PRiS: Becoming a Designerly Learning Organization for a Flexible Adaptive Strategy

by

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Abstract

This paper puts together a comprehensive analysis of the Peace Region Internet Society [PRiS] with a list of recommendations that the organization can undertake to help solve internal challenges. PRiS is a non-profit internet service provider operating in northern BC. We are currently experiencing a decline in membership and an ensuing decline in revenue. This inquiry addressed issues surround this challenge. For this inquiry the authour surveyed the society's general membership and then conducted a design thinking workshop based on the results of the survey. The design workshop formed the core data gathering event of the inquiry and primarily included a range of group-based methods. I then analyzed, surveyed, and coded the data from the design thinking workshop and survey. From the data collection I generated a list of policy recommendations and actions that the society can undertake to solve the challenges of this inquiry. We found that the society requires significant change to move forward successfully into the future, the most important aspect of which, being the generation of a shared vision amongst the organization. Royal Roads University Research Ethics Policy guided all my actions during this inquiry.

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Chapter One: Focus and Framing

For my capstone thesis, I partnered with the organization I currently lead: The Peace Region Internet Society (PRiS). PRiS is a not for profit internet service provider that operates in North Eastern BC. When residents of the Peace Region founded the organization it quickly grew to over 7,000 subscribers who also became voting members of our not for profit organization (Peace Region Internet Society, personal communication, December 4th, 2018). Sadly, in the last 10 years the organization has experienced a drastic decline in membership and subscribers. We currently only have 1,200 subscribers who use us as their internet service provider (Peace Region Internet Society, personal communication, December 4th, 2018). This has resulted in our organization earning less revenue and not being able to cover operating expenses. Our inquiry sought to address this decline in membership by creatively searching for innovations that can allow us to grow our membership and thrive well into the future. We began the inquiry with surveying the membership on their internet usage and then conducted the first two phases of a design thinking workshop to generate some collaborative ideas on how to meet our communities' digital needs. I became interested in this subject due to the nature of my role at PRiS. I was hired by the board of directors to ensure the operations of PRiS worked efficiently. What I found was an organization struggling to survive, meet market demands, running out of money and miss-reading the needs of the community. When discussing the market, I am referring to the more general telecommunication market whereas when I discuss the community I am referring to the local needs of the Peace River Region. Meanwhile, customers refer to the individuals that subscribe to our services locally. This inquiry offered an excellent opportunity to dig into the dysfunctions that have brought PRiS to the edge of bankruptcy and dissolution. PRiS has already undergone minor changes, but it was my hypothesis that PRiS requires a significant restructuring

to move forward successfully into the future. Our inquiry sought to address the following questions and sub-questions:

"What do we need to change in our organization so that we can respond to market demands quickly and efficiently?"

a) "Can we inculcate an inquiry research process into the operations of the organization?"
b) "How can we become a learning organization?"
c) "How can we better design a process so that we can listen to the needs of our customers and community better?"
d) "How could (or might) the Peace Region Internet Society better serve community needs for connectivity"

Significance of the Inquiry

This inquiry was the second concerted attempt by the organization to conduct market research and organizational design. As I previously stated, PRiS is not currently accruing enough revenue to cover its operating costs and faces dissolution within four years. This would leave 1,200 residences in the Peace Region with few to no alternatives for internet services as well as leave eight loyal PRiS staff unemployed (Peace Region Internet Society, personal communication, December 4th, 2018). We posted a financial loss of $160,000 in the 2016/2017 fiscal year. On average we lose $15,000 cash per month (Peace Region Internet Society, personal communication, December 4th, 2018). We will face significant cash flow issues within the next year. This has also created a vicious cycle where as we lose money, we lose the capacity to take on large potentially valuable projects or hire the highly skilled technical staff we need to conduct regular operations which reduces services and drives more members away. Although government and non-governmental grants exist for us to take on new projects, none of these funding agencies

cover the entire cost of a project. They usually only cover a portion of the project. And when one considers the high cost of cutting edge technology and the challenging topography of the Peace Region, PRiS still requires reliable monthly revenue to ensure that funds are available to operate and grow.

This inquiry feels like a last chance effort to delve deeply into the organizational issues that have led us to this situation and to take meaningful action to generate revenue. Through surveying the membership and researching larger market trends we now have a better understanding of what modern consumers desire for connectivity. This could allow us to re-connect with our core demographic. I hypothesize that PRiS is in our current situation because we have done a poor job of listening to the demands of our consumers, especially regarding the speeds we offer. Surveying our membership was a good first step to address this. The second Design Thinking Workshop offered an excellent chance for the staff to really engage with the leadership and bring their frontline knowledge to meeting the demands of the consumers that are apparent in the survey.

The organization, key stakeholders and larger community could all benefit from the results of this inquiry. The biggest potential beneficiary is PRiS itself, and those that work within it. If the inquiry is successfully the Peace Region Internet Society will have a range of interventions that we can implement to make positive changes to PRiS and to hopefully arrest the decline. Hopefully, the resulting implementations will allow us to increase our revenue to the point where we are no longer in danger of dissolution. If the inquiry is successful, PRiS will survive and thrive into the future. The other key stakeholders, namely the staff and board of directors will benefit from the inquiry in that it supports the survival of PRiS. The survival of PRiS means that the employees continue to have employment and the board of directors won't

need to handle the long, fiscally dangerous process of bankruptcy. This will also benefit the author of this paper in that it will complete the requirements for a MA Leadership degree and will support their organization.

My inquiry may also benefit the surrounding community. The Peace Region of Canada suffers from a lack of internet service providers. This has created a situation where a few large telecoms [Rogers, Telus and Bell] dominate the market and charge monopolistic prices for their services ("The Largest Telecom Providers in Canada," n.d.). If PRiS survives, our region retains an experienced provider who can help keep the local market competitive. Additionally, the 1,200 current members of our organization who subscribe to our internet service wouldn't need to switch providers [something onerous and expensive] and will get the benefit of any changes that the team at PRiS implements.

Organizational Context and Systems Analysis

When I first came onboard at PRiS I began extensively researching the history and the current state of the organization. What I discovered was disheartening. Membership numbers had been in decline for a decade, revenue was shrinking while expenses were growing, staff turnover was high, and the organization was struggling to complete a project to achieve seven-year-old CRTC connectivity standards. I modelled some financial projections that showed that if things stayed the same, PRiS would dissolve within three years. I was curious as to how a well-regarded organization, founded to provide our region with leading digital technology, could find itself in this situation. My working hypothesis was that PRiS had grossly underestimated our community's demand for connectivity and services and was out of touch with what the people in our communities want.

I confirmed this hypothesis when I located a consultant's report from 2008. The

management of PRiS contracted this consultant to do an organizational assessment on PRiS because they were losing members and the executive felt that they needed a strategy to move forward. The consultant interviewed the staff, board of directors, current members, and past members to locate the reason for this decline in membership. This report found that the top reason people were leaving PRiS was a lack of access to high speed internet (Peace Region Internet Society, personal communication, December 4th, 2018) and a lack of weekend and evening technical support services (p. 9). Only one current employee was involved with this report. I asked her about the results and she said that management of the time dropped the report and no new strategies were ever adopted (A. Mah, personal communication, March 5, 2018).[1] It is even more telling that only a single copy of this report existed and was saved by the actions of this one staff. Reading this report confirmed my hypothesis that PRiS had lost contact with its members and their demands. Despite having annual general meetings where PRiS invites members to attend and voice their concerns as well as PRiS having a mission to run an inclusive non-profit, PRiS lost contact with its core customers and their demands had fallen on deaf ears.

Therefore, I chose to focus my thesis on PRiS and how it relates to our members. Our mission is "to provide, operate and maintain facilities for Internet communications for the use of its members and others" (Society Structure, p. 1). It became clear that we were not providing the internet services that our members wanted and were migrating to other providers. We had lost touch with the community's needs for connectivity because we weren't listening. This is where I think the leverage in my systems lies. The leverage in the system lies in how we listen and respond to members and customers. As such, I began this project through surveying our

[1] Permission from the original speakers received for all "personal communications".

membership, and then holding a workshop where we can interact with the findings in an open and honest way.

Systems analysis and boundaries. For a small organization, PRiS exists in a surprisingly large and complex system. As a non-profit telecommunications provider it straddles two heavily regulated sectors, each with their own governing policies, regulations, and reporting. We also operate much more like a traditional for-profit corporation in that we bring services to the market which people purchase. We reinvest our monthly revenue back into the business and use it to continue to provide services. We also apply for and receive large government grants to construct digital infrastructure and increase rural capacity for connectivity. The availability of these grants is determined by policy makers at the federal, provincial, and municipal level. These governmental entities are in turned affected by voter priorities. Additionally, our network fends off thousands of international bots attacks every day. We are at the mercy of larger market fluctuations and consumer demands as people's needs for connectivity are constantly evolving. Moreover, the technology we use to provide services is ever changing. The system of PRiS is remarkably complex and to locate actionable leverage points I have tried to bound it in a way that makes this possible. As such, I have bounded the system in such a way that we can change how we relate to our members and customers.

Bounded systems analysis. Williams (2008) related that system boundaries define how we frame the system. They determine the elements that are in the system, and outside it (para. 12). Williams said that the values of the person bounding the system, that is, what items we place in, and what items we exclude, determine what they place inside and outside the system (para. 12). As such, I have decided to bound the system of PRiS around the people of whom it is comprised. I broadly defined this as the macro-elements of the staff, the board of directors, and

the members. Each of these discrete elements has sub-elements that they affect. The people within my organization form the beating heart of it. It is their actions and decisions that determine our success. As such, they are the greatest leverage point that exists within PRiS. Senge, Hamilton, and Kania (2015) pointed out that effective leaders often work at creating the space for self-sustaining collaborative change, rather than pushing for change (para. 22). I designed much of this inquiry to make space for collective, collaborative change and as such, the staff and stakeholders of the organization formed the primary leverage point. Additionally, Senge at al. mentioned that no systems leader was effective on their own, but rather they engaged partners (para. 54). This reinforced the idea of engaging as many stakeholders as we could, I knew I couldn't do it alone, and we all needed to work together to generate the change PRiS needs. We are never going to have the resources or political power of our competitors, but we have a dedicated and capable team that believe in what they do and who are willing to go above and beyond for the organization.

Staffing. The first discrete element of my system is the staff of PRiS. I divided the staff into two discrete elements: the administrative team and the technical team. The technical team is responsible for managing anything of a technical nature. For example, they handle installing new members, managing servers, project engineering, run the helpdesk, software implementation, and more. The administrative team, including the chief operations officer [COO], meanwhile, handles member contact, performs administrative function, takes payments, manages the operations of the office, manages projects, and applies for grants.

Although part of the same element, these two sub-elements are distinctly different. The technical team is young, male, anarchic, and brilliant. Meanwhile the administrative team is older, female, prefers rules and procedures, and has less technical competency than the

technicians. Each of these elements has their own organizational culture and values. For example, the technical team's value technical competency and creativity while immersed in a culture of experimentation and play. Meanwhile the administrative team values consistency, reliability and accountability and prefers defined job roles and responsibilities in furtherance of this. These two distinct cultures clash consistently and are often mutually exclusive. This can create conflictual situations because each element has different expectations regarding service levels, communication, administrative duties, office duties, and more. Each element also has different standards through which they value other staff members, which leads to interpersonal conflict. For example, technicians value individuals who are technically competent and will sometimes fail to communicate well with the administrative team. The staff at PRiS have split themselves into two distinct and sometimes mutually exclusive organizational cultures, even though they are all dedicated and highly competent. As such, Senge's (2006) notion of an organization having a shared vision is important to PRiS. This is discussed in-depth for PRiS's context in the literature review of this thesis.

Board of directors. On top of this systems element exists the volunteer board of directors. The board of directors consists of members of our society who the members have elected during our annual general meetings. The board of directors brings its own system of values and culture to the organization. They are primarily older, risk averse and prefer rules and procedures, especially regarding governance. They have traditionally had little interaction with the staff and instead act through their primary officer, the COO/Executive Director/Systems Administrator. The directors, based on our bylaws and governance, are to provide strategic leadership and oversight, but the reality is that the COO is responsible for developing strategic initiatives. The directors live throughout the Peace Region, adding to the difficulty of holding meetings and

making decisions. Our society has traditionally struggled to ensure that we have enough directors to operate. Our bylaws maintain that we need a minimum of five or we must dissolve (Society Structure, p. 6). The directors also hold the ultimate responsibility and liability for the actions of PRiS.

Members. The final macro-element of my system analysis is the membership of PRiS. As previously mentioned, when an individual subscribes to our services, internet or email, they become a voting member of our society. We currently have around 1,600 members in our society. These individuals are primarily rural and often have little interaction with the society beyond paying for service. For example, their attendance at our general meetings has traditionally been less than 1%. It has been a long-time goal of PRiS to increase membership involvement within PRiS, but so far these initiatives have failed. This systems element is incredibly important because these members pay for their services. They provide PRiS with the revenue to conduct our operations and provide services: without them PRiS will go bankrupt.

Additional system considerations. There are a few other micro-elements within this system that came into play regarding the thesis: the size of the organization, the governance, organizational culture, vision, and values. As previously mentioned, each of the four distinct elements brings their own set of values and culture to the organization. PRiS has never had a codified and accepted master vision or explicitly stated value set. This has created some friction within the organization as each macro-element brings its own values, vision, and demands to the organization. The most explicit example of this is the differing value sets of the technical and administrative team. The technicians value initiative, experimentation, and playfulness, while the administrative team values procedures and policy. This created much difficulty in reporting on a three-year network expansion project because the technicians didn't track their expenses well,

creating an administrative burden on the reporting side. The friction amongst the team is still apparent during staff meetings and other planning events.

The governance and decision-making model of PRiS will form a distinct micro-element in this thesis as well. The volunteer board of directors hold the ultimate decision-making authority and liability for the actions of PRiS. However, the board stays out of the day-to-day operations of the organization, leaving that up to the COO. As mentioned, the board is to provide oversight and strategic direction, but in practice the COO generates strategy with input from the staff. The board of directors has traditionally had little interaction with the staff, and the staff little interaction with the board. This could be something that changes because of this inquiry.

The final micro-element of my system analysis will be the size of the organization. Our organization has around 1,600 members, but only eight staff, and seven directors. I consider this small size to be a distinct advantage of PRiS. It allows us to put everyone in the same room, to have open and honest conversations, and allows us to pivot our organization much more effectively. The small size also allows for the opportunity of creating novel decision-making models, like flattened organizations and democratic decisions. See Appendix A for a systems diagram of the PRiS system as I have bounded it.

System Implications of cultural variability. I can use the systems archetypes of Stroh (2015) to explain the different cultures and organizational values within PRiS and their systemic implications. The most apparent systems implication at play is the archetype of accidental adversaries (p. 61). This archetype occurs when two distinct organizations or groups seek to self-optimize at the expense of another group or organization (p. 62). This isn't a conscious decision to wound the other group for their benefit, but instead an unintended consequence of their decision. One can see this archetype within the macro-elements of the PRiS system and is a

result of the different values and cultures apparent within the organization. Each of the macro-elements within PRiS: the board, administrative staff, and technical staff all seek to self-optimize their sub-set of the organization, often to the detriment of the others. This has not been malicious, but more a function of blindness to how their actions and decisions affect other parts of the system. For example, paperwork on installation (an administrative need) has always been an issue within PRiS. Technicians fail to complete paperwork and the administrative team gets upset. Administration then builds or develops paperwork processes that they then task the technicians with completing. Technicians refuse to do it, because they can optimize their work through not completing paperwork, and the process starts again. The traditional approach to fixing these issues has always generally been a quick fix: here, creating and customizing paperwork. The fixes that they have been trying have been quick fixes that leave the underlying problems untouched: also known as the shifting the burden archetype (Stroh, 2015, p. 55). This systems implication plays out when every macro-element interacts.

The result of this systems archetype is that PRiS has struggled because the macro-elements have had trouble aligning their actions and standards. If anything, they spend much of their time competing with one another in their quest to self-optimize rather than spending their time listening to the members and developing solutions for them. Of course, this lack of focus on the membership, and providing them the services they demand has been a contributing factor to driving away our membership and subscriber base. When we spend our effort struggling with one another, we lose the effort we could have spent serving our community and retaining our membership. This of course has driven down our revenue and we are operating at a significant loss and in danger of dissolving if things continue.

Overview of Thesis

The following chapters will present the reader with the remainder of the thesis. Chapter 2 contains the literature review where I present literary sources and ideas that relate to the subject matter of my thesis. In this section I will present concepts including panarchy, design thinking, learning organizations, action research, and more. In Chapter 3 I will present my methodology and my rationale for choosing said methodology. Additionally, I will describe the conduct of my inquiry and the ensuing ethical considerations. Chapter 4 will consist of the findings and conclusions of my inquiry. Finally, Chapter 5 will consist of the implications and recommendations of my inquiry. I formulated this from the findings and conclusions presented in Chapter 4 with a synthesis of relevant literature that will suggest a range of policy changes, or organizational practice changes that will address the primary and secondary questions of my inquiry. I will support these potential recommendations with academic literature and concepts that presented in Chapter 2.

Chapter Two: Literature Review

The literature I reviewed for this inquiry included the topics of design thinking, systems thinking, action research, learning organizations, and shared visions. In general, researchers introduce group-based methods like design thinking and research paradigms like action research in the methodology section of an inquiry. However, as these two subjects may also form policy intervention or implementation as part of the suggestions for the thesis it requires an exploration of the literature to ensure that I grounded policy suggestions in the literature. The other subjects emerged from the research data. As part of this literature review, I have synthesized many of the ideas together and shown how they can supplement one another to support the final concept of a learning organization.

Meta-Intervention and Design Thinking

I first reviewed literature surrounding the modern discipline and practice of design thinking. Although design thinking formed a key aspect of my data collection methodology, I hypothesized that the process of using design thinking as a data collection method would form a meta-intervention for my organization. Using design thinking as data collection allowed me to see how it would function in my organization and what the stakeholders and participants thought of it. Using design thinking as a data collection method also resulted in rich artefacts and observations from which I could draw conclusions. The exercises we performed as well as the different and empathic design thinking principles we adhered to during the event resulted in the beginnings of a culture shift within PRiS. Staff and management now filter much of their discussions through the lens of empathizing with our members (IDEO, 2015 p. 10), experimentation, and toleration of failure, all of which are design thinking principles (Cousins,

2018, p. 12). As I wove design thinking through my inquiry it seemed prudent to begin my literature review with a survey of design thinking.

Design thinking is a mindset, range of principles, and collection of methods that designers use to create and drive innovative solutions to often wicked problems; wicked problems being those that are complex, ambiguous, and have no easy solution (Cousins, 2018, p. 6). I think that the most important aspect of design thinking is empathy (IDEO, 2015, p. 10). A designer should start their design by shifting their perspective to the audience they are designing for. Sometimes a designer can even invite the end user to aid in the design challenge. Gould and Lewis (1985) codified additional aspects of design thinking when they presented three further principles: early focus on the user, usability, and iteration informed by data from the users (p. 300). Meanwhile, prototyping and experimentation are other important aspects of design thinking and are apparent in design methods. These methods often follow a chaotic and iterative process to allow for prototyping and feedback, and designers divide them into the inspiration, ideation, and implementation phases (Brown, 2008, p. 89).

Divided discourse of design. Following in the footsteps of Johansson-Sköldberg, Woodilla, and Çetinkaya (2013), design thinking is a discipline and concept that scholars split into two distinct streams. The first stream, which Johansson-Sköldberg et al. termed "designerly-thinking," refers to more academically natured design literature which underpins professional designers plus the academic theory surrounding their work (p. 123). The second stream, referred to as "design thinking," refers to any disciplines or areas where individuals do not usually use design theory and practice (p. 123). Often these areas are beyond usual design disciplines and conducted by people with little professional or scholarly background in the field (p. 123). This second stream is particularly popular in "practical management discourse" (p. 123). I found this

definition and understanding particularly useful for surveying the diverse and varied literature that makes up the corpus of design thinking.

Designerly thinking and academia. As Johansson-Sköldberg et al. (2013) mentioned, practitioners conceive designerly thinking as being the professionally focused approach to design thinking that has a corpus of academic theory underpinning its practice (p. 123). The important distinction that Johansson-Sköldberg et al. used to distinguish this stream of design thinking from the more casual design thinking of the management world is the academic rigour that is apparent in this stream (p. 123). I found a good example of this more scholarly focused designerly thinking in the writing of Cousins (2018).

Cousins (2018), writing on design thinking and how it can assist organizations to handle volatile, uncertain, complex and ambiguous (VUCA) contexts, found that design thinking is a powerful tool that managers and organizations can use to encourage absorptive capacity of knowledge to assist in organizational learning to help them operate in VUCA environments (p. 13). Cousins also reported that for design thinking to be useful for organizations, organizations need to meet key requirements. The first is to understand that the success of design thinking in an organization is contingent on organizational factors (p. 10). This reinforces the idea that design thinking is not suitable to each organization and may only be suitable for some situations within PRiS. Additionally, Cousins found that design thinking is closely related to action-based learning and is explorative and experimental (p. 11). This also supports that idea that design thinking is a method that pairs well with action research within an organization due to both approaches emphasizing learning in practice. Cousins' findings are particularly useful as they show that design thinking, action research, and organizational learning are all mutually inclusive and which we can synthesize into organizational life in a general approach. These may also form a policy

implementation in PRiS. Especially as I think that PRiS, as a telecommunications provider, exists in a VUCA environment.

If Montaigne was a designer. Michel de Montaigne was a 16th century French philosopher who held the view that academics concern themselves with topics unimportant from the concerns of the real world. He is well known for saying, "And as for the facts, a thousand little women in their villages have lived a more equable, sweeter, and more consistent life than his," in response to Cicero pontificating on the virtues of a scholarly life (Montaigne, 2003, p. 437). This reflects his thoughts that knowledge and wisdom can exist far from the venerated halls of academia and can lay in the experience and knowledge of less educated people. In stark contrast to designerly thinking stands the more popular management focused design thinking (Johansson-Sköldberg et al., 2013). Johansson-Sköldberg centered this stream of design thinking around using design practice and concepts in settings where designers don't often use design thinking and with people who do not have a background in design (p. 123). As such, this stream of design thinking has a more casual approach. This stream of discourse invites managers to use design thinking principles to guide their management decisions (p. 127). Johansson-Sköldberg et al. related that often the literature surrounding this type of design thinking focuses on successful case studies of managers using design thinking or using design as a metaphor (p. 127). This is something that I found while reviewing the design thinking literature. There are articles that use design thinking as a way to address dissatisfaction with capitalism (Brown, Martin & Berger, 2014), design thinking as a tool and method to help conduct successful meetings (Bernstein & Ringel, 2018), and articles showing the success of PepsiCo CEO Indra Nooyi in using design thinking principles to make shrewd business decisions (Ignatius, 2015). Included in this second stream would be the entirety of the IDEO approach to design (IDEO, 2015), a core approach that

I used for this inquiry. IDEO as an organization has worked to bring designerly thinking principles to the management world and has become a well-known design thinking consulting agency (Johansson-Sköldberg et al., 2013, p. 128). These articles show that design thinking has moved beyond academia and into more public discourse. And as such, is something that we can interweave into the everyday operations of PRiS and formed an intervention as part of this thesis.

Although the design thinking articles all deal with a range of subjects and problems to address, through adhering to design thinking principles they experience remarkable success at solving real world problems. When discussing the woes of capitalism, Brown, Martin, and Berger (2014) said that practitioners can solve the problems by trying solutions in the real world and then evolving them as they fail or succeed (p. 3). Meanwhile a children's hospital invites children to share their experiences to develop a deep understanding of their situation so that designers can empathize with their needs and design better solutions (Liedtka & MacLaren, 2018, p. 2). In yet another piece, Liedtka (2018) related a remarkable example of empathy when she told the story of a designer empathizing with autistic individuals to help design living spaces to help them live fuller lives (p. 76). Here it is easy to see the design principles of empathizing, democratizing, and experimentation at play. I find this to be the most remarkable thing to emerge from the literature surrounding design thinking. It is incredibly successful. According to much of the literature, scholars have shown that design thinking principles and methods are successful in a range of applications and situations. This supports the idea that it may be a suitable modality for PRiS to adopt in the future.

Something wicked this way comes. However, design thinking is not without criticism. Iskander (2018) viewed design thinking to be an inherently conservative method that preserves the status quo (p. 1) by privileging the designer (p. 4). Through privileging the designer, Iskander

said that design thinking limits participation (p. 2). This is because in Iskander's estimation, the designer forms a sort of gate-keeper who must approve or deny proposed solutions as they see fit. This process is in turn influenced by the designer's positionality and power (p. 4). Additionally, design thinking's lack of accounting for this positionality makes empathizing with the users difficult as designers will filter their experiences through the designer's bias (p. 4). This stifles creativity because the designer can only conceive of relationships and solutions filtered through their own limited experience (p. 4). As I was the individual most versed in design thinking and held power over my project participants, this was a decided danger during my inquiry. However, I was able to mitigate much of this danger through anonymous feedback options for project participants, reflective journaling, and participant check-ins post workshop. I think this exposes one of the weaknesses of Iskander's critique. Nowhere does the author allow for the possibility that a designer may mitigate this bias, that the bias may be non-existent, or that privileging the designer may be the right decision in certain contexts.

Action Research in Action

Like design thinking, the action research approach of this inquiry formed a meta-intervention that functioned to assess the effectiveness of action research as an approach to PRiS's operations and planning with the goal of answering the research question for this inquiry. Additionally, one of the sub-questions for this thesis asks how we can inculcate an action research process into the organization of PRiS. This is because action research embraces *praxis* wherein practitioners interweave theory and action in a dialectic relationship where "theoretically-informed-action and action-informed-theory constantly co-produce one another" (Allen & Dovey, 2016, p. 16). This approach of learning by doing pairs well with the iterative

and experimental nature of design thinking and would be an excellent approach to support PRiS becoming a learning organization (sub-question b).

Action research also strongly adheres to the goal of emancipation. In an action research sense, the purpose of research is aimed at locally contextual knowledge, within the bounds of a constructivist understanding, but also at allowing people within organizations or social systems to, "improve the researched subject's capacities to solve problems, develop skills (including professional skills), [and] increase their chances of self determination" (Romme, 2004, pp. 495-496). This emphasis on emancipation and democratic participation within an organization reinforces the framework through which the stakeholders at PRiS can unlock the tools needed for innovation and through which PRiS may be able to become a learning organization.

According to Herr and Anderson (2005), action research as an acceptable academic process, appeared from the work of Kurt Lewin in the 1940s (p. 4). His approach was based on the idea that knowledge should be based on problem solving in real-life situations (p. 4). As an approach to research that is over 70 years old, the corpus of literature surrounding action research is colossal. Scholars later refined action research into different novel approaches but all share the idea of *praxis* and emancipation. For example, Argyris (Herr & Anderson, 2005) redefined action research into his concept of action science. This approach to action research seeks to challenge the status quo of everyday operations in organizations by stressing organizational learning (p. 8). Meanwhile Paulo Freire developed the method of participatory action research that views research as a method of social action (Glassman & Erdem, 2014, p. 209). This participatory approach emphasizes "equity, self reliance and oppression problems" (Herr & Anderson, 2005, p.10) with an ontological desire of liberating humans so that they may become more fully human.

Leadership and action research. Researchers have shown that action research can be successful in helping organizations unlock creativity within their staff who are then able to generate innovations to help solve organizational challenges. Allen and Dovey (2004) wrote on the experiences of two technical organizations that inculcated an action research outlook into their innovation and design teams. Prior to the implementation of action research in these teams, their innovations had stagnated with no significant innovations coming from either of the two teams for over three years (p. 17). An action research approach to innovations allowed these teams to produce four significant innovations (p. 28). Allen and Dovey attributed this directly to the implementation of action research (p. 28). Interestingly for PRiS and this inquiry, the organizations in questions were large technical telecommunications organizations. This shows that at the very least, action research can be successful in generating technical solutions and innovations.

The most fascinating finding of Allen and Dovey (2004) was that action research within an organization needs novel leadership techniques and different approaches to team dynamics. The earth-shattering conclusion that Allen and Dovey found was that "social innovation preceded technical innovation" (p. 21). It wasn't until the teams changed their social interactions and leadership approach that technical innovation followed. The teams had four big behaviour changes that allowed them to innovate successfully; they shifted perspective (p. 22), practiced intellectual humility (p. 23), had negotiated hierarchies (p. 25), and had direct and empathic communication (p. 27). These social innovations echo the learning organization requirements of which Senge (2006) wrote. Shifting perspectives mirrors exposing mental models (p. 176), in that individuals must think past their own mental models to view the world from another's. Intellectual humility, direct empathic communication, and negotiated hierarchies all have echoes

of the requirements for team learning because for team learning individuals need to engage in dialogue through treating one another as equals, communicating openly and suspending assumptions (p. 226). This shows that although learning organizations and action research may not need one another, they can at least be supplemental. This article made it clear to this inquiry that for PRiS to innovate, we needed action research, which in turn needs different social approaches.

One method to rule them all. I think that for an organization the strength in action research is when an organization applies it long term in a series of iterative cycles as opposed to a single action research event. As such, it almost represents more of a concerted effort and mindset shift than a policy change. Action research, as presented by Coghlan and Brannick (2005), is an ongoing series of inquiries that follows a cyclical iterative approach (p. 24). See Appendix B for an example of this model. These iterative cycles also mirror the approach that the teams in Allen and Dovey (2004) took for using action research as a tool for innovation. This allows an organization to prototype and implement new products, services, or structures, assess their effectiveness, refine their ideas, and then try them again. Brandt (2002) found that this approach was successful for technical product development, especially when involving the end-user of the product in the design. The designers in Brandt's study initially released a product to the market but found out from customer feedback that the design team paid insufficient attention to the user's needs (p. 115). They conducted four product design workshops, each time with the end users and found that they created products faster than usual, while internal coordination and collaboration improved (p. 119). This of course, echoes the inclusive nature of design thinking and strengthens the case that organization can pair action research and design thinking

successfully. Also, we can see in Brandt's study that the organization went through multiple cycles of action research before they landed on a product that was marketable and profitable.

The corpus of action research is large, diverse, dense, and remarkable. Scholars and practitioners have shown that action research can be successful, not just in an academic setting, but also in an organizational setting to help drive innovation and creativity. Therefore, it may be useful for PRiS to adopt. We exist in a turbulent and complex system. Telecommunication technology is ever changing, consumer trends evolve, and we face large competitors that overwhelm us on every metric. Creativity and innovation unlocked with action research and design thinking may be the best tools PRiS has to survive and thrive into the future.

Systems Thinking Systems Sight

Any meaningful change within PRiS will have to consider the larger systems at play. Changes at one level will have unintended consequences and affects at other levels that may slow or stop the changes needed. For example, expanding the products and services of PRiS may increase labour overhead meaning we cannot support existing services which leads to a decline in subscribership and an ensuing decline in revenue. Additionally, PRiS exists in a complex and turbulent industry. According to Snowden and Boone (2007) complex systems require a novel approach to leadership wherein organizations need to tolerate uncertainty and respect the concept of emergence. I can synthesize other systems concepts and approaches with the *Cynefin* model (Snowden & Boone, 2007, p. 72) to help in creating a deeply nuanced understanding of the system within PRiS and how they operate. These other systems concepts include ideas like panarchy, equifinality, emergence, and systems archetypes.

Emergence and complexity. Emergence and complexity are hallmarks of the *Cynefin* model of understanding systems, and which works well to assist PRiS with understanding the

system in which it exists. See Appendix C for a diagram the *Cynefin* model. This model divides systems into four broad categories: simple, chaotic, complicated, and complex (Snowden & Boone, 2007, p. 72). Each of these four categories requires an organization to use different behaviours to navigate them successfully. The two that most apply to PRiS are complicated and complex systems. Complicated systems are where often only experts can see cause and effect (p. 71). This affects PRiS in the manner that the technology we use to complete our mission is complicated and requires expert engineers to diagnose any issues. Thankfully, PRiS has a skilled technical team and can handle technical issues with alacrity. The more challenging category for PRiS to navigate is complex systems, the "domain of emergence" (p. 74).

Complexity is challenging for an organization because of its ambiguity, uncertainty, and especially because it is a context where right answers may not exist (p. 74). The model suggests that for a leader to navigate this context they must probe, sense, and respond to the emergent patterns within the system (p. 74). There always remains a temptation for leaders to respond to the ambiguity with command and control techniques, but this may stifle creative solutions and one may not see the emergent patterns (p. 74). Additionally, leaders must accept and tolerate failures when in a complex system and this is something that PRiS struggles to do (p. 74). Snowden and Boone suggested that a leader work towards creating an environment where patterns and creative solutions can emerge, rather than trying to plan or control (p. 73). The literature suggests that complexity is a daunting but solvable challenge for organizations, but one where the organization needs to access novel operative systems.

Final equifinality. Equifinality is a concept that pairs well with the *Cynefin* model as it allows for contingency and creativity. Equifinality is that idea that open systems can reach the same end state from different starting states and through different paths (Chisholm, 1967 p. 49).

General system theory holds this is the case regarding open systems, which most organizations are (especially if they're learning organizations). Gresov and Drazin's (1997) approach holds that organizations can often choose between multiple different structures that can all address the same organizational function, hence there is structural equifinality (p. 408). This is especially true given an organization that has a singular function (i.e. providing internet), and where a manager has knowledge enough to make reasonable trade-offs (p. 416). Gresov and Drazin called this type of equifinality trade-off equifinality and it is only possible in an organization where functions are not exclusive or in conflict. Thankfully, PRiS's function as an organization is to provide internet in a rural capacity, so there is little conflict amongst the functions we need to perform. Equifinality synthesizes well with design thinking, action research, and the emergence expected with complex systems. This is because I can use design thinking and action research to probe complex systems, while also using the concept of equifinality to support the idea of emergence and creativity. Equifinality supports the ideas that an organization may reach desired end states with different approaches, but an organization may need to experiment to find the path to them.

Panarchical creative destruction. Panarchy is a four-stage cyclical view of ecosystems and social hierarchies that models how complex systems organize themselves across time (Allen, Angeler, Garmestani, Gunderson & Holling, 2014, p. 578). Interestingly, this model holds that changing stimuli and process may come from a top-down manner or a bottom-up manner, meaning that the systems and different Panarchical cycles have "cross-scale linkages" where change in one area effects another area (p. 578). Although a model often used for understanding complex ecosystems, I can use panarchy as a model for innovation and understanding emergence in organizational systems. Panarchy describes complex systems as consisting of four stages,

exploitation, conservation, creative destruction, and reorganization (Gotts, 2007, p. 2). See Appendix D for a diagram of this model. This four-stage process suggests a conceptual framework for understanding organizations centered around constant "cycles of destruction and renewal" (Allen, et al., 2014, p. 581), with the third stage becoming a metaphor for creative destruction. In the first stage, we would see an organization create its product and place it in the market (exploitation), then the organization grows through selling the product (conservation). Eventually, due to changing market demands, or some other stimulus the organization needs to retire its old product (creative destruction) and then create something new in its stead (reorganization). This model is exceptionally important because if organizations do not sustain change and renewal, they conform to closed systems concepts like entropy rather than open systems concepts like equifinality (McGivern & Tvorik, 1998, p. 248). As an abstract concept, I can use panarchy to help understand the emergence of new ideas and innovations at PRiS, as well as support the practice of killing off innovations or ideas no longer relevant to make space for new ones.

Emergent patterns and stories. The final systems concept I reviewed for this inquiry are the systems archetypes (Stroh, 2015: Senge, 2006). These systems archetypes are conceptual frameworks through which to understand and communicate the behaviour of a system. For example, the common systems archetype of limits to growth (Senge, 2006, p. 94) describes a system where the accelerated success of a given event creates a decelerating counter process that slows the initial success (p. 94). An example of this may be a new technology for internet service that is incredibly popular but that creates such a draw on the backhaul bandwidth that the technology cannot maintain speeds; these reduced speeds negatively effect customer experiences and then growth slows. One can address each of the systems archetypes in its own way but often

they require lateral thinking as well as an individual who can spot the systems archetypes in play. This concept pairs well with the *Cynefin* model (Snowden & Boone, 2007) as the patterns that emerge in a complex system may be the systems archetypes and can help one to spot them and manage their behaviour.

Shared Visions

Another topic of review for this inquiry is the concept of a shared organizational vision. There are many definitions for what a shared vision is. Loon Hoe (2007) defined a shared vision as a clear communicated vision of the desired future state of an organization that members of the organization share with one another (p. 12). Meanwhile McGivern and Tvorik (1998) presented seven different definitions of shared visions from various authours (p. 248). Senge (2006) said that a shared vision is an answer to the question, "What do we want to create" (p. 192)? The key themes running through all these definitions is that a vision focuses on the future state for the organization and involves the entire organization. The shared vision, when developed by an organization, focuses on teamwork and the shared creation of the organization's future (Wilder, 2013, p. 1). Scholars often view a shared vision as indispensable for a successful organization (Senge, 2006, p. 193) and a key part of a becoming a learning organization (Loon Hoe, 2007, p. 13). A shared vision is important to this inquiry due to its importance in generating a flexible, adaptive strategic plan suitable for complex systems.

Emergent flexibility in strategic planning. The most compelling aspect for PRiS regarding shared visions is how it relates to successful strategic planning. It seems axiomatic to say that an organization needs a shared vision to develop a strategic plan because it sets the destination towards which the strategy aims. Without a shared vision the strategic plan is aimless, and organizations that had visions would perform better than those that don't. This

seems to bear out in the literature with Kotter and Heskett (1992) presenting results from two organizations, one who didn't use visionary strategic planning and one that did. They found that over an 11 year period the organization that used organizational visioning increased revenue by 682% while the other 166%, the visionary organization increased its workforce by 282% while the other grew 36%, the visionary organization's stock prices rose 901% while the other grew 74%, and finally the visionary organization increased net incomes by 756% while the other grew by 1% (p. 11). These results show that some organizations perform exceptionally well using strategic shared visions compared to those that don't.

Shared visions also create a potential road map that can guide the actions and decisions for an organization and its members. This allows space for flexibility in an organization to respond to emergence in complex systems. This flexibility and adaptability lead to greater organizational effectiveness (McGivern and Tvorik, 1998, p. 247). Amar and Hlupic (2016) even presented this approach as a leadership technique where a collective vision is determined and used by staff to guide their decisions, unlock their creativity and drive organizational innovation in contrast to a leader who directs the actions of their team (p. 246). Loon Hoe (2007) reinforced this through arguing that staff are less likely to share desired organizational outcomes without a shared vision (p. 12). Loon Hoe further refined this by saying that shared visions form a general guide on the knowledge needs of an organization (p.13). This guide empowers staff to seek the knowledge the organization needs and disseminate it in a suitable manner. Learning is akin to sensing and probing a complex system for patterns which is the prescribed method of navigating complex systems (Snowden & Boone, 2007). The shared vision creates a strategic guideline to inform direction while the specific details appear later (Loon Hoe, 2007, P. 13). This allows space for emergence and flexibility in an organization's strategy.

Learning Organizations

The topics in this literature review and larger inquiry are related and may supplement one specific concept, the learning organization. Literature and concepts surrounding learning organizations have been around since the 1940s (Bencivenga, 1995, p. 1), although heavily popularized within corporate America by Senge in the 1990s (p. 2). The idea is that organizations need to create structures and cultures that enable them to learn so that they can survive ever-changing turbulent environments and markets (Torlak, 2004, p. 89). Senge (2006) reinforced his point saying,

> as the world becomes more interconnected and business becomes more complex and dynamic, work must become more "learningful." It is no longer sufficient to have one person learn for the organization, a Ford or a Sloan or a Watson or a Gates. It's just not possible any longer to figure it out from the top and have everyone else following the orders of a "grand strategist." The organizations that will truly excel in the future will be the organizations that discover how to tap people's commitment and capacity to learn at all levels of the organization. (p. 4)

This is especially pertinent given this inquiry's focus on the complex systems of the *Cynefin* model (Snowden & Boone, 2007) and PRiS's existence in the technologically based telecommunications industry. Like so many other concepts there are many definitions surrounding what exactly a learning organization is, does, and how to become one.

Defining the undefinable. Although there are some "definitional inconsistencies" (Chadwick & Raver, 2012, p. 959) between scholars in what exactly defines a learning organization, there exist similarities that allow for a general understanding. Learning organizations are organizations that have developed methods, cultures, structures, and

perspectives of learning, throughout every level of the organization. Leaders and managers do this in furtherance of making an organization better able to adapt to the change, turbulence, and complexity of the modern world. Organizational scholars further characterize learning organizations by their flat hierarchies, empowered staff, and emphasis on teamwork (Akella, 2007, p. 16). These flattened organizations result in leaner bureaucracies, reduced need of supervisors, reduced operating costs, and an increase in operational speed which allows for better flexibility (pp. 16-17). This opens the door for creativity and innovation within the organization (p. 17). The core idea is that everyone in the learning organization is responsible for learning, and to some level, decision making. This shifts responsibility not just to a few key executives or managers, but to the entire team. Dovey (1997) went a step further, saying that creating shared power is one of the core concerns of a learning organization (p. 336). There seems to be a range of methods and suggestions for how to develop these kinds of organizations, with Senge's (2006) five disciplines being the model that this authour finds most compelling.

Five disciplines to rule them all. Senge (2006) presented five disciplines that individuals and then organizations need to master to become learning organizations: shared vision, team learning, mental models, personal mastery, and systems thinking. I won't discuss shared visions or systems thinking as I have discussed them previously in this literature review.

Personal Mastery. To Senge (2006) personal mastery is a phrase meant to represent the discipline of personal growth and learning (p. 131). Individuals with personal mastery constantly seek to create the life they desire. Learning organizations require this, because an organization is the people within it. They may have products, services, histories, a building, robotic assembly lines, but at the end of the day organizations consist of people. If the people that make up your organization don't, or aren't able to learn, then the organization won't.

Mental Models. Mental models are the cognitive constructs we carry with us that often control or colour how we see the world (Senge, 2006, p. 164). Senge suggested that people and organizations work to surface their mental models, not so that an individual may dispose of them, but so one can examine and improve upon them (p. 163). Often mental models get in the way of innovation because they can become implicit and exist below the level of awareness (p. 166). Because they are unexamined, they remain unchanged as the world changes around them. As such, soon, if not examined, mental models become out of date and apply to a world that no longer exists.

Team Learning. This is the process and capability of aligning a team to create the results that the members of the team desire (Senge, 2006, p. 218). This is related to the concept of a shared vision but is more defined by the ability of a team that can learn together (p. 219). If teams don't develop the skills needed to learn together then their collective intelligence is less than any one individual. As such, Senge said that to master team learning an organization must access the larger pool of meaning available to teams through dialogue (Bohm, as cited in Senge, 2006, p. 223). Dialogue moves beyond one person's understanding; the team works to discover something together. In this, it is much like the Socratic dialectic method where an interlocutor asks questions to help an individual clarify their position. This discipline relates incredibly well to action research and design thinking, because at its root, design thinking, action research, and dialogue are about discovery and learning as a collective.

Inceptual loops. Another important concept for learning organizations are single-loop, double-loop (Chadwick & Raver, 2012, p. 959) and triple-loop learning (Torlak, 2004, p.99). Single-loop learning is the ability of an organization to monitor accepted performance metrics and then modify its operations accordingly to better meet them (p. 97). Double-loop learning is

the ability of an organization to question organizational norms (p. 97). As such, members of a learning organization should learn to use both types of questions to ask, are we doing things right (single-loop) and are we doing the right things (double loop) (p. 99)? A third type, confusingly referred to as a third type of single-loop learning, or triple loop learning (p. 99), has a learning organization question the inherent power dynamics in play and assess whether the organization is truly learning in a fair dialogic, non-coercive fashion. Triple-loop learning is important as it challenges some of the core assumptions around hierarchies in an organization. The inceptual learning loops are important because they form a conceptual framework for how an organization can question itself on three meta-levels in a quest for better performance.

Group coercion. Although learning organizations purport to democratize and empower their members, Akella (2007) argued that they may form a distributed managerial control mechanism that operates through social pressure rather than fiat management. This may lead to organizational dysfunctions and frustrated, abused staff. Compellingly, Barker (1993) presented research where, because the locus of control for work norms and behaviours moves from a single superior to a group of workers, control becomes exerted by the entire collective, who then, "became their own master and their own slave" (p. 433). This means that instead of a single individual monitoring the behaviour of a worker, the entire workforce monitors behaviour. This led one individual to exclaim in Barker's study, "that now the whole team is around me and observing what I am doing" (p. 408). I think that this represents a significant danger to PRiS as because it is a technical organization with some highly specialized staff, there is the potential for knowledge-based coercion and social pressures to assert control or dominance. However, I think this is where triple-loop learning is important. As previously mentioned, those in a learning organization use this type of learning to question the power dynamics at play to ensure that they

are meeting the principles of a learning organization and that everyone feels empowered and can contribute to the organization free from coercion.

All Roads Lead to Learning Organizations

As PRiS exists in a complex system in a complex industry, the challenges it faces are diverse and unforeseeable. I mirrored this in this inquiry, the subjects in the literature review meandered through numerous, but related topics. I first presented design thinking and the conceptual understandings underpinning it. I presented literature surround action research, how it is applied to organizations, and how it can supplement design thinking. Next, we discussed systems thinking and the importance of shared visions. Finally, all these subjects we tied together in a brief review on the nature and philosophy of learning organizations, and how they can all support PRiS's development into one. The literature I reviewed in this chapter grounded this inquiry's underlying philosophies in the world of academia. This provides PRiS with map on how we can guide it into the future.

Chapter Three: Methodology

I conducted my inquiry through pairing Greenwood's (2007) pragmatic action research, Coughlan and Coghlan's (2002) action research cycles, and IDEO's (2015) human-centered design. Additionally, I made sure to keep in mind Torbert and Taylor's (2008) first-person, second-person, and third-person perspectives. My organization has struggled with entrenched silos of expertise, conflictual relationships between the staff and the board of directors and individuals using command and control styles of leadership that have stifled creativity and learning. I am hoping that by orienting my stakeholders to the future with design thinking I can bypass the possibility that individuals will use this project as an opportunity to lay blame. Using pragmatic action research, action research, and design thinking, I think we can help foment all the creativity and passion that our stakeholders can show.

Pragmatism *Über Alles*

The overarching action-research approach that united all aspects of our inquiry was Greenwood's (2007) pragmatic action research. Pragmatic action research begins from the philosophical school of pragmatism made concrete by William James. Florczak (2015) succinctly summed up this philosophy when she explained that pragmatism does away with attaining authentic knowledge, and instead argues that the dogmatic adherence to paradigmatic stances that block knowledge is not in the interest of humankind (p. 281). There are three aspects of pragmatic action research that made it appealing for our organizational inquiry: allowance for experts, democratic approach, and methodological freedom. Pragmatic action research is an approach that allows a researcher to choose the best methods "according to the concrete needs of particular groups and situations" (Greenwood, 2007, p. 131). To Greenwood, action research inquiries are also meant to create more democratic, fair, and sustainable human situations, and

the researchers should use any method or framework to do so (p. 133). Florczak (2015), expresses this point even more strongly when she says that mixed, pragmatic methods, are for those who believe the goal of research is for good of humankind and that researchers should use all types of knowledge to understand a phenomenon (p. 281). However, Greenwood (2007) realized that to successfully overcome challenges we need expert knowledge and that organizations sometimes require those same experts (p. 134). This approach is meant to engage professional experts with local stakeholders (p. 132). Additionally, the flexible approach to data gathering, specifically the allowance for any combination of qualitative or quantitative data collections methods made this method exceptionally attractive for our inquiry.

Expertise and democracy. The first two aspects of pragmatic action research that made it useful for our inquiry was how it pairs professional experts with local stakeholders in a participative and self-managing process (Greenwood, 2007, p. 132). Our organization is a non-profit internet service provider that draws its board of directors from our existing membership. Often, these directors have little technical expertise. Unfortunately, the nature of our non-profit means that to make effective strategic or leadership decisions one needs to have some level of technical understanding. This suggests that PRiS needs to evolve and allow experts to make the decisions on the direction of PRiS. However, one of the core values, and original visions for PRiS, was that our community and members would guide the organization. Member involvement in decision making and leadership is integral to the soul of PRiS and makes it the unique organization that it is. So, although members and the directors who form the board have little of the technical expertise to make informed decisions, they are an important aspect of the organization and make sure that we maintain focus on being local and serving the community. The board of directors needs professional expertise to help guide decisions.

The democratic pursuit of pragmatic action research also makes it an excellent approach to integrate the staff into the inquiry as well. The staff at PRiS have had little involvement or input into the direction of the organization. This represents a tremendous missed opportunity. The staff have an incredible depth of understanding and range of experience conducting the day-to-day operations of PRiS that their input could be of incredible use to the organization. They are the professional experts that Greenwood (2007) called to support local stakeholders. In fact, I hypothesize that including the staff more in the strategic direction of PRiS will build commitment and buy-in from the staff to our mission and may even reduce turn-over (a perennial problem). Although staff may be the professional experts, they are also stakeholders of PRiS [and this inquiry] and some even get internet service from us.

With Greenwood's (2007) pragmatic action research guiding our inquiry I can integrate and potentially create a more sustainable and capacitive organization. It allows for a confluence of technical expertise and democratic participation which, as previously mentioned, is the core of what PRiS is. This approach allows the staff to integrate their technical skills with the democratic and community focus of the organization. This supports the goal of a helping PRiS develop and enact more comprehensive and informed strategy and responding to market demands more efficiently. Additionally, the democratic nature of this approach creates space for the board of directors to let go of their traditional hold of power and involve the staff. This inquiry may even form a meta-intervention through its use of pragmatic action research as through this project the staff and board of directors have communicated directly for the first time in decades.

Freedom of method. The second most important aspect of pragmatic action research that made it applicable to my organization was its allowance for a range of methods and approaches. As Greenwood (2007) stated, action research is a method for creating arenas of participation and

more fair, just, and democratic situations, and researchers should use any method to do so (p. 132). This stance was incredibly useful for my organizational inquiry. As a technical organization, the staff and board of directors highly value quantitative data. We like hard numbers. We dislike anecdotes and stories, especially when it comes to technology and work flow. For example, the board of directors initially refused to believe the amount of time it took supporting email, because the only data we had on it were the qualitative reports of the staff. This extended to contact with our members and may have contributed to our historical deafness to their demands. Although the staff constantly reported anecdotes from our members regarding their desire for faster speeds, better services and reliability, PRiS as an organization never listened and rarely made any moves to address these demands. This synthesis of methods and data collection is of significant use to my inquiry because I can balance our value of appreciating quantitative data as well as honouring the narratives that stakeholders bring forward. This freedom of method makes pursuing mixed methods particularly doable. By using mixed methods, quantitative and qualitative, we were able to appeal to the values of PRiS as an organization, while respecting the anecdotal narratives that we share. Florczak (2015), said that this approach draws conclusions from both types of data although there is a certain affinity for quantitative methods in that a researcher quantifies qualitative data in some manner (p. 279). I quantified some of the qualified data in this inquiry but made sure to include direct qualitative quotations to try to preserve the essence of what the participant reported.

Action research. This inquiry partly followed the model laid out by Coughlan and Coghlan (2002, p. 230). This model is composed of multiple cycles of action research inquiry that break down into six separate steps. The first step is data gathering, which moves to data feedback, then data analysis. Once we analyzed the data, the research collaborators planned and

implemented an intervention. They then evaluated the success of the intervention which moved to a new cycle that begins with data gathering. See Appendix B for a diagram of this model. I had originally planned to write the thesis between the planning and implementation of the interventions, but the stakeholders requested to develop interventions using design thinking before I had even completed writing and making suggestions. I liked this model for its simplicity and ease of application. This model also pairs well with the iterative approaches of design thinking and variety of methods allowed through pragmatic action research. As previously mentioned, this may also form a meta-intervention and incorporating iterative action research cycles within PRiS is a sub-question of this inquiry.

Project Participants – The Entire System in the Room

As PRiS is a small organization, this inquiry endeavoured to include the entire system. As such, I included every stakeholder possible as a project participant in some manner. As the scope of the project centered around organizational design and strategy, I invited the entire staff, board of directors, and membership to participate as project participants. This included eight staff, seven directors, and 1,600 members. I chose this grouping of participants because of its importance for the project. PRiS has never, in its 25-year history, surveyed its membership, or put all the staff and directors in the same room to discuss the organization. In fact, I think that the lack of systems sight between each organizational aspect has caused many of the issues that PRiS faces. Each system aspect seeks to self-optimize at the expense of other system aspects, effectively grinding our organization to stasis.

As the sizes of the participant groups varied so drastically, this inquiry collected data from them each in a different manner. We sent the 1,600 members of our society a survey to assess their internet habits. To encourage a higher response rate, we made the survey mostly

closed-ended as I considered less than 50 responses to be too small of a sample size. The other methods, mainly the design thinking workshop and anonymous board and staff surveys each required a high level of response and participation. Having high participation in the design thinking workshop was mandatory as too few participants would have meant that we weren't able to gather as much data, and that the few participants participating may have been able to skew the data. For the design thinking workshop, we needed at least eight participants, and got eleven.

The staff and board of directors' participation was of paramount importance because they are the ones who have the authority, ability, and the responsibility to implement the suggested interventions on this inquiry. Any sort of significant change that this inquiry suggests will be systematic. PRiS didn't need to optimize any one part of our system, the system needs to act in a coordinated effort to implement the suggestions. So, the board of directors may have the responsibility to implement suggested interventions, but the staff may have the capability. As a small team, our staff and board of directors will have to share the accountability for the interventions in this inquiry and the success of the PRiS system.

Data Collection Methods

The specific methods we used to conduct the inquiry are an electronic survey paired with a human centered design workshop.

Surveying stakeholders. Anonymous surveys formed a significant portion of the data collection methods for this inquiry. I did this for two separate reasons. The first was that it was the most feasible way to collect information from our 1,600 members, and second, it provided a vector for other stakeholders to provide anonymous information that they may not have wanted to provide face-to-face and helped alleviate any power differentials that existed. Surveying our

membership on their internet usage habits provided invaluable information on our market and who we are trying to provide services to. The survey to the membership consisted primarily of closed-ended questions to encourage higher response rate (Harrison, 2007, pg. 2). This is especially salient as respondents are more likely to skip open-ended questions (p. 2). However, certain questions had open-ended options. Another reality is that the time it would take to analyze potentially 1,600 open-ended survey responses was unfeasible. Also, I conducted the membership survey prior to the design thinking workshop because the data it provided was a jumping off point for the workshop. I gave the staff and board of directors an opportunity to fill out a survey of primarily open-ended questions before and after the design thinking workshop. The smaller numbers of these respondents made analyzing these surveys feasible and were an integral part of allowing honest feedback, given some of the power dynamics. See Appendix E for the anonymous staff and director survey and Appendix F the anonymous membership survey.

Human-oriented design as data collection. The second, and primary, method of collecting data was through conducting a human-oriented design thinking workshop. This method is a synthesis of unstructured group interviews, focus groups, creative methods, and surveys. I specifically chose to conduct the group-based portion of the inquiry in this manner due to its emergent nature. PRiS is a complex organization that straddles multiple different industries and that needs a multidisciplinary approach. The emergent nature of this method allowed space for participants to exchange ideas and build on the thoughts of others, a strength of focus group methods (Saldana & Omasta, 2018, p. 93). Each participant brought their expertise and lived experience, and this provided rich data because participants, and I were then able to access the larger pool of meaning available to groups (Senge, 2006, p. 223). For example, the first question I asked for the design thinking workshop was, “what are we here to design?” What followed was

a facilitated discussion where the collective processed and synthesized the membership survey results with their shared experiences and then decided what they wanted to spend the rest of the day designing. According to Saldana and Omasta (2018), group methods are also an excellent way to observe group dynamics (p. 93). Which was particularly salient as this is the first time the board of directors and staff had significant interactions as a group, although observing group dynamics wasn't a specific goal of this inquiry. Additionally, the design thinking exercises I chose also created a range of artefacts which I analyzed. This included workshops, flipcharts, and even post-it notes. This allowed the quieter participants to participate and write their own ideas while others spoke, but still allowed the space for the collective exploration of the questions. Although I did not record or transcribe the exact conversations, the facilitator [the authour] and project partner kept detailed field notes on pertinent points of the conversation. This, in combination with the artefacts provided substantial data and information for the inquiry.

Study Conduct

Initial survey conduct. We conducted this inquiry in a way that allowed each successive step to build on the prior one. The initial step consisted of sending the membership survey to our 1,600 members. These were individuals, families, or businesses who subscribe to our internet or email services. I designed the survey to run for ten days and to allow the participants to self report on their internet usage habits. Survey Monkey hosted this survey and I emailed a link to the 1,600 members of PRiS. See Appendix F for the membership survey preamble and the survey questions sent to the members. I collected, analyzed, and anonymized the results for presentation during the design thinking workshop.

Human-oriented design thinking workshop conduct. Once I collected and analyzed, I conducted a seven-hour Human Oriented Design Thinking workshop. See Appendix G for the

research information and invitation letters. I sent the invitation letters electronically with the participants contacting me if they wanted to participate. The initial stage of the design thinking workshop consisted of sharing the survey findings with the participants. Participants included seven staff and four board members. This was the first large scale survey of the membership and was integral to help us understand the demands of our members and the market. The human-oriented design thinking workshop formed the core data gathering event of this inquiry. The human centered design workshops worked through the first two stages of IDEO's (2015) three-stage process. I designed the first two stages: inspiration and ideation, around understanding the issue and then generating ideas to solve it (p. 11).

During the inspiration phase of the workshop we engaged in the activities, Framing Our Design (p. 31), and then, using survey information, Define Our Audience (p. 44). Framing Our Design was an activity that engaged the group to take a stab at verbalizing and defining what we got together to design. This was done through giving each member a worksheet where they first wrote their ideas on what we should design together. Once done, I invited them to share it with the group. I then facilitated a conversation where everyone's response was discussed and the group voted to decide on what they were designing. Next, we did the activity Defining Our Audience, this was an activity centered around determining who were the people we were designing for. For this activity everyone got Post-it notes upon which they wrote groups of people who we needed to consider when we designed the project. For example, many people wrote "members" on their posted notes. I chose these activities because they are collaborative in nature and helped the team understand and frame the issues we are endeavouring to solve in a group setting. See Appendix I and Appendix J for the staff and board of director's research consent forms respectively.

The next stage of the human centered design process we enacted for this project was the Ideation phase. During this phase the team gathered and engaged in a range of activities designed to foster creative solutions to the challenges we are facing. The activities I chose were: Finding Themes (p. 80), Top Five (p. 79), How Might We (p. 85) and Brainstorming (p. 94). Finding Themes was an activity where participants worked collaboratively to find themes in the data, in this case, we sought to theme the audience from the exercise Define Our Audience (p. 44). Participants placed their posted notes on a whiteboard and then looked for similarities between them and discussed how they could group them together. Meanwhile I facilitated the discussion on how to group these themes and ensured that the conversation flowed and that a consensus could be reached. After we defined our audience we then did the activity Top Five. We used this activity to group the notes with audience names on them into the top five most pertinent themes. This was determined by the participants through a consensus.

Once this was done, we began to create ideas through the How Might We (p. 85) and Brainstorming (p. 94) exercises that challenged participants to come up and collaborate with ideas to solve our design challenge. For the How Might We activity each participant was given a worksheet that had writing prompts on them. Each prompt started with the phrase, how might we. Participants were asked to phrase our challenge using this prompt. I then invited participants to share their writings in a facilitated discussion. Once we completed this activity, we did the Brainstorming activity to come up with solutions to the questions we created in the How Might We exercise. This was done through a facilitated discussion and focus group. Ideas were written down and record by myself and the project partner in our field notes. I then collected, analyzed and anonymized these notes and the ensuing artefacts to generate the data from which I drew my recommendations. See Appendix H for the Design Thinking Agenda.

The third and final phase. By the time the workshop concluded, the stakeholders were so engaged with the event that they requested deliverables and to plan the next steps immediately, prior to me suggesting any implementations. After confirming with my thesis advisor that we could, we planned and conducted another human oriented design thinking workshop to work through the final phase of the three-stage process: implementation (IDEO, 2015, p. 11). The specific implementation workshop activities are beyond the scope of this thesis, but this formed the dissemination activity for the thesis. All the participants returned to design the implementations and changes. They collectively designed, determined, and prioritized the intervention strategies and next steps for this project. This also formed a novel approach to ensuring that the project stakeholders took ownership of the recommendations. Through designing and prioritizing collectively, stakeholders bought into the change processes, because they were their ideas. This also had the added benefit of ensuring that we considered the entire PRiS system in any designed implementations, and everyone could see how they played a part in the larger scheme. Additionally, the simple act of prioritizing together ensured that everyone is aware of everyone else's deliverables, which created a level of social accountability.

Data Analysis and Validity

The data analyzed for this inquiry primarily consisted of the analyzing of text artefacts generated during the design thinking workshop and the anonymous surveys. I analyzed these artefacts using content analysis. Saldana and Omasta (2018) explained content analysis to be the process of systematically analyzing media to pull out their topics, themes, ideas and feelings through a qualitative analysis process (p. 153). Following the qualitative analysis, one then quantifies the various qualitative data points assessing their frequency, type, and even absence (p. 153). For this inquiry, I then analyzed, coded, categorized, themed, and quantified the

qualitative data. Coding is the process of condensing long portions of text data into "rich essences" (p. 262). For example, I coded a participant's response discussing the challenges of PRiS in travelling from one location to another into the singular noun of geography. Once I coded the data, I then grouped the codes into larger categories based on the patterns emerging in the coded information (p. 263). I then used these categories to create longer themes that captured the essence or essential narrative of the data (p. 263). I quantified the themes, codes, and categories, not to rank them in importance, but merely to show the frequency with which the participants mentioned the terms in the data.

As an example of this process, question five of the membership survey asked respondents why they chose PRiS as their internet service provider and provided an option to write in a response that they did not find on the multiple-choice section. I coded, categorized, themed, and quantified these written-in responses to look for emerging patterns. Interestingly, in this example, the most recurring finding to emerge was that our members primarily chose PRiS as their internet service provider because no other alternative provider exists in their location. The codes used here were: *lack of choice, limited options, only one etc*. I termed the larger category *no competition* and the theme emerging from this, and other categories was that many people choose PRiS because they have no other option. See Appendix K for examples of the data analyzing process used for this inquiry.

Trustworthiness, reflections, and checking-in. Lincoln and Guba (as cited in Saldana & Omasta, 2018) found that quantitative concepts like validity are not broadly applicable to qualitative inquiries (p. 271). As such, they redefined the concept of academic rigour for qualitative studies to include concepts like trustworthiness, credibility, and confirmability (p. 271). I designed these concepts around ensuring a researcher mitigate their bias, but in ways that

differ from traditional validity. To reach these standards of authenticity and trustworthiness in my data analysis and inquiry findings I mitigated by bias through reflexive journaling and anonymous participant data checking. I used self-reflexive journaling, the process of a researcher turning their thoughts inwards to the feelings, thoughts, meanings, and ideas they have during the inquiry (p. 50) throughout the inquiry process. Tracy (2010) noted that this is an effective way for researchers to assess their reaction to the data and their own effect on the research process (p. 842). This was also an effective tool to remind myself of the impact of my perceptions and opinions on the data. This was of significant use in checking my biases and reflecting on the data. One event comes to mind. When analyzing the data, one individual wrote that they felt that our organization wastes its money on frivolous spending and projects. As I have final say in purchase decisions, this felt like a personal insult and I had a visceral reaction to it. However, through reflective journaling I was able to work through my bias and realize that the individual may well be correct and that we should examine spending habits and processes.

Another way in which I ensured the authenticity of my data was through cross referencing my field notes. During the design thinking workshop portion of our inquiry I kept field notes during the entire event. I was not attempting to observe behaviour and merely sought to record rich moments of conversation and insights that emerged through the interactions of the participants. Additionally, one of our participants also kept detailed field notes during the event. With their permission, I was able to cross reference these moments with the field notes taken by the participant. I presented only those moments that appeared in both versions of field notes in this thesis.

A final, and participant focused method of ensuring trustworthiness, was an anonymous participant check-in sent to the inquiry participants once I analyzed, coded, categorized, and

themed the data. Tracy (2010), cognizant that interpretations of data and events may differ among individuals, called taking the data back to the participants, member reflections (p. 844). Researchers do this so that individuals who provided data can check and see if they can recognize the findings as true or authentic to the information they provided (p. 844). This participatory approach ensures that researchers treat participant information accurately and with respect. I did this in our inquiry through providing the opportunity to participants to provide feedback to the authour through completing an anonymous on-line survey. Participants completed this survey using the Survey Monkey platform. See Appendix L for the member reflection survey.

Ethical Implications

This inquiry had significant ethical issues that I addressed. As I put the entire system in the same room, issues arose with some inquiry participants having power over others. This created issues with the inquiry around the Tri-Council Policy Statement's (Canadian Institutes of Health Research, Natural Sciences and Engineering Research Council of Canada, & Social Sciences and Humanities Research Council of Canada, 2014) core principle of respect for persons. One of the core tenets of respect for persons is that they have autonomy of decisions (p. 6). As such, research participants should be able to choose their level of involvement with the inquiry free from interference (p. 6). The power that I and my board of directors had over my organization's staff created an issue around whether the staff were freely choosing to participate without feeling coerced or fearing retribution. To resolve this issue, project involvement was entirely voluntary. The staff were free to choose their level of involvement and I allowed them to take the day off work, with pay, if they chose not to attend.

Most significantly, as the leader of my organization, and as the primary decision maker I held significant power over participants and this had the potential to affect how participants responded. Due to my position, there was the possibility that participants may have filtered their responses during the surveys, design thinking workshop and even the anonymous feedback options. Traditional concepts of power would suggest that participants may have filtered their responses because of a fear of retribution due to my higher organizational standing, but I think there may also have been the chance that participants filtered their responses through affection for myself. They may have not wanted to damage the inquiry or may reputational standing by being seen as too difficult or may have been agreeable because they wished the best for me. This opens up interesting questions regarding bias responses caused by both power-over-others and affection-over-others. This is something that an outside researcher would hypothetically be free of. Participants may not fear the outside researchers power over them, because none exists, and they may have little or no affection towards the individual. As mentioned, I worked to mitigate these potential issues through the addition of anonymous surveys that participants could fill out so they could report whatever they liked, free of my power over them or their affection for me.

There were also potential interpersonal issues between board members and staff that could have created potential problems around retribution. The Tri-Council Policy Statement's second main consideration when conducting research involving humans is concern for their welfare (p. 7). I worried that during the workshop portion of the project the free and open discussion would have devolved into blame laying or interpersonal conflict. Thankfully, this didn't come to pass. I addressed this by having anyone with any perceived power signing a different consent to participate form that had a clause expressing that there is to be no retribution enacted on project participants. I also worried that staff and board members may have felt social

pressure during the design thinking workshop that stopped them from providing information. To alleviate this risk, I offered everyone participating, and those that chose not to, an opportunity to fill out an anonymous survey where they could share things they may not have wanted to share publicly.

In the context within which I conducted research, the Tri-Council considerations around justice towards participants is related to the power imbalances that exist within my organization. The council views power imbalances between individuals and groups as a threat to justice (p. 9). There are two main power imbalances that I addressed. The first is the formal power imbalances that exist between individuals and groups and is something I previously discussed. The second, is in the power that I have as a researcher over the participants. Although action research is participatory, I have a better understanding of the research methods and underlying academic resources. I mitigated this by keeping a reflective journal and educating my co-researchers as much as possible on the academic foundations of this project.

Chapter Four: Inquiry Project Findings and Conclusions

This inquiry sought to answer the following questions and sub-questions: "What do we need to change in our organization so that we can respond to market demands quickly and efficiently?"

a) "Can we inculcate an inquiry research process into the operations of the organization?"
b) "How can we become a learning organization?"
c) "How can we better design a process so that we can listen to the needs of our customers and community better?"
d) "How could (or might) the Peace Region Internet Society better serve community needs for connectivity?"

Four key findings emerged from the data from which I drew conclusions and from which I generated a list of recommendations and suggestions. These findings were:

1. Members value price, speed and a local business.
2. Communication among all stakeholders is an issue.
3. Confusion around our mission.
4. Financial concerns.

Finding 1: Members Value Price, Speed and a Local Business

The first finding to emerge from the surveys and design thinking workshop was that the members of our society value the speed and price of their internet over other value-adds like customer service and that PRiS our non-profit status. Additionally, they admitted to having a voracious appetite for bandwidth with the vast majority demanding services that operate as fast as possible. These findings emerged most drastically in the survey that I sent out to all our members. Our survey had 101 respondents. However, some respondents skipped certain

questions. It is important to note that respondents were free to choose more than a single answer on these questions.

Table 1: Member Survey Results, Member Demands

Question 4: What is Most Important to You [Member] in an ISP

Low Prices	Fast Speeds	Large Data Packages	Unlimited Data	Variety of Services	Customer Service	Short Wait Times	Other
75	77	19	42	6	44	11	6
75%	77%	19%	42%	6%	44%	11%	6%

Note. N=100. Other responses: 5 cited reliability and 1 cited loyalty to PRiS.

Table 1 collects the information from the member survey asking them what they valued in an internet service provider. As one can see our current members most highly valued speeds followed closely by prices. However, this one table doesn't tell the whole story. I also asked members why they chose PRiS as their ISP in a following question. The responses to this question almost seem to contradict the results of the prior question. But when I analyzed lead to a much more nuanced understanding of how our members chose PRiS as their ISP. As presented in Table 2, members referenced three important factors as to why they chose PRiS as their ISP. The first was that members chose PRiS because we are completely local to the Peace Region of Canada. Secondly members referenced our prices as being a draw to choosing PRiS. And finally, and in the authors opinion most concerning, 29 respondents took the time to write in their own responses saying that they chose PRiS because it was the only option available to them. A typical written-in response consisted of, "Only one we could get out of town," and, "limited rural

options." There seems to be two situations at play, Table 1 shows the results of us asking about preferences while Table 2 shows the results of us asking how they made real-world decisions. Of interesting note, and one that challenged PRiS assumptions, was that fewer members than we thought chose us because we are a non-profit. These two questions have given us a more nuanced understanding of our members and what motivates their decision making. Namely, that they desire an ISP to offer good prices and decent speeds, but they also care deeply about us being local and some may have had no other choice.

Table 2: Member Survey Results, Reasons for Choice

Question 5: Why Did You [Member] Choose PRiS as Your ISP?

Price	Customer Service	Local Business	Non-Profit Status	Fast Speeds	Other
39	15	53	21	10	29
39%	15%	53%	21%	10%	29%

Note. N=100. 29 of the 'Other' responses were respondents responding that they chose PRiS because it was their only available option, 1 cited it being too difficult to change, and 1 other didn't remember.

The desires of our members for bandwidth surprised us at PRiS and adds more understanding to the desires of our members. We can understand bandwidth with three main concepts: download, upload and mbps. Download refers to the amount of data a given device can pull down from the internet, while upload refers to the amount of data a device can push up to and through the internet to another device. Network managers measure this by the amount of data a given connection can transmit per second. PRiS measures speed in mbps. This stands for megabits per second. Mb meanwhile stands for megabyte. One byte is eight bits of information.

To help visualize speed, downloading a movie that's 700Mb will take a 25mbps connection around four minutes. I asked members what speeds they felt were acceptable. As shown in Table 3 respondents overwhelmingly declared that they wanted their internet to be as fast as possible. Like much of this inquiry, the results were surprising and challenged many assumptions that PRiS as an organization made about the service levels desired by our members.

Table 3: Member Survey Results, Speeds

Question 8 & 9: What download/upload speeds do you consider acceptable?

Speeds	Download N= 95	Upload N= 97
1.5 mbps	3	6
5 mbps	10	13
7.5 mbps	-	4
10 mbps	12	10
25 mbps	13	8
50 mbps	5	-
As fast as possible	61	63

Surveying the membership provided PRiS and this inquiry with significant data. This data allowed us to gain a more nuanced understanding of the desires, demands and values of our members. These findings also formed the foundation of the design thinking workshop. Through this survey we gained a more nuanced understanding of our member. We discovered that they demand blisteringly fast internet, care deeply about PRiS' local roots, have limited options for providers, and want prices to be kept as reasonable as possible.

Finding Two: Communication Among All Stakeholders is an Issue

The second finding to emerge was how integral the collective at PRiS views inter-stakeholder communication. As previously mentioned, after we surveyed our members, we conducted a design thinking workshop where we endeavoured to answer the question, "What do we need to change in our organization so that we can respond to market demands quickly and efficiently?" In practice this formed the foundation of a day long event where findings emerged, and the collective determined how to proceed. The collective will of the staff and board members determined that what we needed was to design a strategic planning process. This is because PRiS doesn't have a long-term strategy and the collective thought that this was an effective way to move forward. The participants then worked through a range of design thinking exercises to design this process.

Audience members. One of the key findings to emerge when the collective worked at designing a strategic thinking process was the importance of communication between all stakeholder. Define Our Audience (IDEO, 2015, p. 44) was one of the exercises we performed. During this exercise the group decides on who they are designing for. Here we initially saw the foundations of this finding. The participants determined that to determine a workable strategy we needed to design a process that considered as many stakeholders as possible. Participants did this by writing down who we needed to include on Post-it notes. They then grouped them themselves. Table 4 shows how the collective grouped the stakeholders of PRiS. The participants determined that to design an effective strategy we would have to consider all these groups.

Table 4: Design Audience

Audience Groupings for Strategic Planning Process

Board	Staff	Members	Potential Members	Industry
10	13	11	10	3
21%	28%	23%	21%	6%

Note. N=47.

This inevitably led into a discussion on how we can communicate effective with all the stakeholders to gather enough information and feedback to make an informed strategy. I saw this especially in the exercise, "How Might We" (IDEO, 2015, pg. 85). During this exercise participants attempt to phrase their challenge as a design question. Participant one phrased their question, "How might we ensure members have a process to provide input towards…direction of the society?" Additionally, participant two asked, "how might we connect the board and PRiS staff?" Participant three asked, "How might we bridge the gap between all five groups?" And finally, participant four asked "How might we engage the community to understand their needs?" On the later anonymous post-design thinking workshop survey one participant asked that we, "encourage communication between the staff and board, with nothing hidden." These findings, a few examples of many, show that inquiry participants think that addressing communication is a primary concern for developing feedback and communication loops so that we can gather information to inform any strategic decision.

Jargon-less positivity. Another large factor in developing communication emerged around discussion involving language. Some participants felt that highly technical jargon created

a barrier to communicating effectively. One participant even requested that technicians, “Dumb it down,” when referring to technicians briefing other stakeholders on technical matters. Participants suggested that the staff of PRiS train the board on the technical aspects of PRiS so that they can better understand the business. Other participants soundly rejected the term training, but later accepted the term educating. Manner of communications even extended to the how staff communicate information, with participants mentioning that sometimes they feel overwhelmed with negative information and would like some positive news.

Traditional ways are failing. One of the sub-findings regarding communication was there was also a considered dissatisfaction with how the system of PRiS has traditionally communicated with internal and external stakeholders. There has traditionally been little interaction amongst stakeholder groups in PRiS, and what was usually relied on email or person to person communication. There was a consensus that this had to change. This extends to the methods we have been using to communicate and even who communicates with who. One participant sought to answer, “how might we move to a different tool that increases communication…in a way that works for all?” During further discussion, we even challenged the assumption that the chief operating officer (the authour) be the only one to communicate directly with the board. This opened a brainstorming session where participants sought to come up with different platforms and methods, we could use to foster more communication between all the stakeholders. I collected these in Table 5. These were ideas and platforms that participants could use to communicate with all stakeholders, including members, staff, board, and the larger community.

Table 5: New Tools

Results of Brainstorming Communicating Tools

Slack	SMS Alerts	Facebook Live
What's App	Mattermost	Google Docs
Bluejeans	Drop Box	BBQ
Dinner	LeadISP	Design Thinking Workshop

Note. LeadISP is a billing and network management service that has functionality that allows us to communicate with members.

Finding Three: Confusion Around Our Mission

One of the most significant findings that emerged from this inquiry was the range of interpretations on what the mission of PRiS is. As per the constitution of PRiS the founders found PRiS to establish a public internet node and provide internet to its members ("Society Structure," 2019). Participants have recently interpreted this mission as, as a participant said during the design thinking workshop, "to serve the unserved." There was little common ground among the group on how exactly, serving the unserved plays out in a world with satellite internet where everyone can get service on some level. During one of the Brainstorming exercises (IDEO, 2015, pg. 94) I began with the question, "Why is PRiS?" The goal was to foment a discussion where we could explore what PRiS, a BC registered non-profit, is working towards in a world where telecommunication companies serve everyone in some way.

The brainstorming sessions around our mission showed that almost everyone had different interpretations and understanding of the mission of our non-profit. As mentioned, one participant said our mission was to "serve the unserved." Meanwhile, another participant said that we are here to "keep the big guys honest" through acting as competition in our region. One

participant, potentially taking a que from the membership survey, said that the why of PRiS is to be local. While another participant wondered if we had experienced mission creep and were no longer fulfilling our mission or if our mission had changed. This exercise even moved on to include dialogue around what it means to provide internet to our members. Our membership survey shows that our members use the internet for a vast range of activities. I collected these responses in Table 6. These results led to a discussion on how the definition of the internet has expanded and how we may need to bring new services to our members. Participants suggest offering IT services to local small businesses, VoIP services, IPTV, security, end-to-end support, and PC repair. A participant even suggested that we change the 'I' in PRiS from internet to information.

Table 6: Internet Uses

Question 10: What do you use the internet for?

Service	Responses	Percentage
Video Streaming	60	59
Web Browsing	87	86
Social Media	66	65
Video Games	22	22
Business	66	65
Video Conferencing	25	25
VoIP	8	8
IPTV	1	1
IoT	9	9
Security	8	8
Other	14	14

Note: N = 101. Other responses included email, online banking and current events.

Finding Four: Financial Concerns

The fourth and final finding is that the participants of the design thinking workshop expressed concerns around the financial state and operations of PRiS. This presented in to distinct ways. The first is the belief that PRiS as an organization is inefficiently

spending its money. The second belief that participants shared, was that because of how we constructed our network and because of how we structure our policies our network is far to expensive to maintain.

As mentioned, the first belief was that PRiS as an organization is inefficiently spending money. One participant extolled PRiS staff to "work smarter, not harder." Additionally, one response on the anonymous post-design thinking workshop requested that "accounts payable be consulted for all purchase decisions." Some participants even responded during the anonymous survey's that they felt that PRiS had to many staff and that we should conduct lay-offs. I also saw this when discussing how we should meet the needs of members. For example, one participant wrote, "how might we ensure that PRiS meets the needs of members without over-kill or over-sight." The participant defined over-kill as excessive spending and over-sight as cutting services to those with no other options. Further, when I asked participants to frame our design challenge, ten of the eleven responses contained some mention of financial concerns, increasing revenue, or budgeting.

Concurrently, the other sub-finding in this section was that some participants believe that the network and organization as it is set up, is to expensive to maintain and operate. I saw this most drastically, in the design thinking workshop when I asked participants to frame some challenges we needed to overcome as part of our design. The largest concern participants raised was that the cost to provide our services in the traditional way is too high. One of the largest reasons that participants pointed out for this high cost was the geography of the Peace Region and the size of out network. A participant even mentioned that the "technical load is crippling in time," when specifically mentioning supporting email. Meanwhile, a second participant mentioned on the anonymous post-design thinking workshop survey that travel time to job sites

is a major expense. And yet another participant related that we experienced significant expenses and difficulties because of "travel time, weather, daylight, and member schedules." All these things increase the difficulty and cost of providing services to our members. For example, if a technician can only do two field visits a day because of short day cycles, we need to pay to send the technician out more often. Finally, a participant mentioned the "size of the network" as a significant expense. This could be referring to the physical size of the network, or even to the amount of equipment on the network we need to maintain. We have over 115 sites scattered throughout the Peace Region that require ongoing maintenance. As stated, financial concerns form a significant theme throughout the data collection of this inquiry. I broke these down into either a belief of uncontrolled spending or the cost of providing services being to high.

Study Conclusions

The initial, and most important question my inquiry sought to answer was, "What do we need to change in our organization so that we can respond to market demands quickly and efficiently?" As previously mentioned PRiS has struggled to remain relevant to the market in the Peace Region of Canada and as such we have lost membership. This decline in membership has resulted in a significant loss of revenue and cash reserves. This situation developed because we have lost touch with our community and what they demanded of us. Members have migrated to competing services that provide the speeds and services they want. I designed the inquiry question to inquire into how we can reorient PRiS back to serving the needs of our members so we can grow our revenue and continue fulfilling our mission in the long term. I hypothesized that the sub-questions could be solutions to the initial inquiry question, and all support the end goal of searching for changes within PRiS that will allow us to respond to the demands of the telecommunications market.

The conclusions I drew from the findings all point towards the organization becoming more flexible, accessing information to develop a strategy and building processes and mindsets meant to help us learn and adapt. The first conclusion I found was that if we want to become a learning organization, we will need to change how we do things and adopt new policies. The biggest one of these is that we will need to create a shared vision across the organization. The second conclusion, and one related to becoming a learning organization, is that we need to create process that allows stakeholders to share information across the organization so that everyone can make well informed decisions. Regarding innovation and adaption, I concluded that whatever process we adopt to innovate and change, we will need to ensure that the cost for innovation remains extremely low. Finally, the fourth conclusion is that we need a flexible strategy. This would draw on the policies and ideas that flow from the first three conclusions. Workshop participants identified that we needed a strategy for PRiS. However, we also identified that we need to innovate and change. As such, this conclusion marries both these ideas so that we can develop a strategy that is a flexible, changeable and adaptive to the world. These conclusions all point to PRiS adopting practices that allow us to become a learning organization.

Conclusion 1: Becoming a learning organization needs some work. As mentioned in Chapter 1, one of the sub-questions for this inquiry is asking the question, “How can we become a learning organization?” Becoming a learning organization may be a way that we can change PRiS so we can adapt to market demands. Using Senge’s (2006) learning organizations concept that I introduced in Chapter 2, there are three key areas where PRiS needs to improve before it can start to reap the benefits of being a learning organization: shared vision, team learning, and mental models.

Sub-conclusion a): Shared vision. This is the most astounding conclusion to the authour. PRiS, as an organization, has no clear consistent idea of what it is. As discussed in Chapter 2, a shared vision involves the entire organization, or a large part of it, having a clear picture of the future state of the organization. This is important as it allows for the development of flexible adaptive strategies and as a guide for the individual actions. The data showed that there was no clear picture or idea of the vision of PRiS. A few participants remarked that we are here to be "local", "serve the unserved," or "keep the big guys honest." But this leads to further questions, how do we be local, what services do we serve to our community, and how do we keep the big guys honest? If PRiS doesn't have a clear vision of the future, we will passively react to the world, rather than actively creating the organization we want. This is especially important considering how the participants of the design thinking workshop decided that they wanted to design a strategic planning process to ensure we have a strategy that is suitable for market demands. But without a vision, we have no idea where the strategy needs to point. The first thing we should do as part of this process is develop a shared vision as a team as it gives us a destination to aim for.

Sub-conclusion b): Team learning. As presented in Chapter 2, team learning is a broad term that denotes how teams within an organization can learn together and then how this supports the development into a learning organization. One of the requirements for team learning is that a team be able to dialogue and communicate. Right now, we struggle to do so. These communication issues extend between all the stakeholders, whether it be staff to the board, the board to staff, PRiS to its members, PRiS to its vendors, or staff to staff. The biggest effect of this, is that the board of directors, who are liable for decisions, had little official contact with the members who voice their demands and service needs. Staff hear these demands and service

needs, but there exists no structural process to present member demands to the board of directors, except an annual general meeting the members don't attend.

We reify this situation by how we define ourselves within the organization. The data showed that we sub-divide PRiS into three distinct stakeholders: staff, board, and members. With staff further dividing into the technical team and administrative team. There are implicit rules around who communicates with whom and what stakeholders' information is stakeholders communicate to one another. This has the result that information doesn't get to where it needs to go. This inquiry even reinforced this result through discussing PRiS in these exact terms. Becoming a learning organization will be unreachable if we lock down meanings and information that flows between groups and how we conceptualize ourselves in the PRiS system. It could be that PRiS needs to re-think how we conceptualize ourselves and how we relate to one another.

Sub-conclusion c): Mental models. Senge (2006) defined mental models as the collections of assumptions and beliefs that we have that then drive behaviour and determine how we act (p. 164). I think that this can extend beyond the individual and an organization can have shared mental models that determine its course of action. The data show that PRiS is holding mental models that are non-congruent with the real world. This is most noticeable in two areas of the data. The first area that shows our flawed mental models are the results of our service questions on the membership survey. The vast majority of members responded that the speeds they want to see are above the speeds offered at the time of the survey. Eight six percent of participants pointed to download speeds faster than standard speeds and 94% pointed to upload speeds faster than our standard speeds. The mental model's existent at PRiS held us back from

seeing this reality as we believed that the speeds we were offering our members were suitable. Meanwhile, their habits evolved, and we failed to take notice.

The other area where we see these mental models form a conceptual block is in what exactly it means to be an internet service provider in 2019. PRiS originally offered three services: internet, email, and web hosting. PRiS now hosts only a handful of sites because cheaper and better services already exist (e.g. Wix, Square Space). However, our competition offers a vast array of different services that we don't. Managed WiFi, IPTV, VoIP, security, and cloud storage are a few of the services that our competition offers. The data showed that our members use the internet for a vast array of activities. Yet our constitution and our business plan only account for email and internet. We are undiversified and being out competed because our mental models tie us to a narrow definition of what we can be. This is where the Panarchical model mentioned in Chapter 2 can form a conceptual metaphor. PRiS is at the top of the Panarchical cycle; we are a mature organization in need of a renaissance. But before that renaissance we need to practice creative destruction to let go of the ways we used to do things and the mental models we hold so we can create the space needed for invention. This extends to the services we offer, how we conceptualize ourselves as an organization, our shared vision, and even how we design our network to provide services to individuals.

Conclusion 2: We need processes to share information. This conclusion is related to the previous conclusion regarding team learning. As an organization, we cannot adapt to market changes if decision makers do not have the information they need to make decisions. PRiS as an organization needs to shift its conception on how it relates to and communicates with its members and stakeholders. At root, PRiS exists to serve its members. Yet we have little in the way of structure or policy in place to communicate with the members, other than a lightly

attended annual general meeting once a year. The data show the members have been clamouring for faster speeds, improved services, and different services yet we have often failed to hear them and haven't developed the services they want. On top of that, all the stakeholders of PRiS have important insights that we can access to build a more comprehensive view of PRiS and our organizational needs, which can help guide our organizational direction. The process we develop for gathering information from stakeholders is crucial for responding to market changes, developing a learning organization, conducting action research, and meeting the digital needs of our community.

Responding to market changes, learning, researching, and meeting the needs of our community all have one thing in common: information. As presented in Chapter 2, single, double, and even triple-loop learning (Torlak, 2004, p. 97) are important perspectives we should be integrating into our business, especially as we are a community focused non-profit. Each of these inceptual loops require that we have some understanding of what our members want and what our stakeholders have to say. However, it is not enough that a few key people know the needs of our members, but that everyone knows the needs of our members. The survey conducted through this inquiry was a good first step, but PRiS needs a more concrete repeatable process to ensure that we know the needs of our members. This could extend beyond surveys to workshops, interviews, or other novel ways of getting this information. Once we gather this information, we need a better dissemination process so that everyone can access and understand the information. Clearly, the discussions on how stakeholders can communicate better have the underlying concern that information is not getting where it needs to go.

Conclusion 3: Budgetary concerns require low cost innovation. This conclusion synthesizes two results from the data, specifically the financial concerns and member demands

for services. All the participants reported that they were concerned with the financial state of PRiS. These were concerns around expenditures (spending too much) and improving the revenue of PRiS. This begs the question on how we can increase revenue through meeting the demands of members for faster speeds, which require new expensive technology, keeping costs reasonable, and allowing us to have the flexibility to respond to complexity. The budgetary concerns also restrain the vision we want to create. We may desire that we bring fiber connectivity to every resident in the Peace Region, but the cost is far beyond what PRiS can afford. This relates significantly to the initial inquiry question on what we can change at PRiS. As such, we need a process, practice, or perspective in place that allows PRiS to expand, innovate, or refine its services while also ensuring they are fiscally reasonable. Additionally, we need to ensure PRiS has room to adapt to changes we see in the market.

Conclusion 4: We need a flexible strategy. As workshop participants themselves decided that we needed to design a strategic planning process, it seems reasonable to conclude that in the end, we need a strategy to move forward and a process that we can continually fall back on to refine and design the strategy when the market changes. The data show that the market has evolved past PRiS and the original reasons why residents of the Peace Region founded it. It is reasonable to conclude that the market will continue to evolve, so if we don't change PRiS to suit the current reality we face the danger of irrelevancy.

As such, PRiS should integrate much of what we learned during this inquiry into generating a process that allows for the active creation of a flexible strategy. This allows us to probe and respond to emergent complexity, creatively destruct the ideas that fail, adapt to new member demands, and most importantly continually learn and improve. Stagnation is anathema to the technological industry and PRiS can no longer afford to not change. Concepts introduced

in Chapter 2, like equifinality, panarchy, and systems archetypes become doubly important with this conclusion. The panarchy model and creative destruction support the idea of a strategy that changes, evolves, and let's go of past strategies that aren't working. Meanwhile, equifinality holds that there are multiple paths we may take to get to our final vision, and it is important to let the path emerge as we probe the complex system. And finally, PRiS can use the systems archetypes to understand the phenomena and patterns that are emerging from probing the complex system. We can then use these concepts to develop adaptive strategies.

Bringing it all together. As mentioned, the inquiry questions for this thesis are all structured around how PRiS can change to make it more adaptive to the market. The research data show that we are going to need to integrate each of these conclusions into a wholistic approach. For example, to develop a good strategy we need to become a learning organization to be more adaptable to what the market requires. But to become a learning organization we need to develop better inter-organization communication amongst all stakeholders, a shared vision, and work on our mental models. We can't address these singularly and instead need to address them as a whole. The conclusions drawn from the data may not be the most positive information, but it shows us the beginning of a path to how we can change PRiS to thrive into the future.

Scope and Limitations of the Inquiry

This inquiry just sought to solve a vexing problem within PRiS. Namely, how we change to respond to market demands more efficiently. We were not assessing the viability of concepts and how they may work, but instead assessing how concepts and ideas may work at PRiS. This means that any findings will mostly be suitable for PRiS. This was an inquiry in a small non-profit internet service provider that operates in a sparsely populated part of Canada. The findings

in this study are highly dependant on the context in which we find ourselves. This of course means any conclusions won't necessarily be applicable to other organizations or situations.

Project participation and the highly contextual nature of this inquiry limits its scope and applicability. First, PRiS provides internet services to over 1000 members, with an additional 600 that are members through their email accounts. We had 101 members respond to the member survey on their habits. This response rate represents only 6% of our total membership. This is higher than the handful of people that attend the annual general meeting, but still a very small participation rate. Any further work or research done by PRiS or with PRiS will need to work on ways to get the members to participate more for more information on the members.

A third limitation is that we never addressed any of the power dynamics apparent within the organization and how suitable they are or how we may change them. I avoided this topic for space reasons, as critical conversations around power can be challenging and long and because power relations did not come up in the findings. This may be an area for further inquiry within PRiS.

Chapter Five: Inquiry Implications

Study Recommendations

I designed this thesis with the express purpose of inquiring, "What do we need to change in our organization so that we can respond to market demands quickly and efficiently?" The inquiry also had the following sub-questions:

a) "Can we inculcate an inquiry research process into the operations of the organization?"

b) "How can we become a learning organization?"

c) "How can we better design a process so that we can listen to the needs of our customers and community better?"

d) "How could (or might) the Peace Region Internet Society better serve community needs for connectivity"

I formulated these questions for the purpose of researching and developing policies or processes in PRiS to allow it to survive. PRiS is in a challenging situation; revenue is down, membership is down, competition is fierce, and potential subscribers demand better services. In a world of monopolist telecommunication companies, Canada needs organizations like PRiS now more than ever. We provide alternatives, we keep prices down, we respect our communities, and we remember who we serve. Our survival is not just for the benefit of ourselves, but for our country. This dire situation requires drastic change at PRiS, but I am more than confident that the skilled and committed team will be able to turn this organization around using these recommendations. I have suggested each of these recommendations in chronological order.

Starting with Design. The first suggestions I recommended as part of a general organizational and systems approach for PRiS so that we can better respond to market changes is to adopt the tenets, practices, and values of design thinking: empathizing with the end-user,

toleration of failure, and experimentation (IDEO, 2015, p. 10). This is because of the remarkable energy I observed following the design thinking workshop that we conducted as part of this inquiry. I recommend that whenever we design a new policy, product, service, or procedure we hold a design meeting and design the idea. Cousins (2018) explained that in volatile, uncertain, complex, and ambiguous contexts design thinking is useful for the absorption of knowledge (p. 13). As mentioned previously, our organization needs as much knowledge and information as possible. We should begin with empathizing with our members and our larger community through continuing to survey them, study usage trends and patterns, or even conduct interviews. Soon we will have a database of member information that can guide future services and decisions. It is important to note that PRiS exists to serve its members and community; beginning our thought process with their needs is a natural first step. Next, we should experiment, prototype solutions, try them out in the real world, and then see how successful they are. I suggest that we trial this approach for the most recent upcoming service we are thinking of attempting on our network. In this case, managed WiFi or our new router rental policy.

Sharing vision, sharing success. The next group of recommendations follows a chronological order which I designed for the generation of an adaptive flexible strategy to help us learn in the face of complexity. This processual method for learning encompasses the main question of this inquiry, and the sub-questions as well. First, and I state this recommendation with unmitigated fervour and passion, *we need a shared vision.* If nothing else comes of this inquiry except a shared vision, this will be successful. The literature is clear on the power of shared visions. Organizations that conduct visionary strategic planning, who use a vision to guide their strategy, out perform those that don't (Kotter & Heskett, 1992, p. 11). To the best of my knowledge, PRiS has never had a shared vision for the organization. This comes as a surprise

to me as the organization is 25 years old. We should ask ourselves the question, "what do we want to create" (Senge, 2006, p. 192)? The particulars of the shared vision, as well as the ensuing values it shows, is almost immaterial. The most important piece of our vision is that we share it. The technicians, administrators, executives, and the board of directors should have a clear shared idea of where the organization is heading. Additionally, this will help alleviate financial and budgetary concerns because PRiS will guide its innovations and new services through this vision.

I recommend that PRiS as an entire organization conduct a visioning meeting as the first step following this inquiry. This includes getting information and feedback from the membership, staff and board of directors. I would recommend adhering to design thinking principles when conducting this workshop, specifically empathy (IDEO, 2015, p. 10). Mostly, we need to have empathy for our members and their situations. We need to open our ears to what they are saying they want, and never close them again. Additionally, during this process we need to adhere to the team learning principle around treating everyone as colleagues and seeking to explore situations through dialogue rather than the defending and attacking approach of discussion (Senge, 2006, p. 221). Finally, at this stage we will need to openly discuss our mental models on how we think of PRiS and what it means to provide internet to people in 2019 (p. 163). Once we agree upon our vision, we should disseminate the message on our web page, Facebook page, company letter head, company clothing, and other media. This will ensure that the vision of the organization is present, and everyone is aware of it.

Designing our strategic process: communication and teams. The second activity I am recommending, to follow the successful generation of a shared vision is for the PRiS organization to finish designing a strategic planning process. The result of this isn't the generation of a strategy, but the road map on how to make a flexible and responsive strategy that

the organization revisits and amends as we need. There two are important aspects to this recommendation. The first is how we learn and communicate as a team, and the second, how we account for complexity through flexibility. This is one of the reasons why in this inquiry's literature review I focused on emergence, flexibility, learning organizations, and action research; they will each play a part of this recommendation.

All for one, and one for all. First, we need to re-conceptualize how we approach our organization as a team. We divide ourselves, as shown through the design thinking audience definition activity, into discrete entities. Admittedly, I also reify this in organizational structure diagrams and communications. However, this needs to evolve. Conceptualizing and understanding ourselves to include every person within PRiS as a team member of PRiS is an important first step for addressing communication issues. Holding one another as colleagues is an important ingredient for us to be able to have the frank and open discussions needed to explore complex topics, like PRiS's future (Senge, 2006, p. 227). The first step for this is doing away with ineffective organizational structures that divide our team into technicians, administration, executives, and the board.

Concurrently, our process must include a mechanism for us to hear from our members and then communicate back to them. We can no longer afford to operate with deaf ears to our member's concerns. Allowing for equifinality, we can accomplish this in a few ways. This is not an exhaustive list, and the more important recommendation is shifting our perspective to wanting to hear from our members and creating spaces for that, rather than the specific details of how we do it. For example, we had an acceptable response rate for the membership survey conducted through this inquiry, so I would recommend surveying the membership on a bi-annual basis on information PRiS deems relevant for the generation of a strategy. However, there are other

methods we could employ: interviews, questionnaires during points of contact, phone surveys, or even workshops. Furthermore, we need to develop mechanisms for communicating information back to our members. Whether this information be our new strategy, new services, community programs, or anything PRiS does, we need to reach out to our members more frequently. With luck, this new two-way communication will encourage members to become more involved with PRiS, which just means we have better information to guide our strategy.

Panarchical complexity. Secondly, PRiS needs to account for complexity and change in its strategic planning process. Thankfully, this is where the power of action research and design thinking can support us. As discussed in Chapter two, design thinking is an iterative creative process that tests prototypes in a real world setting to test their effectiveness (Liedtka, 2018, p. 78); meanwhile cyclical action research as described by Coughlan and Coghlan (2002) and shown in Appendix B, uses "theoretically-informed-action and action-informed-theory" (Allen & Dovey, 2016, p. 16) to test policies or procedures, assess their effectiveness, use this assessment to refine the intervention, and then try again. I would recommend synthesizing these two approaches together in out strategic planning process in a way that encourages us to examine and assess our strategies as they unfold. As with many of these suggestions, the specific methods we use will be determined by the collective organization of PRiS.

This designerly action research modality for visionary strategic planning is a model for probing, sensing, and responding to the complex systems of the *Cynefin* model (Snowden & Boone, 2007). Meanwhile, conceptualizing our approach through the Panarchical model (Gotts, 2007) reinforces the idea that our strategy is experimental and a living approach. We can amend it as needed, pivot our organizational direction, or creatively destruct failing initiatives to create space for new innovations. As such, I am recommending that the strategic planning process

includes a bi-annual event where the PRiS organization meets to discuss and assess the effectiveness of the implemented strategy.

Action, action, action. Once the process for designing a living, flexible, and adaptive strategy is complete I recommend that PRiS put its process into use and design a strategy. This is an emergent recommendation as we still need to design the specific process, and the ensuing strategy. As these both affect the organization as a whole it is mandatory that it includes the organization as a whole. Information from the members must be present and the paid staff and volunteer board should all be involved as well. I reiterate the importance of re-conceptualizing how we understand ourselves and the importance of viewing everyone as part of the PRiS team.

Achtung! Designerly action research. This is an important step in ensuring the ongoing viability of this thesis' recommendations. I next suggest that we, as the entire PRiS organization, meet bi-annually to discuss and asses how the strategy is proceeding and to clarify and reaffirm our mission. These meetings will have two important themes. The first is that the meetings and outcomes follow the action research approach as laid out by Coughlan and Coghlan (2002) with clear deliverables that the PRiS team can enact and assess. These actions and their assessments will form the basis of the next bi-annual meeting where we discuss plan based on the findings from the first round.

Secondly, I recommend that we clarify our mission through following single, double, or triple loop learning (Torlak, 2004). We should begin clarifying our mission through a facilitated conversation on whether we are providing internet services well (single loop), then asking ourselves if providing internet how we currently do it is right (double loop), and finally we should question how we organize ourselves and how our power dynamic functions (triple loop).

With luck. It is my sincere hope that following this plan will allow PRiS to develop, and

continually refine a flexible and adaptive strategic plan. As I mentioned in Chapter Two and throughout this inquiry, PRiS exists as, and in, a complex system. Our organization straddles the technical telecommunications world, while branching into the non-profit sector, while also functioning as a traditional business, while also being at the mercy of market forces and government policy. This complexity requires us to adapt and remain flexible. As Snowden and Boone (2007) suggested, we should probe, sense, and respond to the emergent patterns in our complex system. This requires a mindset shift within PRiS. We cannot stop learning, probing, and adapting. We originally asked the question, "what do we need to change in our organization so that we can respond to market demands quickly and efficiently?" Well, the team at PRiS, as project participants have answered it. We need to design a strategic thinking process to encourage us to constantly learn and constantly adapt the needs and demands of our market.

Learning and adapting together. I wish I could say that my own brilliance led to these recommendations and solving the questions and sub-questions of this inquiry, but in truth, credit mostly belongs to the participants of this project. The idea for designing a strategic thinking process as a solution for the inquiry question came from the collected effort, ideas, and meanings that everyone who attended the design thinking workshop provided. It was participants who decided we needed a strategy to allow PRiS to respond to the market in a more efficient manner. It was participants who identified the need to improve communication, and it was participants who accepted the hard part of this inquiry in generating ideas and putting them into practice. It was the participants who showed me what we needed to become a learning organization and who provided me the framework to interweave action research into the day-to-day operations of PRiS. It was the participants who suggested we continue to survey and work to understand our members' needs more deeply than before.

Thanks to the project participants, this inquiry was successful. We designed a hypothetical solution to the main inquiry question through designing a flexible and adaptive strategy. Through this framework of designing a strategic planning process, we can implement a few key changes that allow for the inculcation of cycles of action research, which in turn can support us in becoming a learning organization. This action research approach, married to design thinking, becomes a way we can communicate and better understand the needs of our members. The biggest challenge to PRiS will come in developing the five disciplines (Senge, 2006) of a learning organization as those require social innovation and changing how we relate to ourselves and one another. However, I am certain that the organization can handle any challenge that comes at them.

Organizational Implications: The Cart Before the Horse

It might seem odd to outside observes and to those within my organization that the recommendations I have put forth are all social recommendations. This may come across as odd to some because as a technical organization one would expect that any innovations we need would be of a technical nature. A new type of technology, or service standard, or even some new platform meant to streamline our services and reduce staffing costs might seem like a more appropriate innovation to solve PRiS's woes. However, in the words of Dovey and Allen (2004) "social innovation precede[s] technical innovation" (p. 31). This is by far the largest implication of this inquiry and the ensuing recommendations for PRiS. To change our future, we need to modify our social dynamics. As PRiS is a small organization, the social changes we require exist at all levels. The management, including myself, will need to include others in decision making, the staff will need to take more responsibility for the success of the organization, and the

membership will need to continue to voice their demands and concerns. Thankfully, our behaviour is something that is always within our control.

Pris-temic implications. Thankfully the implementation process for these recommendations will not be onerous. They are mostly conceptual changes with ensuing changes in our social dynamics. There will be a marked increase in the number of meetings and workshops we will conduct, as well as the amount of people at the workshops, but this is something PRiS can harness. Using Allen and Dovey's (2004) and Senge's (2006) work as a guide we can see some of the leadership behaviours and social dynamics we will have to adopt if we want to successfully implement these recommendations. We will first have to work at shifting our perspectives with those with whom we communicate and practice direct empathic communication (Allen & Dovey, 2004, p. 22). This will involve everyone at PRiS exploring one another's thoughts and ideas and empathizing with their position rather than defending their own and attacking another's. A challenge to the technicians will be practicing intellectual humility (p. 23). In a technical organization, we sometimes fall into a competence-based leadership model where he who has the most technical skills necessarily has the most weighted opinion. This is a good model for our organization, but if we uncritically adhere to this we will lose out on the insights and capabilities of others. These approaches will involve more time communicating and discussing, and it might seem like a waste of time, but this will ensure that we are accessing the entire knowledge base of PRiS when we seek to take on a challenge.

The greatest challenge to PRiS regarding following the behavioural path laid out by Allen and Dovey (2004) will be in operating with negotiated hierarchies (p. 25). This means that we should decide our hierarchy as a team and decide who takes leadership for a given task or challenge, rather than deciding through the fiat of organizational structural diagrams and

employee position. Again, the implication for PRiS is that we will spend more time discussing and decided what to do as a team, but this helps ensure that we align everyone's actions to the same direction and that we consider our decisions through everyone's perspective. This will move PRiS to a more shared approach to leadership, but one that will serve us well in the future.

Contributions. The corpus of academic literature surrounding action research, design thinking, panarchy, systems thinking, organizational change, and learning organizations is colossal and it seems hard to contribute to. However, I think that this inquiry is novel and contributed in that we have interwoven many of these approaches and theories into a consistent and multifaceted approach to becoming a learning organization in a small business setting. I noticed in much of the literature, the default setting for studying these business process and concepts seemed to be in, or as part of large organizations, that I assumed had considerable material assets to support the implementation of these practices and who could buttress themselves against potential failure through their greater financial assets. This lack of literature on the risk of failure, or how to enact these practices in small organizations seems an oversight. However, I admit that the corpus of literature is huge, and I read a fraction of it, so in the interest of being humble, I admit I may be wrong. Of additional note is the idea of using design thinking as a method for data collection. I think this was quite a novel approach as it combined group-based methods and could, with some tweaking, include art-based methods, even drama-based methods; for example, through roleplaying a customer using a new service.

The story so far. Finally, I first disseminated the results of the inquiry through a participant check-in with an option for anonymous feedback. This took the form of emailing participants the findings of the research and allowing anyone to respond back if they had any additional comments. There was one significant response where the member voiced their

opinions on the findings but required no further clarifications. Next, my partner and I sent out an abbreviated version of the study conclusions and recommendations to all the project participants. I abbreviated the conclusions and recommendations so that they would be more accessible to everyone and to encourage everyone to read them. Once everyone had a chance to digest and reflect on the findings, the plan is to conduct the implementation phase of the IDEO (2015) design thinking process, to put our strategic planning process into experimental use. The specific policies and plans to meet the recommendations are the largest unknown of this inquiry. The suggestions and recommendations within this inquiry are conceptual in nature rather than practical suggestions for changing policies. This was a conscious decision as I consider that any significant changes will require everyone to buy in to them. One of the ways to ensure a level of buy in is to ensure that the people affected by the change, namely those within the PRiS organization, have a hand in design. In a way, by setting the direction, then working with the PRiS team to decide how to get there, this inquiry is adhering to the design principle of focusing on the end user (Gould & Lewis, 1985). The final implication is that if PRiS follows these suggestions and works its way through the inevitable conflicts and stumbles we can reinvent ourselves and thrive into the future together, as a tightly knit learning organization.

Implications for Further Inquiry

There are two main ideas for further inquiry that emerged from this inquiry. The first is in how a researcher can use design thinking as a method for data gathering in a group-based manner, and secondly how an individual can apply concepts I discussed in the literature review to small businesses and organizations. At heart, design thinking and the activities within IDEO (2015) are creative group methods that generate artefacts and insights that a researcher can use for data. One of the results I observed among my team who participated in the design thinking

workshop, was a noticeable increase in verve and energy after completing the first two steps of the workshop. I hypothesize that the positive energy that may emerge from the interactive, chaotic, and creative process of design thinking may empower those within it and encourage them for further changes and involvement.

Secondly, and most importantly, I think there is room in academia for studying how these concepts apply to smaller businesses. It was my impression when reading the literature that many of the studies and anecdotes came from the corporate world of large to medium sized corporations. This is reasonable, as these corporations' control large amounts of capital and can afford to pay consultants and conduct research on scales small businesses can only dream of. It also seems reasonable as these corporations are large because of their success and studying how they conduct business is like positive psychology in a business sense. However, as of June 2016 there are 1,143,630 businesses in Canada that fit the definition of small business (Government of Canada, 2016). These small businesses employ 8.2 million people and contribute an average of 30% of our GDP (Government of Canada, 2016). Imagine if those 8.2 million people employed in small businesses had access to and understanding of cutting-edge ideas like design thinking, learning organizations, panarchy, systems thinking, or action research. These organizations may be able to reach unheard-of levels of success and innovation. Small organizations, due to their smaller capital, are more vulnerable to the turbulence of our complex world, and as such may need these concepts to flourish. As I mentioned in the previous section, this was my impression when reviewing the literature and I admit I may be in error, but I think that small businesses and organizations with little capital would benefit from studies that research how small businesses can apply these concepts.

Thesis Summary

This inquiry sought to answer the question for PRiS, "What do we need to change in our organization so that we can respond to market demands quickly and efficiently?" This was a wicked question because we had lost touch with our members' needs, lost members and subscribership, and were losing money every month. We faced the very real possibility of going bankrupt and having to dissolve in a few years, stranding over 1000 residences without internet. We conducted this inquiry through initially surveying the membership on their internet usage habits and then conducting a design thinking workshop to discuss this inquiry question with the data we gathered through the survey. The findings and conclusions were surprising but showed me a path forward on how we can change our organization to grow our membership through responding to the market with a flexible strategy.

Most of these recommendations and organizational implications all center around information and learning. Adhering to design thinking principles and practices for service development centers around gathering information through experimentation and creative methods for generating ideas. Meanwhile, the strategic planning process recommendations I made focus the organization into iterative cycles of action research, design thinking, learning, creative destruction, and experimentation. This should allow us a framework to adapt and shift in respond to changes in the market. This, when paired with new processes for communicating and understanding our members, will ensure that we are always learning and adapting to their needs, a market that we, as an organization are now always following, watching, assessing and learning from.

The other recommendation, and by far the most important one, is the need for PRiS to generate a shared vision, a vision that the staff and board of directors' share, a vision that we can

sell to members and potential members, and a vison our community can buy in to. This vision can provide our organization with a destination to aim towards. It can guide us in turbulent times and through tough decisions. It can bind us together. I cannot overstate the power of a shared vision enough. If nothing else emerges from this inquiry except a shared vision for the organization, I will consider this inquiry a remarkable success.

I partnered with PRiS to conduct this thesis, not only because I lead it, but because the world needs more organizations like PRiS. Monopolistic telecommunications companies dominate the market and have a stranglehold on the consumer. Consumers suffer from a lack of choice, prices remain high, and services remain poor, especially in small rural communities. On top of that, large telecommunication companies and technological services take user data and repackage and sell it to advertisers, with little knowledge from those whose data they take. Meanwhile, the internet and technology become ever more centralized and controlled by leviathan organizations like Google and Amazon. The world needs organizations like PRiS now more than ever. We need organizations like PRiS to create an accessible, open, free, and affordable internet for every Canadian. The challenge is huge, but not insurmountable. We have an amazing team of people, an amazing community, and if PRiS can change, we can be what the world needs us to be.

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Appendix A

Systems Map of the Peace Region Internet Society

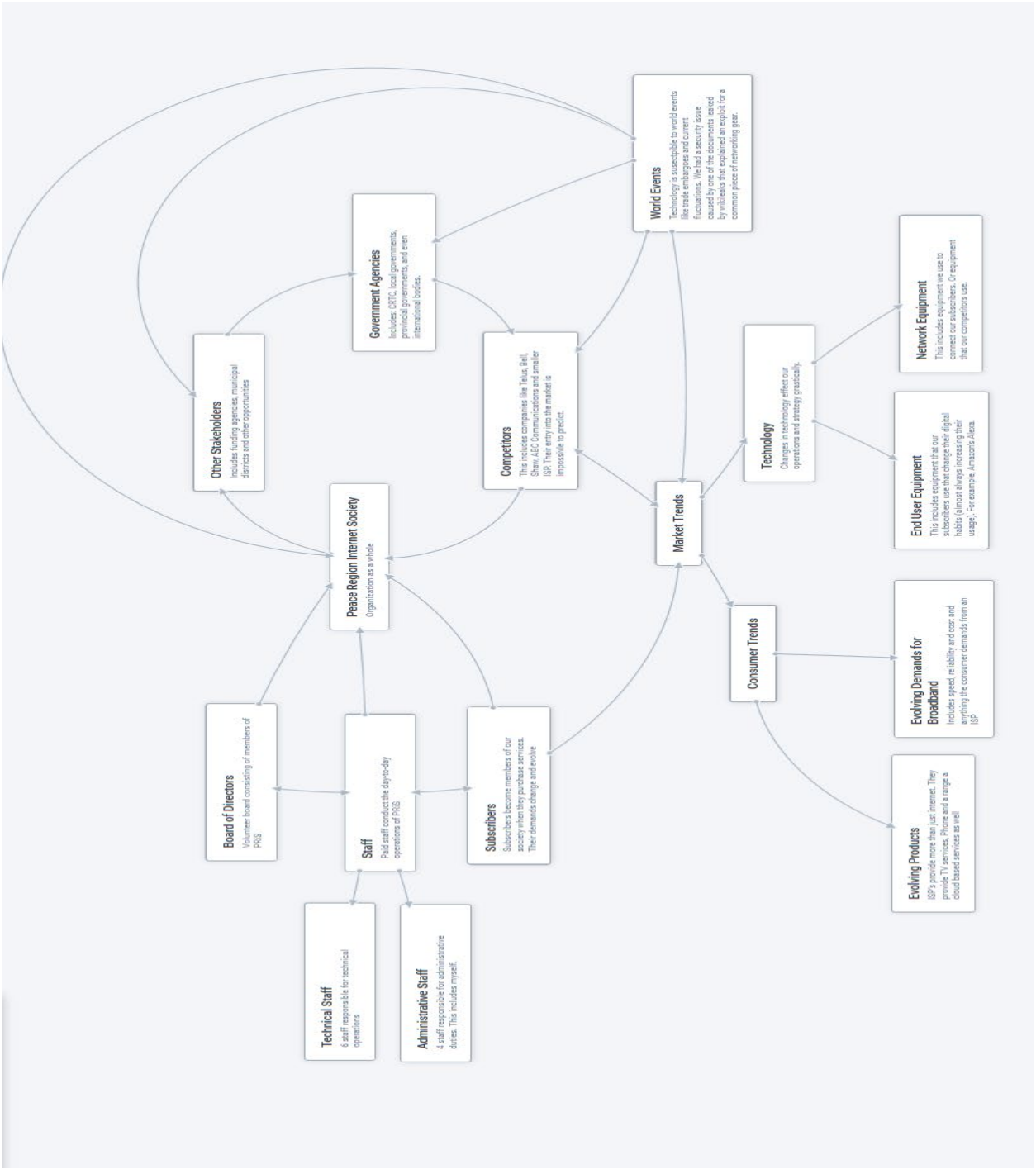

Figure 1: Systems map of the Peace Region Internet Society and its relations and dependencies.

Appendix B

Coughlan and Coghlan Action Research Cycle

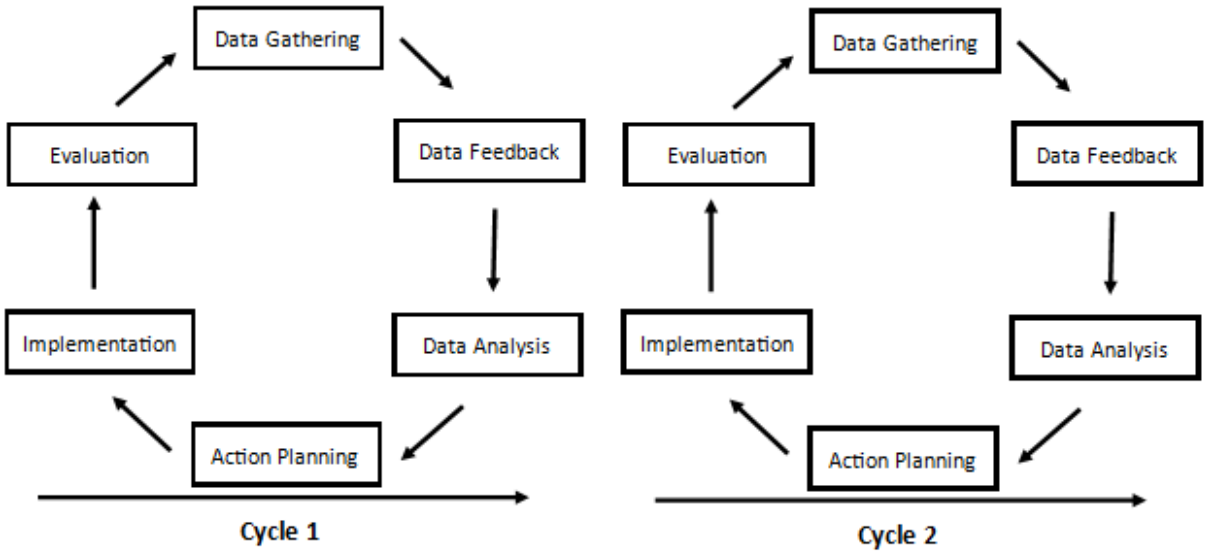

Figure 2: I adapted this model from Coughlan and Coghlan (2002) and Coghlan and Brannick (2005) to show the cyclical process of inquiry that action research uses.

Appendix C

Cynefin Systems Model

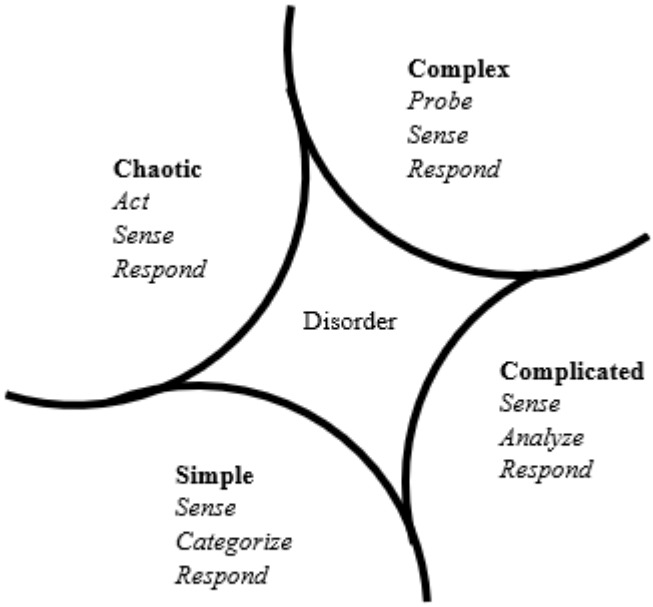

Figure 3: This is a graphical representation of the Cynefin model of systems from Snowden and Boone (2007, p. 72). This shows the areas of systems and the ensuing management strategies the authours suggest for dealing with them. Of particular note to this inquiry is the complex system space.

Appendix D

Panarchy System Model

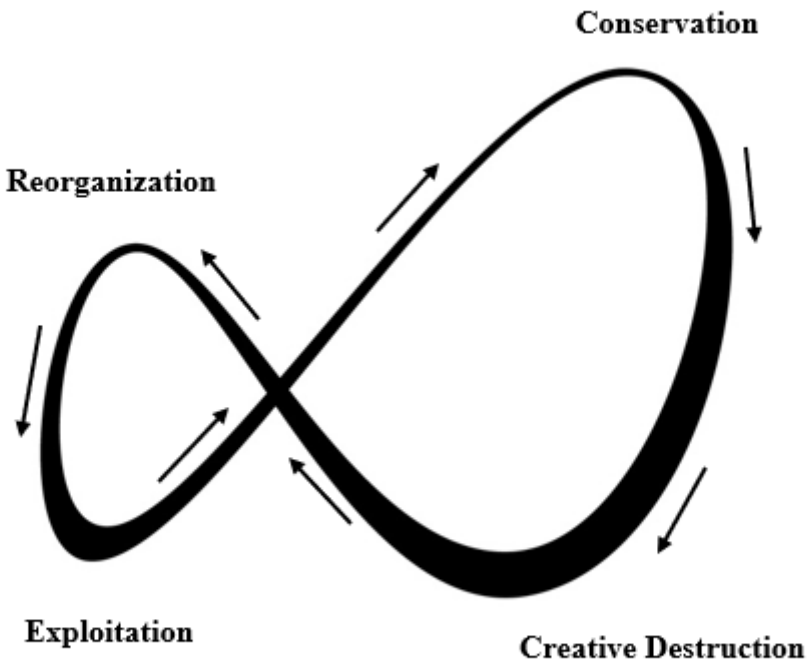

Figure 4: I adapted this model from Allen, Angeler, Garmestani, Gunderson and Holling (2014, p. 579). This model shows the life span of an adaptive organization. The organization is created and operates in the exploitation phase, it reaches maturity in the conservation phase, creative destruction kills old ineffective processes and ideas, allow for reorganization and the beginning of a new cycle.

Appendix E

Staff and Director Anonymous Survey

Survey Questions:

1. **On a scale of 1 to 10, [1 being poorly, 10 being extremely well], are we meeting the needs of our members?**

   1b. Why or why not?

2. **What is PRiS doing well? If anything.**

3. **What can PRiS do to improve?**

4. **In your opinion, do we understand the needs of our members? And are we meeting those needs?**

5. **How can we better listen to our member needs?**

6. **Is there anything else you would like to add**?

Appendix F

SAMPLE ONLINE SURVEY PREAMBLE AND QUESTIONS

(This survey will be completed using Survey Monkey, or a custom designed solution)

My name is Aaron Lamacchia and this research project is part of the requirement for a Master of Arts in Leadership at Royal Roads University. The research includes this survey and is estimated to take 5 minutes to complete depending on the level of feedback you provide. There is no obligation to complete the survey. The information you provide will be summarized, in anonymous format, in the body of the final report. At no time will any specific comments be attributed to any individual. All data received will be kept confidential and will be destroyed a year after convocation.

Your completion of this survey will constitute your informed consent.

Survey Questions:

Age:

- □ 1 – 17
- □ 18 – 30
- □ 31 – 40
- □ 41 – 50
- □ 51 – 65
- □ 65+

Number of Residents in Your Home:

- □ 1 – 2
- □ 3 – 5
- □ 5+

How many hours a day do you spend on the internet?

- □ Less than an hour
- □ 1 – 2 Hours
- □ 3 – 4 Hours
- □ 5+ Hours

What do you use the internet for (Can check more than one)?

- □ Video Streaming
- □ Music Streaming
- □ Online Gaming
- □ Work/Business
- □ Education
- □ Web Browsing
- □ Shopping
- □ Social Media
- □ Cryptocurrency
- □ Cloud Based Services
- □ Content Creation
- □ Other (Please Specify):

What is most important to you in an internet service provider (Can check more than one)?

- ☐ Low Prices
- ☐ Fast Speeds
- ☐ Large Data Packages
- ☐ Unlimited Data
- ☐ Variety of Options
- ☐ Customer Service
- ☐ Fast Field Visits
- ☐ Other (Please Specify):

Why did you choose PRiS as your internet service provider?

- ☐ Price
- ☐ Customer Service
- ☐ Local Business
- ☐ Non-Profit Status
- ☐ Fast Speeds / Access to Broadband
- ☐ Reliability

Have your internet use habits changed in the last five years?

- ☐ I use the internet more
- ☐ I use the internet less
- ☐ My habits have not changed at all

How important is the internet to you?

- ☐ Important
- ☐ Somewhat important
- ☐ Neutral
- ☐ Somewhat unimportant
- ☐ Unimportant

What download speeds do you consider acceptable?

- ☐ 1.5mbps
- ☐ 5mbps
- ☐ 25mbps
- ☐ 50mbps
- ☐ As fast as possible

Is there anything you would like from an PRiS that we may have missed?

Appendix G

RESEARCH INFORMATION LETTER

My name is Aaron Lamacchia and this research project is part of the requirement for a Master of Arts in Leadership at Royal Roads University. My credentials with Royal Roads University can be established by contacting Dr. Catherine Etmanski, Director, School of Leadership Studies: xxxxxxxxx@RoyalRoads.ca or xxx-xxx-xxxx ext. xxxx.

Purpose of the study and sponsoring organization
The purpose of my research project is to answer the question, "How can we change PRiS to develop a culture of learning and innovation so that we can respond to market demands more efficiently."

Your participation and how information will be collected
The research will consist of a 7-hour design thinking workshop where we will engage in a range of creative group activities to stimulate creative solutions to the inquiry question.

Benefits and risks to participation
This project is designed to change PRiS in a way that can make it more responsive to market demands. This will be done by engaging in workshops designed to stimulate creativity. The benefits of participating are that you become an integral part of

Confidentiality, security of data, and retention period
I will work to protect your privacy throughout this study. All information I collect will be maintained in confidence with hard copies (e.g., consent forms) stored in a locked filing cabinet in my work office. Electronic data (such as transcripts or audio files) will be stored on a password protected computer on my work computer. Information will be recorded in hand-written format and, where appropriate, summarized, in anonymous format, in the body of the final report. At no time will any specific comments be attributed to any individual unless specific agreement has been obtained beforehand. All documentation will be kept strictly confidential. Data collected will be destroyed once the Thesis defense is complete or after 2 years. Information collected through group methods will not be anonymous, but participants will be asked to respect the confidential nature of the research and not share names or identifying comments of the participants outside of the group method.

Sharing results
In addition to submitting my final report to Royal Roads University in partial fulfillment for a Master of Arts in Leadership I will also be sharing my research findings with the Peace Region Internet Society and their staff and board of directors. There will be a paper and electronic copy kept on the premise at all times. The thesis may also be published.

Procedure for withdrawing from the study
Participants are free to withdraw from the study at any time. The participant can choose if the data they provided up to that point can be retained or destroyed. They are to contact Aaron Lamacchia if they should choose to withdraw from the study at any time.

You are not required to participate in this research project. By signing the consent form you indicate that you have read and understand the information above and give your free and informed consent to participate in this project.

Please keep a copy of this information letter for your records.

Appendix H

Design Thinking Workshop Agenda

Welcome to the Peace Region Internet Society Design Thinking Workshop. The goal of this workshop is to creatively engage the staff and board of directors of PRiS in generating innovative solutions to help secure the future of the peace region Internet Society. This all day event find around a few key activities that are participatory and collaborative in nature and are designed Thinking about what we need to change so that we can meet the needs of our members and community. During this event I encourage you to get up, move around, explore the space, and be as creative as you need. Design Thinking is not a clean process, it is chaotic and meant to stimulate creativity with fun. Each activity will have supplies that we can use to track and brainstorm ideas. During the last 15 minutes of each activity we will come together to summarize what we have come up with during the activity.

8:30am: Arrival with coffee and donuts provided for breakfast

9:00am – 9:15am: Introduction to the event by Aaron Lamacchia

9:15am – 10am: Framing our Design

10 am – 11am: Define our Audience

11am – 12pm: Finding Themes

12pm – 1pm: Lunch

1pm – 2pm: Top Five

2pm – 2:45pm: How Might We

2:45pm – 3pm: Coffee Break

3pm – 5pm: Brainstorming

5pm – 5:15pm: Closing Debriefing

Appendix I

Staff Consent Forms

Peace Region Internet Society Design Thinking Workshop Consent Form for Staff

By signing this form, you agree that you are over the age of 19 and have read the information letter for this study. Your signature states that you are giving your voluntary and informed consent to participate in this project and have data you contribute used in the final report and any other knowledge outputs (articles, conference presentations, newsletters, etc.). Any data you contribute will be de-identified as part of the analysis.

☐ I consent to quotations and excerpts expressed by me through the Design Thinking Workshop be included in this study, provided that my identity is not disclosed.

☐ I consent to the material I have contributed to and/or generated thorough my participation in Design Thinking Workshop be used in this study.

☐ I commit to respect the confidential nature of the Design Thinking Workshop by not sharing identifying information about the other participants.

Name: (Please Print): _____

Signed: _____

Date: _____

Appendix J

Board Consent Form

Peace Region Internet Society Design Thinking Workshop Consent Form for Board

By signing this form, you agree that you are over the age of 19 and have read the information letter for this study. Your signature states that you are giving your voluntary and informed consent to participate in this project and have data you contribute used in the final report and any other knowledge outputs (articles, conference presentations, newsletters, etc.). Any data you contribute will be de-identified as part of the analysis.

☐ I consent to quotations and excerpts expressed by me through the Design Thinking Workshop be included in this study, provided that my identity is not disclosed.

☐ I consent to the material I have contributed to and/or generated thorough my participation in Design Thinking Workshop be used in this study.

☐ I commit to respect the confidential nature of the Design Thinking Workshop by not sharing identifying information about the other participants.

☐ I acknowledge that I have power over some of the participants and that I will not use my power as a source of coercion or retribution.

Name: (Please Print): _____

Signed: _____

Date: _____

Appendix K

Question	Coded Responses		Categories and Frequency
What is the problem you're to solve	• Financial viability • Increase membership revenues • Meeting member needs financially viable • High-speed internet • Sustainable • Budget concerns • Member communication • PRiS losing money	• Faster more reliable internet • Increase revenue • Tighten spending • Increase membership serve community • Solve lack of communication with members • Modernize	Financial Issues: 10 Grow Membership:2 Increase Revenue: 6 Budget: 2 Member Communication: 4 Modernization: 3
1. Take a stab at framing it as a design question.	• Increase membership and revenue • Profile • Long term survival and relevancy • Why of PRiS • Improve member satisfaction	• Financial stability • Make money • Modernize • Serve members better	Financial Issues: 5 Member Service: 3 Mission: 2 Community Profile: 1 Modernize: 1
2.Now state the ultimate impact you're trying to have	• Reliable internet • Serving the unserved and underserved • Give services people want • Identify values • Creativity	• Meet member needs • Comparable services to urban environments • Save PRiS • Meet public demand	Member Needs: 6 Organizational Needs:4

Table 7: Coding, Categorizing, and Theming Example

Table 7: This is an example of coding and categorizing participant responses during the design thinking workshop. I analyzed participant responses for similar nouns and themes. I then quantified these for use in the thesis to see their frequency.

Appendix L

I sent participants an abbreviated version of the findings of the inquiry and then asked them the following question:

1. Is there any feedback you would like to offer regarding the findings as presented?