focused on exploring religious practice within online community settings. One common finding within this tradition is that of leveling—that the organizational hierarchy is flattened online raising questions about control [22]—an argument that has been made about other electronic technologies in the office setting [38]. However, this leveling effect is not always desirable, particularly when it comes into direct conflict with practices that turn on a hierarchy of authority in order to have meaning [7]. In this line of research, we also found one example of a device designed to promote the spirituality of online worship [19], perhaps in response to the perceived spiritual leveling of the online worship experience.

An interesting “gap” remains in our knowledge of the religious uses of technology. Specifically, how have people incorporated networked technologies into the physical real-world religious practices (although see Bell's [3] work regarding technology use in religious practice in Asia). This study begins to fill the gap in our knowledge by describing the role of technology in religious practice in American Protestant Christian churches.

## 2.2 Why Now?

This gap in our understanding of technology-based religious practice is particularly surprising in the context of the United States. It is widely recognized that the U.S.—unlike many European countries—has a high percentage of its population actively practicing a religion [12] as well as a high degree of technology ownership. Indeed, the Pew Foundation's Internet and American Life Project found that 64% of the nation's 128 million Internet users have used the network for religious purposes [20]. This includes activities such as receiving and sharing email with spiritual content, searching for places to attend services, made or responded to a prayer request online and so forth. The report offers a comparison by commenting that more people have gotten religious or spiritual information online than have used Web auction sites, traded stocks online, or done online banking [20].

Furthermore, in their earlier report, they contacted 1,300 congregations to survey the use of technologies by those churches [32]. Even in 2000, their findings suggest that email was integrated into congregational life, including exchanging messages with ministers. Ministers themselves were also searching the Web for a variety of material for incorporation into services and answers on matters of doctrine. Finally, many of the churches in the survey had also created Websites. These Websites served at least two audiences: new members and the current congregation.

This integration of technology into physical religious practice has been observed in studies of other systems. For example, Bruce's [5] studies of televangelism estimated that the most popular shows had an average audience of about 8 million, and that in a typical month at least 34 million different households watched at least one show. Others argue, however, that these watchers were also typically regular “church-goers”; they physically attended church services and used television to complement their other religious practices [17].

Another new trend in worship also makes the study of religious use of technology relevant: the rise of the megachurch. Although large churches have existed for centuries, recently they have exhibited significant growth. These new megachurches have large congregations, new buildings (often including sports complexes, daycare facilities) which are built for technology from the ground-up [12,40,41]. Megachurches have aggressively adopted a variety of technologies to communicate and coordinate religious practice. Some megachurches use this technology to create an experience designed to resemble a more corporate “look and feel” which may appeal to parishioners who find the traditional imagery of churches such as stained glass and the cross uncomfortable [39]. During this study, we attended services in some megachurches and were able to witness first-hand the uses of technology, which we describe in this paper. Of course, not everyone finds megachurches' uses of technology appropriate [36].

In part because of their size, the leaders of megachurches have drawn on corporate mechanisms for managing their congregations [39-41]. One widely cited reason for megachurches to manage their congregations is to ensure that each member of the laity feels personally connected to the church and a pastor. We wondered whether and how megachurches used technology for these purposes, and whether it was similar to corporate adoption practices [38,44]. Also, we wondered whether these practices manifested themselves in traditional churches.

In summary, while debates continue about the rights and wrongs of using technology in religious practice, questions remain about the actual *experience*. In particular, how do those charged with delivering spiritual formation—ministers—use technology? What do they find challenging, and how do they try to support and enhance the spiritual formation of their congregation while avoiding the potential distancing problems of technology? This study contributes empirical data to the discussion surrounding the uses of networked technologies in spiritual formation. Beyond that, understanding religious practice provides a reflexive tool for thinking critically about collaboration. While spiritual formation is collaborative, it has different “goals” from the secular home and workplace coordination traditionally studied within CSCW. We offer this study as a new perspective on the uses of familiar technologies such as email, the WWW, and PowerPoint. Finally, we seek to discuss religious practice as a component of the full range of human interaction, despite the sensitive questions that this topic potentially raises for readers—and authors—of this paper. Our goal is to begin the process of making religious technology a part of the discourse within CSCW.

### 3. METHODS AND PARTICIPANTS

In this section, we describe our methodological approach and characterize the churches that our participants represented.

#### 3.1 Methods

Given our interest in the role of technology in the spiritual formation of the laity and yet not understanding precisely how this topic ought to be approached, we decided to begin with a qualitative interview study of ministers. Ministers have the responsibility for growing and nurturing the spirituality of their laity, and consequently, we believed that they would be most able to help us learn about the role of technology in that process. Specifically, senior pastors responsible for the spiritual formation of their laity are often key decision makers in the adoption and use of technologies for religious purposes. Thus, this study was focused on exploring how pastors use technology for pastoral care and spiritual support both within their congregations and when interacting with people from outside the congregations to gain insights into designing interactive systems for spiritual and religious purposes.

The study consisted of two data-analysis cycles, in which the data collection consisted of interviews [23]. First, we conducted a series of semi-structured broad topic interviews to get a sense for how church leaders were using technology and to help the researchers become familiar with the terminology used in churches. Learning how to ask appropriately phrased questions was critical in developing sufficient rapport with the interviewees such that they trusted us to respect their feelings about technology and spirituality. At the end of the first cycle, we analyzed the data for promising areas of inquiry and revised our interview guide to reflect these areas. Additionally, we also rephrased some of our questions to reflect more accurately the terminology that characterized the process of spiritual formation.

At the end of the first cycle, we also sampled the World Wide Web for churches that would form the main part of the study. Specifically, we approached churches with Websites that included a pastor’s e-mail address and contacted that individual. The initial e-mail was followed up by a phone call or fax. Out of the approximately 10,000 churches in the metro-Atlanta area, 84 were

selected and contacted, 13 pastors agreed to be interviewed, 11 declined, and others failed to respond.

Interviews, in both the first and second cycles, lasted approximately an hour and took place in the pastor’s office. Our interviews began with questions about the participant’s work, as a means of setting the context for the remainder of the interview. Additionally, we wanted to begin with a question that communicated to pastors that we were interested in and wanted to learn from their experiences. The majority of the interview focused on the role of technologies in the spiritual aspects of their job, such as the use of technologies in sermons and computer-mediated prayer. We deliberately used the word technology—rather than computer—to broaden the scope of the study and to understand further what ministers would include in that definition. The interviews concluded with a speculative design exercise, asking pastors to imagine technologies they needed or that could be designed for their churches.

We complemented the interviews with visits to the Atlanta metro-area’s largest and most technologically advanced megachurches. We attended services, and took notes—after the service was completed—about the religious uses of technology we observed. Additionally, we also tried to capture information about the parishioners’ behavior, and the overall worship experience. These notes served three purposes. They helped us to refine our ideas about technology in religious practice, suggesting directions for questions in the interviews. They also helped us to understand what it might be like to be the audience of those technological-religious practices. Finally, the experience of attending church helped ground us in the very religious practices meant to serve as the basis for the interviews.

In addition to interviews and observation, we supplemented this data with other occasions to consider religion. For example, we watched religious programming on television. We also visited Christian bookstores to see what types of materials they had—particularly those that spoke to the presence of technology in Christian life such as software and DVD’s. These opportunistic activities also served to ground us in technology in religious life.

#### 3.2 Participants

Having decided to focus on pastors, we also decided to focus on Christian Protestant denominations. We chose this sub-group for three reasons. First, Protestant Christians are predominant in the metropolitan area of this study. This increased our likelihood of finding people who would be willing to talk to us about the role that technology plays in religious life.

Second, we believed that this cluster provided important balance between commonality and diversity. On the one hand, each church and congregation differed in composition and spiritual needs, despite similar religious foundations. Consequently, we were able to explore a variety of viewpoints. At the same time, the common ancestry that these denominations share provided us with some similarity among the religious practices on which we focused in this study. We wanted to gather diverse material about practices while having a grounded means to compare across the interviews and observations we conducted.

Third, some members of the research team had in depth knowledge of Protestant Christian practices. These team members played an invaluable role in explaining the practices that we were seeing in the services and hearing about from the pastors

interviewed. Their knowledge and connections also provided increased entrée into these communities. Of course, the other team members whose religious backgrounds either came from other traditions or who were agnostic provided an important questioning role. Their questions not only helped us to examine the practices closely, but also surfaced assumptions on which those practices are based.

We were fortunate to have a variety of perspectives through the composition of the team itself. It was noticeable to us all during the course of doing this work that our own religious biographies became a necessary part of working together. That we had religious-biographic discussions in our workplace was one unusual but necessary feature of conducting this research. We were all reminded of the distinction between what typically is discussed at work, and what is not.

We asked the thirteen pastors interviewed in the main part of the study to tell us how many people belonged to the church. Two of the churches reported having less than 1,000 parishioners. Five churches had between 1,000 and 2,999 members. Six churches reported having congregations of more than 3,000, with one having 5,000 members. Although megachurches are often characterized as being much larger than any of the churches in our study, others have offered 2,000 members as an approximate size [39,40]. Further, we used observations of Atlanta's biggest churches to confirm that some of the patterns, and particularly technology uses, we saw and heard about in our interviews, were very similar to religious uses of technology in megachurches.

Our participants came from Protestant Christian churches associated with the Southern Baptist Church, United Church of Christ, Episcopal Church, United Methodist Church, Evangelical Lutheran Church in America, and Presbyterian Church. In addition to ranging in size, they also varied along other dimensions. Of the thirteen churches, eleven had predominantly Caucasian members, while the other two had predominantly African-American parishioners. Although we had hoped for more African-American church participation in this study, we were glad to have some reflection of the demographic profile of the metro-Atlanta area. The participant churches varied along sub-urban and urban dimensions too. We characterized the difference by using the Atlanta city boundaries (like many large cities in the United States, much of metro-Atlanta is not politically in the City of Atlanta). We interviewed ministers at six urban churches and seven suburban churches.

In one dimension, the included churches did not vary—they all used a variety of technologies to support a range of different religious activities. Because we wanted to examine technology uses, we used the World-Wide Web to sample for potential participants. Consequently, we suspect that those ministers who participated in interviews are more enthusiastic about technology than a randomly chosen group of churches, because they all had Websites. Indeed, given the nature of our research question, we wanted ministers and church groups who were actively exploring technology. Additionally, given the costs of technology (and connectivity) we also assume that we have a sample skewed towards wealthier congregations that would have provided the financing for the installation, maintenance, and upgrading of these technological systems.

We describe the religious uses in more detail in the next section. However, to set the context for that discussion we briefly

enumerate some of the practices we saw and heard about during our interviews. All of the churches used the World Wide Web to attract new members and to communicate to the congregation about upcoming services and events. Many offered a downloadable newsletter, in addition to offering the newsletter physically. Some provided email access to the clergy, so that laity as well as outsiders (including members of the research team on this project) could contact ministers. Some churches produced audio and video versions of the sermons, and following the most recent technology trends, a few churches had official blogs and podcasted a variety of media, including sermons. At the church, we saw projected materials (rather than spoken only sermons). Sometimes this projection left the sanctuary (the area within the church where services are held), in the form of a closed-televized broadcast to satellite locations or a webcast audio and/or video stream.

It is evident from our interviews, observations, and existing survey data that technology has made significant advances in integration into spiritual practices in the United States. With this work, we present a basis for continued research in understanding how these technologies affect the experience of users and their interactions with their faith communities.

## 4. RESULTS

In this section, we present our results organized into three topic areas. First, we describe the common work functions of the pastors we interviewed: education, preaching and pastoral care. We also describe how they have incorporated technology into their work researching and preparing sermons, as well as working on their own spiritual formation.

In the following two sections, we describe two types of communication and collaboration reported by the pastors. We then examine the impact of technology on that work. First, we examine the role of technology, particularly presentation and projection systems, on the preaching activity. While projection systems are relatively common in churches, pastors in this study told us that those technologies were a source of tension. This tension turns on an emerging divide among the laity as to the role of technology in homiletics.

We discuss the role of email in pastoral care in section 4.3. The increased ubiquity of email has allowed pastors and parishioners to have greater contact with each other. However, it is this increased connectivity that seems to be blurring the temporal and geographic lines that once separated religious activities from workplace and other contexts. This blurring raises questions about appropriate (formal or social) uses of office communications systems for religious pursuits.

### 4.1 Pastoral Work and Technology

In our interviews, we began by asking about the types of work that pastors do to understand how technology might influence their activities. Most pastors responded with a potentially unsurprising list of duties including educating the laity through mechanisms such as Bible study groups, preaching which largely focused on the Sunday service communications, and pastoral care of the laity such as visiting sick parishioners or counseling those in spiritual or personal crisis. Participants reported uses of technology in all of these roles.

Away from these spiritually focused activities, most pastors described a variety of administrative duties. Interestingly, in this

context, some pastors chose to draw on office-based metaphors. For example, one pastor noted:

“Senior pastor is comparable to being a CEO of a company, you are the chief operating officer... in terms of everything that happens, in terms of executive...”

-- *Pastor, large church.*

Some pastors managed several staff members directly, and some even managed their own Information Technology staff. These staff members tended to be responsible for ensuring that the churches' Web, email, and other technologies were all operational. This type of corporate orientation to church management seems particularly to be associated with mega-churches, where as The Economist [39] notes, some ministers have even taken to calling themselves “Pastorpreneurs” and using CEO and COO titles. For the study of religious technologies, this presence of corporate terms to describe the business of serving religious customers, suggests that in some cases, the design, adoption and use of systems in churches will have a complex grounding in business *and* spiritual backgrounds. In this study, the presence of both required a conscious focus to understand in what ways each type of orientation was being used to articulate the role of technology in religious practice.

During the interviews, we also asked them to describe their relationship with technology (which we did by asking them about the technologies they owned and used as well as asking more broadly about how they felt about the presence of systems in their work lives). We deliberately used the term technology rather than computer or software to leave the answers open to hearing about anything that the pastors thought was technology. Unsurprisingly, they varied in their personal uses of technologies and how comfortable they felt with technology in general. Some pastors reported feeling at ease with technology, and owned and used PDA's or mobile phones where they kept contact information about their laity and staff. One minister even used his mobile phone to manage contacts for more critical pastoral care. Specifically, he filled his address book with the names and numbers of people who he believed needed contact regularly or frequently because of their circumstances.

Some of the pastors also described using Bible software (CD's that contain multiple versions of the Bible and other religious documents), and the World Wide Web as research tools for writing sermons. This research was widely reported by the participants as a positive use of technology, giving pastors the ability to draw on previously unavailable sources (for them) in composing their sermons. For example, both specialized software packages and the Web generally allow ministers to access a much greater range of Bible editions than they typically own in book form. Pastors we interviewed mentioned drawing on this information to craft their sermons, to present a broader range of materials, to argue points in more detail, and to set contexts for their services.

Although all the pastors reported enjoying using the Web and software for their research, they differed widely when asked whether they would use these same online resources for private Bible study and reflection. While some mentioned reading online comfortably, others preferred to read from their physical Bibles. For some this was not just a matter of simply finding it hard to read onscreen, but also more a matter of the overall experience of private reflection. According to these individuals, the computer, even a laptop, did not fit into the spiritual experience of Bible reading and reflection. As one pastor put it:

“Sitting here like this, or even sitting on my laptop at home, or against the wall, is a very different experience than sitting curled up on the couch with my Bible and my prayer book or sitting in the chapel with my Bible or my prayer book.”

-- *Pastor, small church.*

These pastors all had a heightened sense and ability to articulate questions of appropriateness in use when it came to the relationship between reverence for the situation at hand and the use of technology in that context. Their ability to articulate and frame questions of spiritual use is one reason why we believe the study of religious technology to be important. Pastors—and all those who consciously make time for spiritual formation and reflection in their lives—provide another lens for understanding how technology gets adopted and used.

## 4.2 Preaching and Presentation

In both their educational and preaching roles, pastors referred to the need to communicate. This type of communication was dominantly one-to-many, with the pastor leading a conversation with an audience (of varying sizes according to the activity). This ratio was especially true of the preaching role, a role that was mentioned much more than their educational missions. The most commonly discussed technology used in this mode was some type of slide generation system such as Microsoft PowerPoint™.

However, there are some limitations to using slide systems designed for the office in sermons, and consequently a market for religiously orientated presentation software has emerged. Titles include Prologue Sunday Plus, SongShow Plus, and MediaShout. When we asked pastors about why they used these more specifically designed products, they all responded similarly:

“There are special things about it because they recognize that in churches that we need to switch often quickly between a video, the sermon notes, possibly a video camera that is going on, Media Shout enables you to see and then click to process what goes onto the projector.”

-- *Pastor, large church.*

In our observations and interviews, we saw and heard about the use of music, video and images, in addition to text in sermons. In other words, during our observations we saw images of both historic Biblical iconography and modern photography (e.g. picture of the modern view of an historical site), we watched video footage, and of course heard music to set further context as well as accompany singing where appropriate.

Although multi-media services are not impossible with PowerPoint™, it was the degree of control and manipulation provided by these other packages that appealed to pastors. The ability to project content on public displays while reserving a private screen for other types of manipulation and control is a central feature in religiously designed presentation systems. It is also a new feature in many office-presentation packages such as PowerPoint™ and Keynote™. Members of the church staff or laity often controlled the presentations themselves using these tools. The pastors, although not the people in physical control of the presentation, emphasized this feature as being central to allowing them to manage the sermon, to make it engaging and vivid to their laity.

The churches in this study required projection, audio-visual, and lighting systems to accompany their multi-media services. Our observations, although limited, suggested some differences in the installation and use of these systems across the churches we

visited. In particular, the size and age of the church building seemed to influence how easily and what types of technology could be incorporated into the sanctuary.

The largest and newest churches in the study (including all the megachurches) uniformly had comprehensive audio-visual, projection and lighting systems throughout the church. The sanctuary typically contained large public screens around the walls to allow all of the attendees to see the sermon as projection. These churches often also had televisions that broadcast the service into the church foyer and other smaller rooms. These simulcasts allowed people, who could not be seated in the sanctuary because it was full, to “participate” in the service. In one case, a megachurch also broadcasts the pastor’s service to another location several miles away, a satellite “campus” of this particular megachurch.

During the services we attended at these new megachurches, we were amazed by the production of the sermon itself. The sanctuaries typically do not have wooden pews (an image of a church experience that many members of the research team found more familiar), but had cinema style seats. During a service, the projected images vary from sermon content, the words to hymns, and even the pastor him or herself. Additionally, we observed the subtle but powerful use of lighting to coordinate the passage of the service. For example, during periods of singing we saw the lights rise to full bright levels. During times of prayer and reflection, someone (we are not sure whether it was the minister or some dedicated staff) dimmed the lighting to suggest time for silence and reflection. In addition to the direct communication of materials through the presentation and projection, lighting systems coordinated the flow and movement of each service, sending the audience, including the research team, messages about behavior, and appropriate action and interaction.

Like these new large churches, most of the smaller and older churches we observed also rely on projection systems and presentation software. Unlike the larger churches, their sanctuaries do not accommodate the projection systems nearly as seamlessly. For example, we saw cases where projection screens obscured other types of religious technologies such as candleholders and even the altar. Given the “difficulty” of making these technologies fit together in the space, we wondered why the leaders of these churches would go to such lengths to provide this type of experience even when it meant reconfiguring the sacred place of the sanctuary.

When we explored this issue further, the leaders of these smaller and older churches responded that they feel the need to provide these types of services, that these services have become an expected part of worship for some members of the congregation. At the same time, these leaders also face a challenge to balance the divergent service needs of their congregations between those who preferred a technology-free service (often termed “traditional” by pastors we interviewed) and those who wanted the technology-rich service (often termed “contemporary”).

As pastors in these churches described, this typically led to the following solution:

“We have two different services, and yes we use PowerPoint™ in the contemporary service and we have music on the screen, we use digitals and cameras and the whole business, and then in the traditional service we use microphones.”

-- *Pastor, mid-size church.*

Or

“In terms of computers and graphics, visuals, that sort of thing, you won’t find any of that in our traditional service, but in our contemporary service we have screens, words for the songs are projected on the screen during the ceremonies, there are visuals that are projected that illustrate or support what is being said.”

-- *Pastor, smaller church.*

These pastors reported a perceived demand among their congregation for technologically enhanced services; one that they often associated with the younger members of the laity. Frequently, the pastors interpreted their response to this demand as a need to be “relevant” to their congregation.

“I think that church 2005 can lose relevancy by expecting people to do things the way they did them in 1860, so if we are going to bridge the gap to reach 2005, then we have got to look at ways to be relevant, and so that is a big thing that we are always kicking around here, at the church, in my leaders meeting, in my staff meeting, ‘is that relevant, how do we connect that to the community?’”

-- *Pastor, smaller church.*

But this relevance also raised concerns, at least for some. For example, as one pastor put it:

“This is my struggle always, there is a fine line that I want to walk between being relevant and being reverent... what I mean by that is I think being relevant is embracing technology, and using it, but there is also the reverent side of the word of God”

-- *Pastor, smaller church*

For other pastors, the need to be relevant was combined with a sense that the introduction of these technologies allowed a greater range of dynamic visual aids. These aids go beyond those traditionally associated with services such as flowers, wall decorations, and the pastor dressed in official robes and were sometimes more dynamic and sometimes more specifically relevant to the story being told (e.g. images of holy places as they are today). These pastors noted that technology gave their services greater impact:

“People are very visual, what people see is very powerful... its one thing to hear, but to see and then the combination of seeing and hearing is very effective in terms of helping, making things get to the long-term memory, in terms of helping people connect and have a better understanding.”

-- *Pastor, smaller church.*

Interestingly this hypothesis has some correlation to the educational literature, which also suggests that visual aids reinforce concepts (see for example, [25]). For several pastors, these visual aids included references to popular culture, another mechanism by which to be “relevant”. Other church leaders reported a belief that these secular references and visual aids can be a distraction that may distance congregants from the church’s Biblical underpinnings.

“You know because there are certainly negatives to it, because it draws you away from contemplation, it can be an incredible distraction. There is less time sometimes for solitude.”

-- *Pastor, smaller church.*

One final consequence of the arrival of PowerPoint™ in projected services was the departure of another traditional service technology, the hymnal.

“...instead of using hymnals the words are broadcast on the screen. That was a real source of tension for a few people for awhile, you know the purists wanted the hymnal.”

-- *Pastor, mid-size church.*

Although we heard from some pastors that some of the laity felt uncomfortable with the loss of the hymnal, several pastors described the advantage of putting the words on the screen, which turned on flexibility. For example,

“It gives you flexibility to alter the text of songs. Say you are using an older hymn and you don’t like the fact that it uses Elizabethan English you can update that, you can even take a modern praise chorus and say I don’t totally like the theological bent of that so I will twist it in this other direction.”

-- *Pastor, larger church*

For some churches, those designed both physically and spiritually to accommodate the technologies of contemporary worship, whose congregations did not have a traditional option, nor did they seek one, the adoption and uptake of presentation, projection, audio-visual and lighting systems in service has been comparatively smooth. For many older churches, however, accommodating contemporary services, and even beginning to infuse the more traditional services with technological aids has not been as straightforward. The fit—the adoption and use of technologies, especially within the service—has divided the laity from many of the churches we spoke with into traditional and contemporary services. Whether it stems from the physical reprioritization of technologies, such as putting the projection screen in front of the altar thereby obscuring the cross, or whether it is the medium and content of the sermon, we do not know, but certainly the division into two services targeted at different groups within the laity suggests potential differences between how individuals view the role of computing technologies in worship. These choices are negotiations (some verbal, others playing out in the actions of the congregation such as which service they choose to attend) between the pastors and their laity. Through these negotiations, it is possible to explore the boundaries of what constitutes acceptable adoption and use of technologies, and also see that currently it is not a straightforward answer for many pastors who struggle to balance the competing beliefs of their laity.

### 4.3 Pastoral Care and Email

All the pastors we interviewed use email. One use of email is administrative, to coordinate the work of the church. This included email among the staff of the local church, but also, for some churches, communications with people in the broader organization to which that church belonged (such as a regional organization headed by a bishop). In this section, we focus on the other use of email, to communicate with the laity.

In addition to their educational and preaching work, all the pastors described community work that they do with their laity. Pastoral care includes visiting ill parishioners, counseling those who are in trouble, and more generally, providing for the spiritual care of the church community. All the pastors described this work as depending on communications with individuals, and consequently, it has a highly collaborative nature. The conversations at a distance are one part of the process, preceding physical visits. Ministers also described complex coordination tasks to schedule times to talk. One critical role that email can

play for pastors is as a medium for coordinating pastoral care opportunities with various parishioners.

“Well a lot of it, most of it is just what everybody else uses it for you know sending it out, can we get together next Thursday, or what or you doing this day.”

-- *Pastor, smaller church.*

One type of pastoral care function is a prayer request. Prayer requests involve asking members of the congregation to pray for someone else in the congregation, or a family member. The laity can initiate prayer requests, but the church staff and pastors typically play a central role in communicating the request to the rest of the community. For example, we conducted the bulk of our interviews in the direct aftermath of a national disaster in the USA, Hurricane Katrina, and we heard several examples of pastoral care in response to the emergency, including prayer requests sent to pastors for communication to the congregation:

“I have a mother that lives in Louisiana, she was displaced by Hurricane Katrina, pray for our family they have lost everything, how can you help us, and I can respond back and say yes we will pray for you. Yes we have these resources available”

-- *Pastor, smaller church*

In this example, email played a critical role in getting the information to the pastor who could disseminate it widely. Large churches have a particular challenge in this regard given the ratio of laity to clergy. One response that megachurches have developed to address this challenge has been to divide their congregations into smaller groups, each group then being associated with a member of church staff [39].

We also saw evidence of this type of arrangement in an interview with one of the largest churches in our study. They had developed an organizational structure of groups—tribes—each associated with a deacon.

“I receive all of our prayer requests by e-mail, ... we have a prayer team and they pray and then I get a copy of that which is updated weekly, our deacons, they do their tribe reports, I get over e-mail. Their tribes basically being the families they oversee, any concerns that I need to know about, if one of their tribe members is hospitalized or even if there is a celebration, one of their tribe members is celebrating 30 years of marriage, those things will come to me that way.”

-- *Pastor, very large church.*

The weekly reports delivered by the deacon to the pastor provided a mechanism to manage and issue prayer requests. This type of “reporting arrangement” to coordinate information did not come up in conversation outside pastoral care, which naturally emphasizes individual relationships between members of the laity and the church staff, but is particularly focused on the minister. Not only does email support the efficient communication of information about the laity to the pastor, others described how it provides rapid and global information dissemination

“there were people literally praying almost around the world, because we had people in India . . . were praying because they received the e-mail, and so they were in the prayer, we had some people from London that the e-mail was forwarded to, so they received it, so I think it opened up the network so much more for prayer, and plus it is a lot quicker than calling people, because we can send one e-mail from the office and within 2 minutes 45 or 50 people have the e-mail and they can begin to pray.”

-- *Pastor, smaller church.*

The use of email for prayer requests creates an interesting effect for the recipient, one of which some of the ministers were very aware, that the reader might be at work. For example, pastors said:

“We just had somebody that had surgery yesterday and so we sent out on the prayer chain through the internet, you know this is who is in need of prayer, so people will get it while they are working, e-mails will pop-up that kind of stuff. . .”

-- *Pastor, smaller church.*

And

“So what we are doing is acting as an information station, we are sending out the information ... so would you please pray, ...take your break at work and spend 10 minutes in prayer for this person.”

-- *Pastor, large church*

Significant to this analysis is the cultural tradition in the United States for corporations at least nominally to de-emphasize religion. Given the participant churches' location, it is reasonable to expect that the majority of the laity of these churches also live and work in the U.S. Despite this tradition, pastors often mentioned a hypothesis that their laity's email access might dominantly be at work, and work was a place where they would not only read but also respond to prayer requests. Thus, while corporations may be assuming that the separation of work and church is clear, these pastors are leveraging the fact that technology is increasingly blurring that distinction. Work is now a place where the call to pray arrives, and email facilitates that. In addition to prayer requests entering the workplace, email was also a conduit for sending other types of materials to work. For example, describing a sermon that he had given, a pastor told us:

“I had a woman that e-mailed me that afternoon saying she wanted me to send her a copy for her to use at work, and so Monday morning I came I e-mailed it [the requested text] to her.”

-- *Pastor, smaller church.*

Once, when computers originally entered the home, employees were able to blur the boundaries of home by bringing work to their domestic lives in the form of telecommuting [43]. This trend began to change when technologies, most particularly the Web began to play a role in domestic activities such as online banking [42]. Employees could now bank at work, bringing their domestic lives into the office. Pastors highlighted another type of boundary blurring between the places for secular and spiritual work. Religion's growing presence in the workplace may pose complicated questions for employers about the provision of resources for these types of use similar to those asked about use of corporate resources for other personal activities.

Counseling is another critical function within pastoral care. Although they reported the use of email to support this function, the pastors reported mixed uses of email for these purposes. They described situations during which it allowed them to have conversations that would otherwise have been impossible:

“A man that contacted us through our Website who said he was contemplating suicide and he wasn't a member of the church. You know my first thing was to ask him over e-mail if he had a therapist and he said he did, but he didn't feel like it was helping any, and I said well would you like to meet with me and he didn't want to meet with

me and he didn't want to give me his name, but we carried on a 3 or 4 month conversation over e-mail.”

-- *Pastor, large church*

Frequently, however, pastors commented on the drawbacks of email for this particular function. Specifically, most pastors recognized the role of face-to-face communications for counseling, and tried to steer online situations into physical meetings.

“Body language eye-to-eye contact, human relationships, I still think, e-mail and internet is not as good as that.”

-- *Pastor, smaller church.*

Beyond the simple question of body language, pastors also mentioned the spirituality of the communication. Some pastors spoke to us of a spiritual difference in communicating through a computer and face to face.

“God redeemed all the senses, and if all you are getting is what you read then I am not getting the smile that you offer or you are not seeing my body language you are not seeing, the energy the words may be said with, you are not having a chance to really fully experience anything, you've just got one sense at work”

-- *Pastor, smaller church*

The use of email to raise resources for another community, another type of pastoral care, was mentioned occasionally, perhaps in part due to the timing of our study. Again, in the wake of Hurricane Katrina, church Websites often supported gift giving to help the affected areas. During one interview, a pastor described an upcoming trip to a nearby affected state to help victims. He described how he emailed his laity with a request for items to give to the displaced families.

“E-mail sent to the whole congregation, ... and on that e-mail I said I am leaving to go to Mississippi either Thursday or Friday of this week ... I have got to have diapers, I listed this whole list [recites list].”

-- *Pastor, small church.*

And

“My fear is that it [technology] changes the relationship that people enjoy with other people and I believe that the world, will only have peace, will get along together, racially, socio economically, when you are people and if you are in a computer you aren't a person, and I think it is the relationships that are important.”

-- *Pastor, large church.*

Like presentation technology, email has become a part of ministry and managing relationships with the laity. Also like presentation technology, email does not come without its problems. On the one hand, the immediacy email affords makes it a highly desirable medium to use to communicate to the laity. Parishioners no longer have to wait until Sunday to learn about members of the congregation that are in need of prayer, and clergy can manage their pastoral care relationships in new timely ways. On the other hand, email also disconnects them from their parishioners in certain cases, particularly counseling. Not only does it distance them physically, reducing what we might term cues, but it simultaneously distances them spiritually. The addition of spirituality in this particular case allows us to explore what it might mean to design technologies that facilitate the imparting of spiritual cues in a computer-mediated conversation.

## 5. RELIGION AT HOME AND WORK

In this paper, we reported findings from a study of the religious uses of technologies by pastors of Protestant Christian churches in the metro-Atlanta area. We found that ministers use technologies to support research and reflection, worship, and pastoral care. Technologies included email, World-Wide web, specialized presentation and reference software, and cellphones. In this section, we reflect on the religious uses of technology from the perspectives of work-life and personal-life.

Some religious uses of technology seemed similar to workplace practices. For example, in pastoral care, ministers (like employers) used technologies to coordinate action [44]. The bigger churches in particular used technology to close the distance between the minister and an individual member of the laity, to create an intimate experience within the megachurch. Indeed, this finding answered one of our questions, that technology was being used to support other corporate-like practices found in megachurches [39,40].

And yet, while some aspects of technologically enabled religious practice seemed analogous to technologically supported corporate practice, others differed. Some practices echoed previous research largely focused on recreational groups, in particular on-line communities. For example, ministers described a dilemma with counseling, preferring to talk face-to-face, but recognizing that some people found it easier to discuss difficult topics in an electronically mediated setting. This is a widely-recognized phenomenon in the study of online communities typically (but not exclusively) focused on personal-life topics [2,37].

While some activities could be situated in one context, work or personal life, others seemed to cut across these two domains simultaneously or capitalize on the existence of both. For example, sermons while taking place “at work” for the minister, were conducted at times and in a place that is not the office for laity. Successful presentation tools allowed ministers to construct and present their sermon, a work activity, while providing laity with a spiritual message (typically not associated work life). Indeed, we also heard from some ministers, those offering both traditional and contemporary services, that the tools were more successful in bridging this divide for some laity than others.

Finally, we also heard accounts from ministers about intentional blurring between work-life and personal-life. Some ministers told us about using email to send out prayer requests, knowing that in some cases they would contact laity at work. In addition to knowing that a number of laity only had Internet access at work, they also thought and hoped that people would carve out a time for religious practice within their work life. Indeed, this use of technologies to carve out a different social space inside a physical space has also been observed in studies of cellphone users [31].

Scholars have long been aware of how the boundaries between work and personal life are constantly constructed and managed [30]. In some senses the use of technologies within this should come as no surprise. Yet, we would argue that the study of religious practice exposes the mix of work and personal life in interesting ways. Traditionally CSCW research has tended to select domains of study that emphasize either work or personal life. Most early CSCW research focused on work place settings [24]. Studies found lots of work-based coordination occurring, even informal communications serve important work goals [11]. More recently, both the home and public spaces have become of

increasing interest to CSCW researchers. Again, these tend to focus on personal collaborative life [14-16] (see [34] as an exception). By contrast, the religious uses of technologies seem to create collaborative practices that not only cut across these domains, but also reveal the domains to have different meaning for the different people involved.

## 6. CONCLUSIONS

In this paper, we have sought to begin empirically the process of exploring questions about the religious uses of technology, particularly those associated with spiritual formation. Being aware that technology was entering into religious life we wanted to understand what if any changes were occurring as a result. What we found was that pastors have incorporated technology into three broad areas of their ministerial work: research and reflection, sermons, and pastoral care. We learned that adoption of technology in spiritual practice mirrors previous experiences in both corporate and recreational uses of technology. Further, adoption is a negotiation among clergy and laity, not always in agreement.

We offer this study as a starting point, not just for taking up questions about spiritual practice infused with technology directly, but also as a mechanism for thinking about spirituality as another facet of human existence for many people, not just here, but also around the world. Spirituality, and its embedding into religious life, offers another lens through which to understand collaboration and coordination of everyday life. Our study suggests that the use of technology for spiritual formation simultaneously incorporates unique and familiar patterns of interaction.

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## 8. REFERENCES

- [1] Adam, A.K.M. Practicing the Disseminary: Technology Lessons from Napster. *Teaching Theology and Religion*, 5 (1). 2002. 10-16.
- [2] Barnes, S.B. *Computer Mediated Communication*. Allyn & Bacon, 2002.
- [3] Bell, G. No More SMS from Jesus? Ubicomp, Religion, and Techno-spiritual practices. To appear in *Proceedings of Ubicomp 06* (Irvine, CA, 2006).
- [4] Brasher, B.E. *Give Me That Online Religion*. Jossey-Bass, San Francisco, 2001.
- [5] Bruce, S. *Pray TV: Televangelism in America*. Routledge, London, England, 1990.
- [6] Campbell, H. Making Space for Religion in Internet Studies. *The Information Society*, 21. 2005. 309-315.
- [7] Dawson, L.L. and Cowan, D. eds. *Religion Online: Finding Faith on the Internet*. Routledge Press, New York, NY, 2004.
- [8] Durkheim, E. *Elementary Forms of Religious Life (New Translation by Karen Fields)*. Free Press, 1995.
- [9] English, L.M. Spiritual Dimensions of Informal Learning. *New Directions for Adult and Continuing Education* (85). 2000. 29-38.

- [10] Fischer, C.S. *America Calling: A Social History of the Telephone to 1940*. University of California Press, Berkeley, CA, 1992.
- [11] Galegher, J., Kraut, R. and Egidio, C. eds. *Intellectual teamwork: Social and technological foundations of cooperative work*. Lawrence Erlbaum Associates, Hillsdale, NJ, 1990.
- [12] Giddens, A., Duneier, M. and Appelbaum, R.P. *Introduction to Sociology*. W.W. Norton and Company, New York, 2003.
- [13] Graham, S.L. Theological Education on the Web: A Case Study in the Formation for Ministry. *Teaching Theology and Religion*, 5 (4). 2002. 227-235.
- [14] Grinter, R.E., Aoki, P.M., Hurst, A., Szymanski, M.H., Thornton, J.D. and Woodruff, A., Revisiting the Visit: Understanding How Technology Can Shape the Museum Visit. In *Proceedings of ACM Conference on Computer Supported Cooperative Work (CSCW 2002)*, (New Orleans, LA, 2002), New York, NY: ACM Press, 146-155.
- [15] Grinter, R.E., Edwards, W.K., Newman, M. and Ducheneaut, N., The Work to Make the Home Network Work. In *Proceedings of The 9th European Conference on Computer-Supported Cooperative Work*, (Paris, France, 2005), Kluwer Academic Press, 469-488.
- [16] Grinter, R.E. and Eldridge, M., y do tngrs luv 2 txt msg? In *Proceedings of Seventh European Conference on Computer-Supported Cooperative Work ECSCW '01*, (Bonn, Germany, 2001), Dordrecht, Netherlands: Kluwer Academic Publishers, 219-238.
- [17] Hadden, J. and Shupe, A. Televangelism in America. *Social Compass*, 34 (1). 1987. 61-75.
- [18] Hess, M.E. Pedagogy and Theology in Cyberspace: All that We Can't Leave Behind... *Teaching Theology and Religion*, 5 (1). 2002. 30-38.
- [19] Hlubinka, M., Beaudin, J., Tapia, E.M. and An, J.S., AltarNation: Interface Design for Meditative Communities. In *Proceedings of Extended Abstracts of the ACM Conference on Human Factors in Computer Systems (CHI 2002)*, (Minneapolis, Minnesota, 2002), ACM Press, 612-613.
- [20] Hoover, S.M., Clark, L.S. and Rainie, L. Faith Online: 64% of wired americans have used the Internet for spiritual or religious purposes. 2004.
- [21] Jinkins, M. Theological Dot Education: A Review of The Almond Springs Website. *Teaching Theology and Religion*, 5 (1). 2002. 49-55.
- [22] Kong, L. Religion and technology: refiguring place, space, identity and community. *Area*, 33 (4). 2001. 404-413.
- [23] Lofland, J. and Lofland, L.H. *Analyzing Social Settings: A Guide to Qualitative Observation and Analysis*. Wadsworth, Belmont, CA, 1995.
- [24] Luff, P., Hindmarsh, J. and Heath, C. eds. *Workplace Studies: Recovering Work Practice and Informing System Design*. Cambridge University Press, Cambridge, UK, 2000.
- [25] Mayer, R.E. and Moreno, R. Nine Ways to Reduce Cognitive Load in Multimedia Learning. *Educational Psychologist*, 38 (1). 2003. 43-52.
- [26] MIT Forum Religion and the Internet. <http://web.mit.edu/comm-forum/forums/religion.html>. 2002.
- [27] Moore, J.D. *Visions of Culture: An Introduction to Anthropological Theories and Theorists*. AltaMira Press, Walnut Creek, CA, 1997.
- [28] Muller, M.J., Christiansen, E. and Nardi, B. Can We Have Spiritual Experiences On-Line? *SIG at CHI 2000*. 2000.
- [29] Newman, J.O. The Word Made Print: Luther's 1522 New Testament in an Age of Mechanical Reproduction. *Representations*, 11. 1985. 95-133.
- [30] Nippert-Eng, C.E. *Home and Work*. University of Chicago Press, Chicago, IL, 1995.
- [31] Palen, L., Salzman, M. and Youngs, E., Going Wireless: Behavior and Practice of New Mobile Phone Users. In *Proceedings of ACM Conference on Computer Supported Cooperative Work (CSCW 2000)*, (Philadelphia, PA, 2000), New York, N.Y.: ACM Press, 201-210.
- [32] Rainie, L., Fox, S., Horrigan, J., Lenhart, A., Spooner, T., Lewis, O. and Carter, C. Wired Churches, Wired Temples: Taking Congregations and Missions in Cyberspace. *Pew Internet and American Life Project*. 2000. <http://www.pewinternet.org/>.
- [33] Robinson, F. Technology and Religious Change: Islam and the Impact of Print. *Modern Asian Studies*, 27 (1). 1993. 229-251.
- [34] Salazar, C., Building Boundaries and Negotiating Work at Home. In *Proceedings of International ACM SIGGROUP Conference on Supporting Group Work (GROUP 01)*, (Boulder, CO, 2001), ACM Press, 162-170.
- [35] Schultze, Q.J. *Habits of the High-Tech Heart: Living Virtuously in the Information Age*. Baker Academic, 2002.
- [36] Seel, J. *The Evangelical Forfeit: Can We Recover*. Baker Books, Grand Rapids: MI, 1995.
- [37] Smith, M.A. and Kollock, P. eds. *Communities in Cyberspace*. Routledge, New York, NY, 1999.
- [38] Sproull, L. and Kiesler, S. *Connections: New Ways of Working in the Networked Organization*. MIT Press, Cambridge, MA., 1991.
- [39] The Economist Jesus, CEO: Churches as Businesses. *The Economist* (Dec 20, 2005). 2005. [http://www.economist.com/world/na/displaystory.cfm?story\\_id=5323597&no\\_jw\\_tran=5323591&no\\_na\\_tran=5323591](http://www.economist.com/world/na/displaystory.cfm?story_id=5323597&no_jw_tran=5323591&no_na_tran=5323591).
- [40] Thumma, S.L. *The Kingdom, The Power, and The Glory: Megachurches in Modern American Society*. Doctoral Dissertation, Emory University, Atlanta GA., 1996.
- [41] Vaughan, J.N. *Megachurches and America's Cities: How Churches Grow*. Baker Books, Grand Rapids, 1993.
- [42] Venkatesh, A., Kruse, E. and Shih, E.C.-F. The Networked Home: An Analysis of Current Developments and Future Trends. *Cognition, Technology and Work*, 5 (1). 2003. 23-32.
- [43] Vitalari, N.P., Venkatesh, A. and Gronhaug, K. Computing in the Home: Shifts in the Time Allocation Patterns of Households. *Communications of the ACM*, 28 (5). 1985. 512-522.
- [44] Yates, J. *Control through Communication: The Rise of System in American Management*. The Johns Hopkins University Press, Baltimore, Maryland, 1989.
- [45] Zeph, C.P. The Spiritual Dimensions of Lay Ministry Programs. *New Directions for Adult and Continuing Education* (85). 2000. 77-84.