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Intellectual Capital in Churches: Matching Solution Complexity with Problem Complexity

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ABSTRACT

The problems organizations face have varying degrees of complexity. What is not often understood, however, is that the knowledge needed to solve these problems also varies in complexity, and should match the complexity of the problem itself. The current study provides grounded theory for how leaders in churches should approach problems relating to Intellectual Capital (IC) assets. These intangible assets are crucial to the ability of churches to create value that enriches the lives of individuals in their communities. In two, 90-minute focus groups, the leadership team of a United Methodist Church in South Carolina, USA was asked about their IC and their past, present, and future solutions to increasing IC value. Qualitative coding of these transcripts found that leadership often provided knowledge-based solutions that did not match the assumed complexity of the IC problem. This caused numerous failures in the maintenance of IC. It is suggested that church leadership view all problems as knowledge problems to uncover these hidden assumptions of complexity, and use these assumptions to seek out knowledge-based solutions that match that complexity. These findings can be extended to non-religious contexts.

Keywords

Intellectual Capital, Cynefin Model, Churches, Leadership

INTRODUCTION

Problems and issues in organizations vary in their complexity, and the knowledge needed to solve these problems and issues also vary in complexity. To successfully and consistently solve problems, the complexity of the proposed knowledge-based solution must match the complexity of the problem. When leaders talk about problems, they provide insight into assumptions they have about the complexity of the knowledge that they feel they need to solve these problems. In doing so, they frame the complexity of the problem itself. However, these assumptions often remain hidden from the leaders themselves, and—as a result—the complexity of the proposed knowledge-based solution often does not match the complexity of the problem.

Leaders tend to lack this awareness of complexity. Human organizations as a whole are typically viewed as complex systems (Bertalanffy's, 1968). The discipline of Knowledge Management (KM) has utilized this understanding to guide its approach to knowledge (McElroy, 2000). In spite of this recognition, however, Western organizations often employ non-complex knowledge solutions to organizational problems—confused as to why they do not successfully solve problems in complex organizations (Stacey, 1996). Although this is a faulty view, the alternative is not to approach every problem as in need of complex knowledge. Instead, the current study uses Snowden's (2002) *Cynefin* model to argue that knowledge-based problems and knowledge-based solutions shift from among a number of different complexities (Snowden, 2002). The key to successful problem solving is in identifying the correct knowledge-based solutions to match knowledge-based problems. Some problems require simple, codified knowledge; others require complex, tacit knowledge. Still others require different versions of codified and tacit knowledge. Leadership must be able to sense the appropriateness of knowledge applied to specific problems.

The current study looks specifically at problems arising from responses—and failures to respond—to the value potential of Intellectual Capital (IC) in churches. Churches represent important potential value creating institutions for communities. Although churches are often used as examples for contexts in which other information science theories may be present, they are rarely examined on their own. Given the centrality of churches to many communities, it is suggested that more researchers consider the role of churches as important sources of knowledge for communities.

The current study first provides an important qualitative analysis of the parameters of religious IC—a topic not often explored in the IC literature. It then uncovers assumptions in how church leadership defines the complexity of these IC problems—utilizing Snowden's (2002) *Cynefin* model—as they discuss previous, current, and future solutions to increase value. With an awareness of their assumptions, church leaders can offer knowledge-based solutions that match the complexity of knowledge-based problems in churches.

LITERATURE REVIEW

Intellectual Capital

Intellectual Capital (IC) refers to specific groupings of knowledge within an organization that highlight intangible value. This must not be viewed as only those activities traditionally considered *intellectual*, however. Andriessen (2004) noted that IC also includes things like value, culture, charisma, etc. that "are found more on the right side of the brain and in the hearts of people" (p. 66). Distinct from

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physical or financial capital that is tangible, IC is intangible, and can be leveraged into unique opportunities and competitive advantages (Zack, 1999). Edvinsson (1996) argued that IC is, specifically, "knowledge that can be converted into value" (p. 358). Marr (2008) defined IC as "all non-tangible resources that . . . contribute to the delivery of the organization's value proposition" (p. 5). In spite of this, however, the management of intangible assets has received very little attention or understanding by organizations (Allee, 2009, p. 439). Organizations may not have many of these sources of capital, and thus the conceptualization of IC is a way for organizations to guide their creation of knowledge that is deemed valuable to success.

IC Areas

A useful way to understand IC is to break it down into specific areas. A variety of terms exist for these areas, and Andriessen (2004) argued that there is an unwillingness to let these terms go because "each author wants to convey a specific message that he thinks is important" (p. 62). However, a quick outline will reveal that most convey similar meanings. Marr (2008) and Andriessen (2004) broke down IC into human, relational, and structural areas. Marti (2001) utilized these same three categories for the benchmarking of IC. Brooking (2010) provided a similar framework for how IC can be classified as a means of strategic decision-making, termed the *Dream Ticket (DT)* methodology. The current study utilizes this DT methodology to outline the areas of IC.

Market Assets are those things that give the organization some competitive advantage or power. This is most closely aligned with the concept of relational capital, which includes the intangible element of interaction, and encompasses an organization's external relationship with its customers and its internal social networks (Marr, 2008; Marti, 2001). It is most closely related to Andriessen's (2004) concept of reputation in relational capital. *Infrastructure Assets* include those elements related to how an organization works. This is most closely aligned with the concept of structural capital and culture (Andriessen, 2004), which establishes important norms and ways of behaving (Marr, 2008). *Intellectual Property Assets* are those things that are intellectual, but are explicit and—often—protected property of an organization. Marr (2008) included intellectual property within the category of structural capital, but Brooking (2010) takes this out as a separate category. Whereas structure is attached to an organization, intellectual property is something that can be bought and sold—transferred out of an organization. *Human Centered Assets* are things not owned by the company but potentially valuable to it if extracted and applied. Included in Marr's (2008) human capital, much of an organization's IC is human-centered—what Marti (2001) called the "lifeblood of the intellectual capital concept" (p. 155)—and brings a heightened attention to the skills, creativity, leadership, and general knowledge and problem-solving capabilities of an organization's employees. Andriessen (2004) included implicit knowledge, skills, and attitudes of individuals in an organization.

Church IC

Nonprofit organizations (NPOs) are unique, as the goal of these organizations is the providing of services rather than profit. These groups have "an embedded social purpose" (Austin et al., 2006, p. 1). Thus, their IC needs will likely differ. These organizations also face unique challenges, highlighted by Prugsamatz (2010) as including declining trust from the public (Herzlinger, 1999) and for-profit organizations claiming part of the non-profit space (Ryan, 1999; Kong, 2015). Prugsamatz (2010) argued that these challenges "call for a need for non-profit organizations to be able to learn more effectively" (p. 244). This learning requires knowledge creation, which can lead to the development of *social intelligence* that can help NPOs survive these challenges (Kong, 2015). Thus, it is important to outline the unique aspects of a church's IC.

RQ1: What are the important aspects of a church's Intellectual Capital?

Complex Adaptive Systems

Human organizations are complex systems (Bertalanffy, 1968; Stacey, 1996; McElroy, 2000). Systems theory argues that these systems work toward self-organization as they are always moving toward change and disruption of order: "A transition towards higher order, heterogeneity, and organization" (Bertalanffy, 1968, p. 41). The model of Complex Adaptive Systems (CAS) borrowed elements of systems theory to argue that order emerges out of chaos, and living systems "self-organize and continuously fit themselves . . . in their environment" (McElroy, 2000, p. 48). This makes organizational certainty impossible, and takes away a leader's ability to predict.

This lack of certainty and predictability is due to vast number of individual parts within a system "that interact with each other according to sets of rules that require them to examine and respond to each other's behavior in order to improve their behavior and thus the behavior of the system they comprise" (Stacey, 1996, p. 10). In a CAS, change is produced through movement on one of three control parameters: information flow, diversity, and connectivity in the organization (Stacey, 1996). As any of these control parameters increases, the system gets closer to change.

Knowledge in Systems

Having identified the organization itself as complex, it is important to look separately at the knowledge within these systems. Although the organization itself is a complex system, the knowledge that comes out of this system does not always need to *stay* complex. At times it is valuable to take a moment-in-time snapshot of this complex, changing system and offer it as an explicit, static knowledge product that can be more easily shared and used throughout the organization. This is often what research on IC attempts to

do: "It is clearly to the advantage of the knowledge firm to transform the innovations produced by its human resource into intellectual assets to which the firm can assert rights of ownership" (Edvinsson, 1996, 358).

However, this codification cannot always be the primary goal of IC. Khalique et al. (2015) argued that organizations "cannot own the human capital assets but can utilize them on a rent basis" (p. 225). Similarly, Snowden (2002) argued that such a codification should only occur at the moment it is needed on a *Just-in-Time* basis, and should not remain "beyond its useful life" (p. 106). This avoids the stockpiling a large inventory of codified knowledge that may or may not be used: "We cannot distinguish in advance what we need to know as an organization, and critically when we need to know it" (Snowden, 2002, p. 108).

Leadership must decide, then, what kind of knowledge provides appropriate solutions given the contexts of organizational problems. The *Cynefin* model (Snowden, 2002; Snowden and Boone, 2007) outlines four domains within which to view these contexts: simple, complicated, complex, and chaotic. What separates this model from similar distinctions (Glouberman & Zimmerman, 2002; Westley, Zimmerman, & Patton, 2007; Johnson, 2008) is that it allows for a full use of knowledge in its many forms. It provides the flexibility to agree with the cognitivist tradition that knowledge can be made explicit in manuals, while also agreeing with the autopoeietic tradition that knowledge is built through relationship and experience (Venzin, Krogh, & Roos, 1998). Knowledge is "paradoxically both a thing and a flow" (Snowden, 2002, p. 102).

The importance of understanding the distinctions among each domain is that each requires a "different model of community behaviour; each requires a different form of management and a different leadership style" (Snowden, 2002, p. 106). The current study argues that these domains define both the problem itself, and the knowledge needed to solve the problem. The following outlines the distinctions among the four domains, as well as provides an operationalization of what might be suggested as appropriate knowledge for each domain. This provides a basis to state whether or not a leader's proposed knowledge-based solution matches the complexity of the problem.

Simple

In this domain, the context surrounding the problem is stable. The right answer to a given problem is "self-evident and undisputed" (Snowden & Boone, 2007). Thus, it is possible to "both predict and prescribe behavior" (Snowden, 2002, p. 106). Leaders can assign issues to preexisting categories, and act from these categories, but must be careful not to become complacent, lose self-awareness, and fall victim to entrainment thinking: "A conditioned response that occurs when people are blinded to new ways of thinking by the perspectives they acquired through past experience, training, and success" (Snowden & Boone, 2007). The appropriate knowledge in this domain includes existing knowledge that is easily discernable, e.g., employee manuals, external best practices, and routines.

Complicated

In this domain, cause-and-effect relationships are not as clear as they were in simple domain. There is no single right answer, but experts can help identify good practices that can lead to *a* right answer. The problem can be understood: "We do not yet know all the linkages, but they can be discovered" (Snowden, 2002, p. 106). The appropriate knowledge in this domain includes existing knowledge that requires expert translation, e.g. technical manuals and research reports. Rather than *best* practices, this constitutes *good* practices (Snowden, 2002).

Complex

In this domain, there is no right answer. This is because things are constantly changing. Leadership needs to allow answers to emerge from the system, rather than attempt to impose them. Leaders can engage Stacey's (1996) control parameters to provide the conditions for patterns to emerge. The appropriate knowledge in this domain includes knowledge that emerges from within the system.

Chaotic

In this domain, it is impossible to determine a right answer, as there is no "manageable pattern" (Snowden & Boone, 2007). Here, leaders must first act in order to regain stability. This can be entered into willingly—after realizing irrelevant simple knowledge—or forcibly—after staying too long with simple knowledge. The appropriate knowledge in this domain includes single-source knowledge directly from leadership.

IC Problems and Solutions

IC issues represent problems in the organization, in that they represent the possibility for increased or missed value. As with any organizational problem, they require knowledge-based solutions. But, as has been stated, the complexity of this solution must match the complexity of the problem: "Disasters can occur when complex issues are managed or measured as if they are merely complicated or even simple" (Westley, Zimmerman, & Patton, 2007, p. 10). Johnson (2008) outlined the mistake of approaching a complex problem like education with simple solutions like linear models (p. 5-6). Not realizing this complexity of the system causes organizations to engage in a *vicious cycle* whereby they, with futility, search for perfect answers and best practices to what they assume is a predictable world (Stacey, 1996, p. 3).

The current study analyzes how church leaders talk about IC, looking specifically at assumptions about what knowledge-based solutions are needed. The study then looks at what knowledge-based solutions were actually implemented—or plan to be implemented. It seeks to

identify patterns in whether or not these proposed solutions are appropriate given these hidden assumptions.

RQ2: What assumptions about knowledge-based solutions do leaders make when discussing IC problems, and does the complexity of the knowledge-based solutions that are actually proposed match these assumptions?

METHODS

The current research followed an inductive, Grounded Theory (GT) methodology, with a primary goal of developing a theory to explain IC problems and knowledge-based solutions that is "in intimate relationship with data" (Strauss, 1987, p. 6).

Process

The sample church was chosen for the study because leaders showed a high interest in KM. This was determined after an initial meeting between the researcher and church pastor. The church is a United Methodist Church located in South Carolina, with a congregation of 249. It has both a contemporary service and a traditional service. It has activities geared toward youth and children, small group studies for adults, and Sunday school classes.

Two 90-minute qualitative focus groups (FGs) were held with the same group of 11 individuals comprised of church staff and members of both the church council and the church's Long Range Planning Committee. Of these 11, four were female and seven were male. These FGs were video and audio recorded, and transcriptions were imported into Nvivo for coding and analysis.

Extensive field notes were taken after each FG, and included researcher thoughts about the process, observations about the setting, reflections on procedure, and initial theories about emerging patterns. An exact transcript was transcribed the day after each FG, and participants were given an opportunity to review this transcript for accuracy. This *audit trail* increases the dependability of the research ensuring that every conclusion can be traced back to the data (Morrow, 2005). This also allowed the researcher to engage in inductive discovery of an explanation for how church leaders approach IC issues. This broad explanation is grounded in actual discussions of church leadership.

Method

Following Brooking's dream-ticket methodology, a semi-structured FG guide was developed to engage participants in discussion about the four areas of IC. This included a discussion of where they would like to be, and where they currently are, in each of these areas. The first FG also included icebreakers to increase levels of rapport between researcher and participants, increasing the credibility of the FG discussions (Morrison, Haley, Sheehan, & Taylor, 2002).

In the first FG, participants were asked to discuss their market assets, infrastructure assets, intellectual property assets, and human centered assets. A brief overview of the meaning of each IC category was given to ensure participants understood the questions. They were asked to rate both their current and dream performance in each category on a 1-5 scale. They were also asked to prioritize each of the categories in terms of importance and fit with church strategy. They were informed about the IC categories to focus the conversation, but they were not informed of the Cynefin domains. Thus, any allusions to these domains were not prompted and represent tacit assumptions. In the second FG, the researcher engaged in member-checking as participants were presented with an overview of the researcher's findings and asked to provide feedback. They were asked to engage with additional IC questions that arose from the coding of the first FG.

Analysis

Using Nvivo, coding was conducted in three stages following Corbin and Strauss (1990). This includes first looking for all concepts present in the FG transcripts in a process of open coding. Next, similar concepts were grouped together in axial coding to create broader categories. Finally, in selective coding, core categories were found that account for all of the data. By coding in three stages, the researcher was able to abstract from the data to broader categories that can account for theories about what is happening. This allows for the "explicating [of] a story from the interconnection of these categories" (Creswell, 2007, p. 191). Having gone "beyond description" (Richards & Morse, 2012), these abstract categories provide the "overarching explanatory concept[s]" (Corbin and Strauss, 2008, p. 55).

Coding of the four broad areas of IC was direct, as participants were asked explicitly about each of these in turn. These sections of the transcript could then be broadly coded for each IC area—although, at times, participants engaged in conversations about other topics. The researcher then coded for subtleties within these broad IC areas. Because participants were not asked directly about the domains of the Cynefin model, the coding of these areas was less direct and required more concrete operationalizations of the definitions of each domain outlined previously. Table 1 shows the selective coding categories of each of the four systems domains.

	Core Categories
Simple	Use of Pre-existing Categories; Faith; Complacency; Tradition
Complicated	Use of Bible; Reliance on Experts; Discoverable Patterns
Complex	Patience; Recognition of Changing Environment; Involving Everyone in Decision-Making; Control Parameters
Chaotic	Leader-Dependent Ideas; Desire for Radical Change; Panic; Complete Failure

Table 1. Listing of Categories Uncovered in Selective Coding

RESULTS

This section first provides an overview of what elements of IC church leadership felt was important—as an answer to RQ1. Secondly, it outlines the assumptions participants revealed about the complexity of required knowledge-based solutions as they discussed IC problems. And third, it outlines the complexity of the knowledge-based solutions that were actually implemented or proposed. The second and third items help answer RQ2. The results are summarized in Table 2, which provides an overview of the number of topics that were coded as both a particular IC area and a Cynefin domain. This table includes a description of these topics.

Market Assets

To answer RQ1 about market assets, the primary focus of participants was on church branding as seen by the community. They dreamed of a 5 in this area, but scored their current progress as a 3. Participants wanted to a) be seen as useful, in order to b) inspire brand loyalty. Usefulness was defined as being "focused on people's needs." This extended not only to "spiritual needs," but to "all of their needs." The problem, however, was that they did not know their community well enough to market to them: "How can you market whatever it is that needs marketing if you don't know what your customer base is?" This was one of the two areas that participants prioritized.

Complex Assumptions

When discussing their market assets, participants revealed assumptions about the complexity of these assets. This was noted in their recognition that they needed to be "relevant." The definition of relevancy needed to come from the people in the community in an emergent way. They agreed that they needed to be "focused on people's needs—their spiritual needs, but also all of their needs." They recognized that this "certainly could be ongoing and changing." Participants agreed that "the community changes, our surroundings change . . . so if we don't change with it, grow with it, we're gonna die." This idea of the church dying was repeated by other participants: "Essentially we will die because we don't cross that barrier for whatever reason." Participants noted the need to be flexible to external changes: "Flexibility is necessary. If you don't, you stagnate and die."

Simple Solutions

Although coding revealed that participants assumed that market assets required complex knowledge, their actual knowledge-based solutions were simple. This was seen as they often fell back on a simple description of the market: "We know--as far as being a church--we know what they need. Regardless of how it's packaged, they need Christ, and they need the hope, the acceptance, the love, the forgiveness of Christ." They also relied heavily on demographic information as a ready-made means of improving their place within the community: "In 10 years [the community] is going to be 90 percent Black, and we're the last white folk here if we don't address color diversity." This simple categorization according to demographics was not accurate and did not increase their market value. When they determined that the demographics were shifting, many

	Simple	Complicated	Complex	Chaotic
Market Assets	3 Clear denominational market position; Focus on demographics; Assumption of product needs	0	1 Relevancy to changing environment	1 Market rapidly shifting
Infrastructure Assets	2 Natural Church Development; God and faith as stability to deal with uncertainty	1 Bible to solve conflicts	3 Patience to let order emerge; Increase richness of connectivity through technology and networking; Behavior dependent on individual fluctuations	1 Throw out the way we do things
Human Assets	0	1 Use of PLACE to put people together	3 Empowerment to increase diversity in decision making; Increased information flow about talents and abilities; View congregants as creators of information	0
Intellectual Property Assets	1 Categorization of program offerings;	0	1 Small groups need to match emergent behavior	2 Throw out all existing products; Leadership-dependent programs

Table 2. Number of topics coding as both an IC area and a complexity domain.

in the church assumed, “Well we should play a whole bunch of spirituals.” One participant described this reaction as “cringe-worthy.”

Chaotic Reality

The issue of the general place of the church within the community was seen as chaotic, with no clear pattern: “The church has kinda become the spare time thing.” The children and youth pastor lamented that “youth directing used to be easier because we did the wild and crazy, fun things . . . Now everybody does it.” As their place within the market was shrinking, she noted a need to act: “I’m not going to come to [the leadership team] with every little decision for children’s ministry.”

Infrastructure Assets

To answer RQ1 about infrastructure assets, coding showed that participants wanted a culture that embodied the values of Jesus: “love and truth, unconditional.” They wanted the church to be driven by “a passionate mission that matters.” They dreamed of a 5 in this area, but scored their current progress as a 3.5. A lack of communication often kept them from achieving their desired culture. In terms of doing things under the role of another committee, “You feel like you can't, maybe I shouldn't do that because I don't know what the [committee’s] plan is.”

Complicated Assumptions and Solutions

Participants pointed to the Bible as the source for helping them make decisions about their culture: “If you can’t back it up with Scripture then what is our foundation we’re standing on?” They agreed that the Bible provides a blueprint for a conflict-free culture: “If we’re all behaving like Jesus, then there wouldn’t be the arguments and the battles and the ugliness that happens in church.” This use of the Bible is complicated rather than simple, however, because answers within it are not immediately clear to everyone: “Well can’t you back up everything with Scripture?” Determining what the Bible actually means required the expertise of fellow Christians—“collaboration within the body.”

Participants also noted that the actual structure of the church used to be very “pastor-centric.” In order to change this structure, they relied on a program called Natural Church Development (NCD). This is an expert-driven approach that engages churches in an evaluation process to analyze their culture and find solutions through the uncovering of patterns: “Rather than selling a specific church model, NCD helps Christians and churches to discover and develop their individuality” (NCD, n.d.). They had been engaged with this process for three years, and were proud that they “got discernibly better with structures and that type of thing.”

Simple Assumptions and Solutions

Participants agreed that uncertainty in the life of the church should be dealt with through faith in God, who provides a sense of stability and predictability: “The stability comes from God who is never changing.” When asked about how they deal with uncertainty, participants agreed that it was about faith: “Faith has to play a vital role in that.” Thus, the faith of not worrying about the future paradoxically provided a sense of predictability that the future would be “something big” from God.

Complex Assumptions and Solutions

Participants noted that the behavior of individuals within the church was often complex with no clear pattern: “On any given Sunday, depending on the person, we can score really high or we can score really low [in our ability to welcome people].” Their approach to this complexity was to allow solutions to emerge, rather than impose them: “Sometimes you have to . . . let the baby’s drinking milk have their temper tantrum, just kind of patience.” This allowed them to worry less about this problem, recognizing that it is part of a complex system. Participants also embraced the role of technology to increase the connectivity within the church: “I love that people in this congregation are willing to post on Facebook, ‘I have a prayer need right now.’” They agreed that they needed to “embrace technology.”

Intentional and Unintentional Chaos

Most participants expressed a desire to enter into chaos willingly in order to change things: “Ideally we would be on the edge of chaos. Radical.” The church was at risk of falling into this unwillingly, however, due to a noted sense of complacency about “the way we’ve always don't it.” Participants agreed that “the reality is there’s a spirit here of, ‘we don’t want anything to change.’” This led to complacency in how they dealt with new issues in the church: “Sometimes we don't want to deal with the crazy. It’s too hard.”

Human Assets

To answer RQ1 about infrastructure assets, coding showed that participants agreed that the attendees of the human assets pool in the church was vast: “We've got so many people that come here that have so many talents.” However, they did not know how to extract or learn about these: “I don't know where they are or what they do.” This was one of the two areas that participants prioritized. They dreamed of a 5 in this area, but scored their current progress as a 1.

Complex Assumptions

When discussing their human assets, participants revealed assumptions about the complexity of these assets. They recognized the diversity of these assets and expressed a desire to be a place where “Where there is a spot for everybody.” One participant noted a need to “provide an environment where we can tell our stories. That's where a lot of that information comes out.” Participants recognized that “people [in the church], they are the information.” One participant discussed how he found out through a random conversation that someone runs an HVAC company that

could prove useful for his own business: "That could help . . . just learning about what each person's skill is, networking.

Simple Solutions

Although participants framed the problem as a need to provide the space for networking, their actual solution involved a simple extraction and categorization. The previously proposed solution to find out about the diversity of these stories involved church staff extracting people's stories into a searchable database. They attempted to codify these stories according to simple categories of experience that could be searched by others in the church. Congregants could know that, "They've been through cancer, or they've lost a loved one." This proved unsuccessful, however, as people stopped contributing these stories: "The stories stopped coming."

Complicated Solutions

When discussing how to make use of the expertise of the individuals within the congregation, participants referenced the *PLACE* ministry as a means of attracting and keeping people. PLACE is a program the church was undertaking with newcomers that is "an intentional process to connect church members into purpose-driven ministry" (PLACE, 2016). It was led by one of the church's pastors. PLACE is not a best practices approach, as it does not purport to offer universal solutions, but rather "help you discover how God has uniquely designed you" (PLACE, 2016). Participants agreed that this ministry "helps reach out to people and put them in areas of strength."

Intellectual Property Assets

To answer RQ1 about infrastructure assets, coding showed that participants considered the church's various programs as its main source of intellectual property assets. This included a Pumpkin Patch, a small group ministry, and a "home-grown" Sunday school curriculum. They dreamed of a 5 in this area, but scored their current progress as a 1.

Complex Assumptions

When discussing their intellectual property assets, participants revealed assumptions about the complexity of these assets. For instance, they were very proud of their small group program: "It's the heart of; it gets at everything we've just talked about." They were "convinced that they have value." However, it was clear that this was not a simple use of best practices. The small groups were not prepackaged. One participant asked, "Are we fitting it into the box of what we think small group is? Or are we talking about the principles of small group that mean small group of individuals that have relationship purpose." Thus, participants wanted the value of these small groups to emerge on their own as people participated in them.

Simple Solutions

Although they referenced the need for their small group program to be emergent, their approach to other programs was a simple categorization of assumed best practices. When asked how they she decides on activities, the children's and youth pastor noted that "it's checking boxes off" according to predefined needs—"does it have, you know, games and does it have a video, and does it have music?" When describing what they do for families, participants agreed that "we look at family and we automatically think, well we have stuff for kids, and we have stuff for their parents, and we have this senior group, and so we're check, check, check."

Chaotic Reality

In the same way that participants wanted to completely abandon the way they do things in favor of radical change, they also expressed a desire to throw out the specific products they had. Some were not even convinced they had identified products were saving: "Did we come to consensus of any good things?" Others advocated for entering willingly into the chaos of having no products at all and starting over: "I'd throw it all out. Once I keep it, now I can't change." However, many programs had already fallen into chaos unwillingly due to a different kind of complacency—the assumption that someone else will do it. Leaders of these programs were forced to make decisions "depending on how many people volunteer to step up." Because of this lack of help, many ideas were "leadership dependent," and "live as long as the person who gave birth to it is here." They were concerned with the chaos of programs "all centered on the personality or the talents or whatever of the leader." They argued that, "There's certain risk in that for the long-term."

DISCUSSION

As a grounded theory study, the current research sought to develop an emergent theory to explain IC problems and knowledge-based solutions. Several theorems can be proposed from this research. First, the data shows that talking about organizational problems reveals hidden assumptions about the knowledge needed to solve them. Second, while thinking about the knowledge needed to solve a problem, individuals simultaneous define the problem itself. Third, because these assumptions about knowledge are hidden and subconscious, the knowledge solutions that are actually offered do not often match these assumptions. Fourth, knowledge solutions that do not match these assumptions tend to lead to further problems.

It follows, then, that it matters which of the following questions a leader asks: a) what is the nature of this problem? or b) what knowledge does this problem require? Asking the first question makes it more likely that leadership will rely on existing best practices that can be retrofitted to the problem. However, asking the second question frames the problem as a knowledge problem. In the first question, leadership is thinking only about the problem directly, and not about the knowledge needed to solve it. As a result, their proposed solutions—which are also knowledge based—are not likely to match their hidden

assumptions about what kind of knowledge is required. In the second question, leadership is forced to immediately think about the problem as a knowledge problem. This allows the hidden assumptions of the correct knowledge needed to solve that problem to come to the surface. Armed with these uncovered assumptions, leadership can choose knowledge-based solutions that match. Leadership, then, never needs to ask about the problem itself as isolated from the knowledge needed to solve it.

A discussion of each IC problem reveals facets of these theorems, and provides support for this study's main proposition: If leaders think about all problems as knowledge problems, they are more likely to suggest knowledge-based solutions that match the complexity of the problems themselves.

More often than not, the tacit assumptions about the complexity of needed knowledge-based solutions did not match the complexity of the actual knowledge-based solution. Table 3 outlines the number of matches and mismatches. The chaotic domain did not enter in as an important domain that was often assumed or discussed as a solution. Other than the times participants indicated a desire to enter into chaos on purpose, chaos tended to be the result of mismatching complexities rather than a separate domain. The church did not describe any immediate crises. Although the solutions matched the complexity of the problems for all of the Infrastructure Assets, they mismatched on all other IC areas. Table 3 shows the likely results of the match or mismatch, outlining how matches can positively impact success.

Market Assets

When discussing the problems of their market assets, participants revealed assumptions that the solutions required complex knowledge, e.g. the need to respond to a changing environment and diverse customer base. However, their actual knowledge-based solution was simple. They attempted to divide the community into simple demographic categories, and attempted to impose assumptions about what these categories of people wanted.

They also agreed that Jesus provided a simple solution to what this customer base needed. Because of this simple approach to a complex problem, it was not surprising to find them fallen into chaos about membership and the inability to attract people from the community. This was termed a *mismatch* in Table 3. Because marketing action was taken without allowing the complex patterns to emerge, they wasted a lot of time gathering information that they did nothing with. If they would have first asked about the knowledge needed for their market assets, they would have uncovered their complex assumptions. They would then be more likely to suggest complex knowledge-based solutions that would lead to success.

Infrastructure

When discussing the problems of their Infrastructure Assets, participants revealed assumptions that the solutions required complicated knowledge, e.g. the culture itself was not self-apparent, but they believed that specific answers to increasing the value of culture and structure could be found. In this case, their proposed solution *matched* this complicated problem—they relied on the Bible to provide documentation about how to be more Christ-like. And because the Bible is a complicated documented, it requires expertise to interpret. If the answer to being a Christ-like culture is in the Bible, and the Bible is difficult to interpret, one might assume that they would look to a pastor for help in this interpretation. Instead, they focused on their own

Objects	Tacit Assumptions about Complexity of Knowledge-Based Solutions	Complexity of Actual Knowledge-Based Solution	Results
Mismatches			
Market Assets	Complex (fluctuation)	Simple (static categorization)	Loss of market position
Human Assets	Complex (diversity)	Simple (codification and categorization of stories); Complicated (expert-led positioning of people within organization)	Lack of awareness of assets; People serving in roles not best-suited for them
Intellectual Property Assets	Complex (emergent value)	Simple (categorization with clear cause-and-effect	Lack of Volunteer Support
Matches			
Infrastructure	Complicated (structure); Complicated (values); Complex (fluctuating behavior)	Complicated (NCD expertise); Complicated (Bible); Complex (patience for emergent solutions)	More appropriate structure; Increasingly shared values; Increased connectivity; Decreased worry

Table 3. Matches and Mismatches in Assumptions of Solution Complexity and Actual Solution Complexity.

ability to figure it out in collaboration with others in the church. This is in line with a general shift in Protestantism—away from Catholicism—whereby focus was placed on an individual's ability to read Scripture without a mediator. In a statement very similar to that used by the participants, the UMC website states, "Even when we study it alone, we're guided and corrected through dialogue with other Christians" (UMC, 2006).

In addition, participants also focused on experts in infrastructure to help them analyze and provide context-based solutions to complicated structural elements—Natural Church Development. And, they were patient in allowing for emergent solutions to behavior problems.

It is difficult to categorize church leadership's approach to uncertainty, as much as it is difficult to categorize the problem of uncertainty itself. The faith noted by participants seems to more the result of a lack of any decision processes at all, placing it outside of the realm of the current study. Assuming that God will always work out this uncertainty allows participants to avoid it altogether.

Human Assets

When discussing the problems of their Human Assets, participants revealed assumptions that the solutions required complex knowledge, e.g. congregants were diverse, and they wanted to learn more about their stories. This might suggest, then, that leaders would engage Stacey's control parameters of information flow and diversity to create the conditions for patterns to emerge informally. This was not the case, however. Instead, they attempted to extract and categorize these diverse stories. It is difficult to extract the stories first, and then have people connect based on these categories later. A better solution is to provide the space for emergent networking through increased richness of connection in the church.

Also, they engaged in a more formal, expert-led approach to uncovering what they saw as knowable patterns in what congregants can offer the church and where these people should go (PLACE). Thus, while revealing that complex knowledge was needed, a complicated knowledge-based solution was used. These human assets were defined as discernable through a discovery of one's spiritual gifts led by an expert. One is taught and trained in their spiritual gifts, rather than encouraged to express these in informal interaction. And these different spiritual gifts uncovered predetermined roles for individuals within the church. Had they thought first about the knowledge needed for these assets, they would have realized that complex knowledge was required. They would have then been less likely to rely on external good practices, allowing individuals to find their place within the church informally.

Intellectual Property Assets

When discussing the problems of their Intellectual Property Assets, participants revealed assumptions that the solutions required complex knowledge of changing views of what the programs meant. This also included a desire to ensure that programs were not simple best practices, but matched their context. However, their proposed knowledge-based solutions followed simple categorization with an assumption that there were clear and direct relationships between products and value. Because youth like videos, music and games, any new program must have these predefined elements. This suggests a possible explanation for why many of their program were lacking in volunteer support. Had they approached all of their assets like they did small groups—thinking about the need to match the program with knowledge about what people in the church want and need—they would have likely had more success in these programs.

CONCLUSION

When leadership talks about a problem, they provide insight into hidden assumptions about the knowledge needed to solve that problem. This study was concerned with providing grounded theory to explain the relationship between these assumptions and the knowledge-based solutions that are actually offered. It found that there are often mismatches, because leadership does not think of these problems as knowledge problems. As a result, these hidden assumptions are never uncovered. It is theorized, then, that leaders would be more successful if they ask first about the knowledge needed for a problem—uncovering these assumptions—and using these assumptions to drive their search for a knowledge-based solution.

This research represents a context-based approach, thus it is not reasonable to assume that these results are generalizable across different contexts. Someone from the outside might suggest, for instance, that all cultural solutions should be approached as complex. In the current study, however, the insider view of culture as a complicated issue was accepted as appropriate. Future research should extend these findings to non-religious contexts.

Organizations can view the knowledge products in each IC area differently—there is no best way to view them. However, it is important that one's approach to increasing value in these knowledge products matches this view. It is also important that leadership continues to engage in this questioning process—not falling into complacency about how certain problems should be solved. They must remain constantly aware of times when the codified versions no longer work, and new knowledge from the complex reality of the system is required as a replacement.

By focusing only on the problem itself, leadership is more likely to rely on best practices and external knowledge solutions that do not match the complexity with which they discuss these problems. By uncovering these hidden assumptions about the knowledge needed, leadership can be more purposeful in their selection of solutions. Although the solutions occasionally matched these assumptions in the current study, organizations should focus on a more strategic matching that is not reliant on mere serendipity.

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