7-14-2020

Continuous Improvement Leadership in Applied Research

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Abstract

The purpose of this Organizational Improvement Plan (OIP) is to assist leaders in Ontario colleges in understanding the barriers and challenges of engaging faculty to enact applied research practices. Undergirding this OIP is social cognition theory and the analytical discipline of improvement science theory. Taken together, these theories align with systems thinking and are a step towards a holistic understanding of the dynamics of a college learning culture. Underpinned by a set of simple principles including improving through communication, learning through collaboration, and changing through coordination, a continuous improvement (CI) leadership approach, which combines servant (Greenleaf, 1977), team (Kogler Hill, 2019), and adaptive (Heifetz & Linsky, 2002) attributes, is utilized to address this problem of practice. To lead the change process, the CI leadership approach provides positive opportunities to engage with faculty by building relationships, social capital and professional capital, for deeper and more lasting change. The premise of this OIP is that developing a network improvement committee is an opportunity to engage, accelerate learning, and develop relationships with faculty. This OIP's change management, implementation, and communication plan takes an action-research and ethics-based approach. Different perspectives inform this approach, including Lewin's (1947) 3-Step Change Process and the Carnegie Foundation's Six Core Principles of Improvement Framework (Bryk, 2015). Once implemented, it is anticipated that the outcomes of this OIP will contribute to a common language for applied research that increases the likelihood of influencing faculty engagement. Stronger linkages between teaching and applied research are consistent with continuous improvement in learning and collective accountability to meet the expectations of a competitive global market, strategically aligned with economic and community impact priorities.

Key Words: Applied research, Faculty, Colleges', Continuous improvement, Change, Leadership

Executive Summary

Every college has a story – a journey that includes where it's been, where it is now, and where it wants to go. This Organizational Improvement Plan (OIP) outlines a continuous improvement leader's journey to increase faculty engagement in the enactment of applied research. The primary goal of the change is to establish a network improvement committee (NIC) to engage faculty in the collaborative activity of developing a common language for applied research within one academic school at a large polytechnic College. Yet, engagement is not one dimensional. Arguably, influencing applied research practices among faculty within an Ontario college institution is complex, relationship-dependent and multi-dimensional. Moreover, in its current state, applied research practice as it is conceived is uncoordinated (Holmes, 2017). What is known and offered as applied research practices mostly focuses on prescriptive transactions related to policies described in strategic and academic plans (Fisher, 2010). Undeniably, a debate continues to dominate the engagement discourse, leading to a state of confusion given the lack of clear language needed to support faculty undertaking of applied research.

Applied research practices have also become critical for survival given the unprecedented challenges institutions face in differentiating themselves from other higher education institutions (HEI). This is coupled with the recent demands from the government to strategically align with community impact and economic priorities in generating human capital and skills for Ontario's workforce. Within HEI, however, "we go fast and learn slow - we consistently fail to appreciate what it takes to make some promising idea work reliably in practice" (Bryk, 2015, p.6). Instead, what is required is taking a deliberately incremental approach. Respectively, this OIP consists of three complementary chapters, each in a self-captured section to address a meaningful solution to the problem of practice (POP).

Chapter 1 introduces the organization (pseudonym is Five-star) and describes the external and internal forces that shape its context. A faculty-driven relationship approach is introduced that attempts to stimulate meaningful organizational change by raising awareness of the problem of the lack of faculty engagement in applied research practices. This is supported by examining formal and informal structures within the organization through an idealist-pragmatic lens and utilizing a systems thinking approach. The chapter concludes with a leadership-focused vision and an assessment of organizational change readiness assessed through political, cultural and social cognition forces, and interpreted using social cognition and improvement science theories.

Chapter 2 describes the planning and development change, and outlines the continuous improvement (CI) leadership role as the approach to implement change. The CI leadership model which combines the attributes of servant (Greenleaf, 1977), team (Kogler Hill), and adaptive (Heifetz & Linsky, 2002) characteristics, inspires vision, nurturing relationships and effective change. For leading the change process, Lewin's (1947) 3-Step Change Process, combined with the Carnegie Foundation's Six Core Principles of Improvement Framework (Bryk, 2015) is used to connect inter-related communities of activities. Moreover, an organizational analysis to diagnose and assess the elements that support and oppose change is explored through Nadler and Tushman's (1980) Model of Organizational Behaviour. Utilizing systems thinking, this chapter proposes three possible solutions to address the POP regarding the lack of faculty engagement in applied research practices. While the solution largely focuses on how a CI leader will facilitate and work with the NIC on devising a common language of applied research within one academic school, it is equally concerned with how adaptive space (Uhl-Bien & Arena, 2017) will be used concurrently to support professional and social capital (Fullan, 2016) for the planned change. The chapter concludes with ethical leadership considerations at each stage of the change process.

Chapter 3 outlines a plan for implementing, monitoring, and communicating the organizational change process. Lewin's (1947) 3-Step Change Process, combined with the Carnegie Foundation's Six Core Principles of Improvement model (Bryk, 2015) is used as the framework to detail a change implementation plan. Thus, the implementation plan maps out how a CI leader facilitates and collaborates within a NIC to address key priorities and a shared goal to address a common language for applied research. To track progress against a range of predetermined steps, a plan-do-study-act methodology (Moen, 2009) for monitoring and evaluating the plan is outlined. This chapter also includes a multi-faceted communication strategy that aligns with Klein's (1996) key principles in communicating change along with McPhee and Zaug's (2000) four communicative constitution of organizations (CCO) flow framework and Cawsey, Deszca, and Ingols (2016) four phases of communication. This OIP concludes with next steps and future considerations for faculty and administrators.

The overall conceptual framework that informed the analysis of this OIP is shown in Appendix A and entitled Continuous Improvement Transformation Conceptual Framework. This framework is adapted from Nadler and Tushman's (1980) Congruence Model of Organizational Change which addresses the gap between current and envisioned state. This pragmatic open system framework balances the complexity needed for organizational analysis while recognizing the dynamic, complex, and adaptive collaborative interaction needed for action planning and communication (Cawsey et al., 2016). Thus, this conceptual framework is not meant to solve the problem of practice. Instead, the framework provides a CI leader the opportunity to visualize the political, cultural, and socio-cognition context-specific components that support and oppose change, before evaluating the capability to improve the complex challenge of engaging faculty in applied research practices at a polytechnic College.

Acknowledgments

This Organizational Improvement Plan (OIP) is dedicated to my late beloved mother who unremittingly reminded me that each moment in our life is teaching and learning - not through only words but in action. The continuous improvement journey of this OIP could not have occurred without the support of many individuals on my path. I wish to thank some of them here.

For the many excellent leaders from my higher education institution who helped ignite my ideas about imbuing words with meanings that have different values and then combine them into a shared vision. This includes executive leaders Jeff, Gary, Dan, Dev, and Mary that sparked my ability to foster and influence change; faculty member, Klaas who challenged my thinking to ensure genuine participation and a voice consistent with faculty values; librarians Joël and Linda for helping me collect important research articles; and my students who reminded me daily why accountability of quality and continuous improvement in education is paramount.

For my wonderful cohort in higher education leadership with whom I shared this journey, more specifically to the vibrant, talented and brilliant women Lara and Inga, you changed my perspective and helped me to learn and grow as an individual. For my best friend Nancy, I can't thank you enough for your beautiful friendship, spiritual mindset and powerful energy.

For the EdD program staff and all my talented professors offering guidance and astute counsel, I am grateful. However, I want to especially thank Dr. Cheryl Bauman-Buffone for imparting her inspirational wisdom, kindness, care, and invaluable words of support, as well as, Dr. Beate Planche for sharing her keen perspicuity, humour, compassion, and helpful feedback.

For my two dynamic daughters, Sam and Emily, who reminded me everyday with warm hugs, of the art of connection. Lastly, for my loving husband Gord, who braved this journey with me and often, when tired, carried me, enabling me to devote time to research and writing.

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Actors: Within the context of this OIP proposal, consist of individuals working within higher education who adapt and learn from the environment (e.g., Faculty, Administrators, and Union).

Adaptive leadership: a follower-centred approach which focuses primarily on how leaders help others to do the work they need to do, in order to adapt to the challenges they face. Adaptive leaders engage in activities that mobilize, motivate, organize, orient, and focus on the adaptation(s) required of people in response to changing environments (Heifetz, 1994).

Administrators: Within the context of this OIP refers to Associate Deans, Deans, Vice Presidents, and President.

Antecedent condition: A situation or event that existed before or logically precedes another.

Antecedent factor: Represent certain causes or reasons that precede and lead to involvement. They may include the individual themselves, and the individual determinants, object, stimuli or the product (Meckler, 2011).

Applied research: is a form of systematic inquiry involving the practical application of science to solve a particular business, community or client-driven problem.

Beliefs: Perceptions faced by an individual or group that relates to their expectations, interpretations, and preferences (Mohammed, 2001).

Change implementer: Is an individual who has the responsibility for making certain change happen, nurturing support, and alleviating resistance.

Climate: A surface manifestation of an organization's culture, whereby the values and beliefs of individuals are manifested into various organizational structures, processes, and systems that guide collective behaviours (Alvesson, 2011).

Cognition: A group of mental processes that are used to acquire knowledge and understanding through thought, experience, and senses (Weick, 2012).

College of Applied Arts and Technologies (CAAT): Represents colleges that were formed in 1965. Ontario Reg. 34/03 constitute the legislated components of the governance arrangement. Within this legislation, CAATs have a dual mandate – to meet labour market needs and to serve social policy initiatives and goals.

Congruence model: Illustrates an organizational analysis of transformation in support of change by reviewing its factors and relationships between the organization and its environment.

Continuous Improvement (CI): Otherwise known as the science of improvement. CI views change as positive given there is a continual improvement emphasis directed towards goals. There is an assumption within this school that organizations are adaptive and purposeful,

"deliberately designed to engage collective action in solving complex problems adding more meaningful contributions to the team" (Bryk, Gomez, Grunow and LeMahiue, 2015, p. 9).

Culture: Means different things to different scholars and dependent on conceptualization. In general, culture provides meaning, direction, and mobilizations as it is the social energy that moves an organization into action (Killmann, Saxton, & Serpa, 1985).

Enact: The process of acting something out.

Facilitator: A role in which one person makes things easier for others – more to do with helping people change their attitudes, skills, habits, ways of thinking and working (Kezar, 2014).

Faculty: Otherwise known as a professor (teacher) who has the responsibility to teach and instruct a spectrum of academic activities to assigned groups of students, and addresses essential educations skills and vocational learning outcomes.

Five-star: The pseudonym given to the college in question.

Higher Education (HE): Describes education after high school such as at a college or university.

Improvement Science (IS): A theory and methodology to potentially increase knowledge-building and motivational systems within organizations by learning from variations in practices (Moen, 2009).

Integrated Master Academic Priority Plan (iMAPP): Represents a compilation of articulated academic priorities presented to the organization to respond to plan and allocated resources.

Knowledge Mobilization Plan (KMP): A purposeful plan that transfers key information and knowledge, making research relevant and meaningful to society by way of supporting policy and/or practice change. An effective KMP is meant to formulate engagement, end-user participation and attention to practice, building social capital and capacity building (NSERC, 2007).

Mental model: A mechanism to help people describe, explain, and predict system behaviour. Specifically, knowledge structures held by members of a team that enable them to form accurate explanations and expectations for tasks, and in turn, to coordinate their actions and adapt their behavior to demands of the task and other team members (Kezar, 2014).

Mindset: An established set of attitudes held by an individual.

Ministry of Training, Colleges and Universities (MTCU): The provincial legislated body in Ontario responsible for postsecondary education agencies and training which is chartered under the MTCU, RSO, 1990, Chapter M.19 Act (last amended in 2019, c. 7, Schedule 39).

Model of Improvement: Is a framework for applying the five fundamental principles of improvement (knowing what to improve, having feedback mechanisms to tell you if the improvement is happening, developing an effective change that will result in improvement, testing a change before attempting to implement, and knowing when and how to make the change permanent). Developed by Langley, Moen, Nolan, Nolan, Norman, & Provost, 2009.

Network: Represents a diverse number of individuals that are interconnected.

Network Improvement Committee: A group of individuals who come together to focus on a well-specified aim, guided by a deep understanding of the problem and the systems that produce it and how to improve the situation. Their work is disciplined by the rigor of improvement science and a rapid cycle of improvement to test and refine interventions (Bryk, 2015).

Ontario Colleges of Applied Arts and Technologies (OCAAT) Act: A legislated act updated in 2002 that sets out the regulations, of how colleges are to operate and be governed. Included within this update, was the colleges' mandate to incorporate applied research practices.

Ontario Public Service Employee Union (OPSEU): A large Ontario union representing college full and part-time workers to develop and defend the Collective Agreement with MTCU.

Open system: A view to developing a rich application for the current condition of an organization and plausible alternatives and actions that could improve it. Developed by von Bertalanffy in 1950, employs functional and relational criteria to study the whole, rather than simple parts (Flood, 2010).

Organizational culture: The shared basic assumptions, values, beliefs, and behaviour patterns that characterize a group (Schein, 2017).

PESTE analysis: Used by many organizations for strategic planning to address macro-environmental pressures related to political, economic, social, technological and ecologic forces.

Plan-Do-Study-Act (PDSA): A framework that can be used by the team for an efficient trial-and-learning methodology. The cycle begins with a plan and ends with action according to the learning gained from the plan-do, and study of the cycle (Reed & Card, 2015).

Postsecondary Education Choice and Excellence Act: An act passed in 2000 that permitted colleges in Ontario to offer degree programs in applied areas.

Proactive: The ability to create or control a situation in response to environmental changes.

Public policy: A broad framework where decisions have an action or inaction which is pursued by governments concerning some issue or problem (Jackson, 2006).

Reactive: The need for adapting to incremental changes in response to environmental changes.

Scheduled Work Formula (SWF): A workload measurement tool that identifies the total workload assign and attributed by the college to a teacher. This workload consists of no more than 44 hours in any week for up to 36 weeks in which there are teaching contact hours for teachers. Workload factors include: teaching contact hours with students, attributed hours for preparation, hours for evaluation, feedback, and complimentary factors (OCAAT, 2017).

Schema: Is a mental construct we develop as we engage and interact within a social and physical environment. Three primary schemas include: behaviour, symbolism, and operational. This influences the information that groups acquire, process, and retain (Manning, 2018).

Sensemaking: Involves enactment of actors (people) and can be viewed as a recurring cycle comprised of a sequence of events occurring over time. The cycle begins as individuals form unconscious and conscious anticipations and assumptions, which serve as predictions about future events (Weick, 1995).

Servant leadership: is sometimes treated as a trait, but viewed as a behavior in this OIP. Servant leadership begins with the natural feeling that one wants to serve *first.* Then conscious choice brings one to aspire to lead. Servant leadership works best when leaders are altruistic and have a strong motivation to help others. This leadership advocates for building consensus in groups rather than using coercive leadership (Greenleaf, 1977; Spears, 2002).

Social cognition theory: Refers to an agentic perspective to self-development, adaptation, and change. In this view, people are self-organizing, proactive, self-regulating and self-reflective (Weick, 2012).

Stakeholders: Individuals or groups having an interest or concern.

STEEPLED analysis: A framework designed to evaluate environmental factors related to socio-cultural, technological, economic, ecological, political, legal, and ethical pressures.

Strategic Mandate Agreement (SMA): An agreement between a higher education institution with the MTCU outlining its shared objectives/priorities and how the institution will build on its current strengths to achieve its vision and help drive system-wide objectives and government priorities. The colleges currently are in their second iteration of their SMA which will expire in 2020 with SMA3 starting April 1, 2020.

Subcultures: A cultural group within a larger culture that holds differences in interest, beliefs, and attitudes (e.g., may include religion, race, ethnicity or disciplines across colleges).

Systems theory: The interdisciplinary study of systems which includes adaptive and complex systems.

Systems thinking: Is a way of thinking about, and language for describing and understanding the forces and relationships that shape behaviours. Three major components of systems include: elements (inputs), interactions (processes), and purpose (outcomes) (Senge, 1990).

Task: Structures put in place that attributes work goals and performance (Mohammed, 2001).

Task-related: Knowledge and understanding of work, processes, strategies, and plans (Mohammed, 2001).

Team: Two or more people with different tasks who work together adaptively to achieve specified and shared goals where the central feature is coordination (Larson & LaFasto, 1989).

Team decision making: Refers to a process that involves gathering, integrating, and communicating information in support of arriving at a task-relevant decision (Cannon-Bowers & Salas, 2001).

Team leadership: is a unique situation for leadership as it is very process oriented. Leaders, in this case, are in a position to diagnose, analyze, or forecast problems (monitoring) or take immediate action to solve a problem; focus on problems within the group (internal) or which problems need intervention; and make choices about which solutions are the most appropriate. Although all members of the team engage in monitoring, team leaders differ in timing of action and having the ability to determine what interventions are needed, if any, to solve team problems (Kogler Hill, 2019).

Team-shared: Interpersonal communication and awareness of teammates' roles, skills, beliefs, and habits (Mohammed, 2001).

Values: Refers to what is desirable and worthy for individuals or the organization collective level. Values exist at multiple levels. At the individual level, pinpoints guidelines and fundamental beliefs for everyday behaviour. At the collective level, cultural values are widely shared, abstract ideas of what is good, right, and represent the goals that members of the collective are encouraged to pursue (Manning, 2018; Schwartz, 1999).

List of Acronyms

ACCC	Association of Canadian Community Colleges
AITS	Academic Information Technology School
CA	Collective Agreement
CAAT	College of Applied Arts and Technologies
CCO	Communicative Constitution of Organizations
CI	Continuous Improvement
EES	Essential Educational Skills
HEI	Higher Education Institution
IHI	Institute for Healthcare Improvement
iMAPP	Integrated Master Academic Plan Priorities
IS	Improvement Science
MTCU	Ministry of Training, Colleges, and Universities
NIC	Network Improvement Committee
OCAAT	Ontario College of Applied Arts and Technology
OIP	Organizational Improvement Plan
PDSA	Plan-Do-Study-Act
POP	Problem of Practice
SLE	Signature Learning Experience
SMA	Strategic Mandate Agreement
SWF	Scheduled Workload Formula
VLO	Vocational Learning Objectives

Chapter 1: INTRODUCTION AND PROBLEM

Chapter 1 of this Organizational Improvement Plan (OIP) introduces the organization including its strategic aspirations, organizational structure and established leadership practice. It also presents the personal leadership position of a change leader, the relevant theoretical lens to leadership practice, and the problem of practice (POP) being investigated within the broader contextual factors. The chapter concludes with a leadership-focused vision for change and an assessment of organizational change readiness interpreted amid specific theoretical models. To ensure confidentiality and privacy protection, the anonymization process for this OIP has been followed. Therefore, the pseudonym, Five-star is the identifier used to represent the organization's name and all referenced data herein as it is the focus of this OIP.

Organizational Context and History

Five-star's humbling beginnings began in 1967 with just over seven hundred students on site (Government of Ontario, 1967). During this time, similar to other Ontario colleges, Five-star had a distinct vocational focus, in a period where educational access was one of the key ideological markers for inclusive citizenship (Skolnik, 2013). Today, as one of twenty-four colleges under the Ontario College of Applied Arts and Technology [OCAAT] Act, 1965, Five-star is considered a large-sized publicly-funded polytechnic comprehensive college (Five-star, 2017). A differentiating feature for Five-star as a polytechnic college, is that it combines practical training with theory fostered by innovation, experiential learning, and applied research (Polytechnics Canada, n.d.). Situated in an urban area in Ontario, Canada, Five-star serves 22,000 part-time students and 23,000 full-time students on multi-regional campuses. Also included in this full-time complement are 5,000 international students from 97 countries, and a large alumni network with approximately 180,000 individuals worldwide.

With expansion and beautification, still under-way, Five-star is divided into five schools encompassing twelve academic departments across multi-campuses, each managed by a Dean and Associate Dean. In addition, Five-star offers over 200 full-time, part-time, apprenticeship, and adult training programs in a variety of disciplines including applied arts, business, community services, healthcare, hospitality, media, public safety, and technology. These wide-ranging suites of programs offer certificates, diplomas, and degrees which include experiential educational learning in response to labour market needs. With a crucial shift in the valuation of learning - teaching and instruction duties within these academic programs are administered by 517 full-time faculty (representing 30%) and 1,187 part-time faculty (representing 70%) of the total 1,704 faculty members (Five-star, 2018a).

Five-star is also a unionized environment where the collective agreement (CA) is negotiated provincially between the College Employer Council for the College of Applied Arts and Technology (CAAT) and the Ontario Public Service Employees Union [OPSEU] (OCAAT, n.d.). The CA is a legally binding contract that specifies the rights, duties, and obligations of faculty and the employer. At the same time, within this context, faculty and administrators are dealing with the same problems facing higher education institutions, namely: survival, growth, and adaptation in a complex environment involving internal integration that is continuously changing. These issues are dynamic and exist within the political, economic, social, and cultural contexts within which Five-star operates.

Political Context

In 2013, the Ontario provincial government introduced a differentiated postsecondary education agenda to support student success and access to high quality education while helping to drive system-wide objectives and government priorities (Ministry, Training, Colleges and

Universities [MTCU], 2013). As part of these system-wide objectives, each of Ontario's publicly-funded colleges and universities entered into a Strategic Mandate Agreement (SMA) with the provincial government. In 2016, to increase global competitiveness, avoid duplication, and maintain efficient and financial sustainable institutions, the ministry redesigned the college and university funding models to eliminate automatic funding for enrolment growth by establishing enrolment corridors and entered into a SMA 2. Beginning April 1, 2020 until 2025, as part of SMA 3, each publicly-funded college and university in Ontario will be adapting to a new government performance-based outcome formula tied to institution-specific economic impact metrics. In this case, this five-year cycle ties a larger portion of funding to metric performance starting at a system-average of 25% and ramping up to a system-average of 60% of total operating grant funding (MTCU, 2019).

Economic Context

The current public sector funding received by Five-star from the MTCU is equivalent to 34% of their total revenue (Five-star, 2019a). Arguably, the upcoming performance-based funding replacing the traditional enrollment rate represents a significant lever the provincial government is using for driving Five-star's hierarchical governance decision-making which is steered at a distance (Capano, 2011). This performance-based funding is incentivizing colleges and universities to redirect resources and invest in initiatives that they believe will result in positive economic outcomes. Two specific change drivers include meeting students skills with job outcomes, and economic and community impact (Five-star, 2020a).

In addition, while the OCAAT Act allows colleges to pursue research activities as one way to differentiate and achieve alignment of core objectives, fund transfers from the MTCU do not include distinct envelopes for research (Government of Ontario, 2002). Consequently, apart from

competing for external research grants, currently there is no consistent internal or external allocation of resources nor processes for research activity across Five-star's five academic schools and twelve departments. Instead, allocations are dispersed across the schools based on known provincial or federal government research grants, where each school remits its total expenditures to the central finance team which is aligned with its approved revenue (Five Star, 2018b).

Social and Cultural Contexts

A core component of applied research is the community impact and opportunity for students to gain real-world experience, while completing their studies (Polytechnics, 2017). The focus on applied research as a core academic value of Five-star reflects a fundamental epistemological position pushing boundaries of pedagogical traditional teaching practices. Although Five-star has realigned internal governance and departmental functions to focus on applied research, there has been very little communication on how practices should be developed and financially supported (Five-star, 2019a).

Five-star appears to assume faculty will incorporate applied research into the curriculum and formulate new relationships with external community partners to obtain external grants or private partnerships with businesses, introducing research into a conventional scholarly mandate. Arguably, within these changing contexts and foci on applied research, the organization's academic and strategic plan is striving to utilize Five-star's current strengths to achieve its strategic organizational mission, vision, purpose, and goals.

Organizational Mission, Vision, Purpose, and Goals

In dealing with context and its inherent complexity, Five-star strives to instill in its constituents a strong feeling that the institution has a distinctive purpose and that the programs reflect its mission. Simonson and Schlosser (2013) postulate that mission statements identify

what and how the institution is doing in the present state. In this case, Five-star's mission is: delivering pathways to success, an exceptional learning experience, and a global outlook to meet the needs of students and employers (Five-star, 2020b).

Conversely, vision statements provide guidance and directional objectives for the future state (Cawsey, Deszca, & Ingols, 2016). Five-star's vision is simple: unlocking potential (Five-star, 2020b). With increasing enrolments and strong financial health, Five-star's integrated 2020-25 Master Academic Priorities Plan (iMAPP) encourages a transformational organizational culture. Against this background, Five-star is striving to create a new kind of community culture where the creativity and entrepreneurship of the students and the wisdom of the faculty educators converge to advance applied research practices within the institution. For Five-star, the vision or future state would see all post-secondary students engaged in some form of research (both as part of the curriculum and as an extra-curricular activity). This desired applied research activity includes flexible onboarding of industry, business, and community projects while operating through an externally funded model supporting both faculty and student involvement (Five-star, 2020a).

As such, a recently communicated significant aspirational goal for Five-star is becoming Canada's Transformative College (Five-star, 2020b). Strengthening Five-star's commitment to innovation and entrepreneurship, an innovation hub is being developed to serve as a platform to bring synergies between academia and community for an interdisciplinary approach to learning. The institution is also built on values that align with desirable constituent goals. Consequently, as its number one academic goal and priority, Five-star adopted a mandate which reigns every student across the college receive a signature learning experience (SLE), which includes research (Five-star, 2020a).

Established Leadership Approaches, Practices and Organizational Structure

While Five-star is boasting a creative, innovative and dynamic environment many of the senior administrator leaders are acting in a more transactional manner. Although Burns (1978) claims transactional leaders engage in exchanges that are mutual beneficial for both the leader and follower, Basham (2012) argues transactional leaders do not have a major interest in changing the culture. It follows that the reporting relationship that govern the organizational structure within Five-star is essential for understanding decision-making.

Organizational Structure. Five-star operates within a hierarchical and bureaucratic structure, where leaders pride themselves on being efficient, stable and predictable. Bureaucracy, therefore, represents the overriding leadership practice and creates an opportunity for change but also manifests barriers to change within the culture. Morgan (2006) contends bureaucracies in a rational organization are effective during stable environments, especially if role clarity and task responsibility are supported by appropriate resources and assist individuals to reach a common goal. Relatedly, the culture is striving from one that is hierarchical towards an adhocracy culture. Cameron and Quinn (2011) best define an adhocracy culture as leaders that are considered to be innovators with a commitment to grow a "dynamic, entrepreneurial and creative place to work." (p. 75). It is a general perception amongst faculty that Five-star fits into the conservative, top-down hierarchical functionalist paradigm (Mingers, 2014). In this regard, individuals work within an objective lens, operating as a system "directed toward the production of order and regulation" (Hassard, 1991, p. 277). Characteristics of this paradigm include individuals' behavior that is objective, analyzing information that is quantitative with key performance indicators that are contextually bounded (Mingers, 2014). Given this organizational structure, individuals operate independently within their divisions with behaviours "regulated by universal norms around the

social needs of the system" (Schein, 2017, p. 163). Similarly, within this static functionalist environment, leadership and its social mechanism do not operate as a hierarchy or bureaucratic structure (Mingers, 2014). Instead leadership within Five-star is manifested through a relational and collective processes "in which collaboration and shared understanding are deemed axiomatic to getting things done" (Preskill & Brookfield, 2009, p. 3).

As identified in Figure 1, Five-star is governed by a Board of Governors that provides ultimate strategic and financial oversight and governance affairs responsibilities of the College. The senior leadership team is comprised of a President, several Vice-Presidents, Executive Directors, Associate Deans and Deans overseeing five academic schools and twelve academic departments, while the union negotiates the CA for the colleges' academic policies. Within the five academic schools, there is a tiered structure whereby full-time and part-time teaching faculty report to the Associate Dean within their academic department. The faculty are governed, however, by the CA established by the College Employer Council for CAAT and the OPSEU. As a result, wide-scale change can be difficult to facilitate as faculty department units operate relatively independently across schools. In addition, preparing faculty for the increasing complex demands of the academic workplace while shaping their work within the context of applied research, raises critical questions of organizational roles and responsibilities (Sandmann, Saltmarsh, & O'Meara, 2008). Although, it is important to note that within Figure 1, faculty within any of the five academic schools may access research support through a separate Research and Innovation office which is currently situated in the Senior VP, Academic Services portfolio.

At the same time, as Morgan (2006) suggests, the 'space' around our working environments has a direct effect on our work. It embodies the values that are important to the college community, shapes our communication and workflow, and facilitates knowledge creation

and exchange. As a result, a modern space which is called the Innovation Village is being developed to connect industry partners and the Five-star community. From training, data mentorship, and collaborative events and workshops, the Innovation Village is meant to become a designated space where industry partners can easily connect with Five-star researchers and students. That said, there appears to be a lack of engagement with faculty and also an absence of connection between the Centre of Research and Innovation office and the developments of the Innovation Village, which is to serve as a research hub to increase community engagement. These two areas are also taking divergent pathways and defining applied research differently.

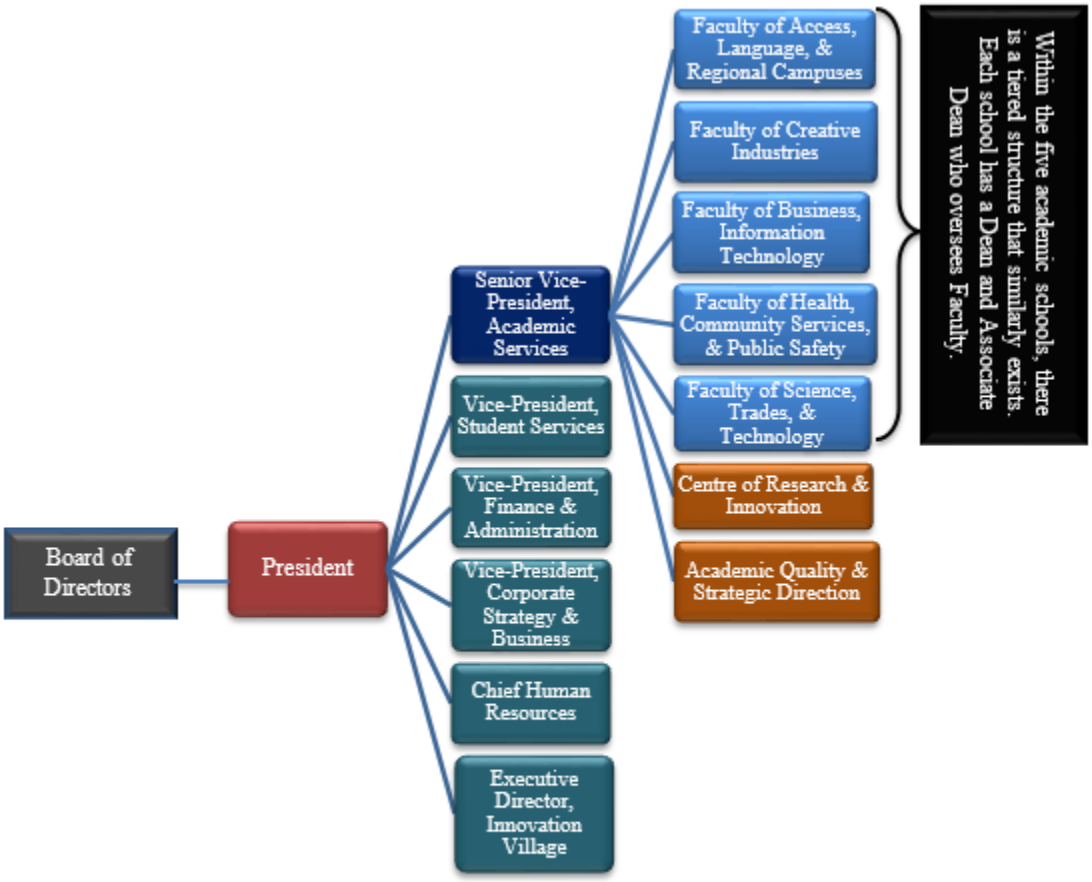

Figure 1. Overview of the executive structure. Emphasizing the Senior Vice-President, Academic Services portfolio overseeing five academic schools, twelve academic departments, and other strategic academic administrative functions at Five-star College.

Leadership Position and Lens

This section of the OIP describes my personal position as an informal faculty leader in relation to the organizational problem that will be under scrutiny. Drawing upon existing approaches of leadership, I emphasize a new leadership approach that emulates from diverse leadership styles in support of cultivating and fostering relationships. Also, included in this section is my philosophical lens and theoretical approach to leadership practice.

Amid the complexity permeating the higher education (HE) environment, I contend, a faculty leader's voice is often unheard by either faculty members or by administrators. At the same time, expectations of college faculty involvement in applied research productivity remain contentious and not well understood. While I am accountable for the academic delivery of diverse courses within my program, I have no direct staff reporting to me. However, I participate in social innovation applied research projects within the community. Nonetheless, I posit much of my ability to secure buy-in and resources for research in the community results from my former roles in health care and solid relationships with industry partners and key internal Executive leaders. As a faculty informal leader who is familiar with both teaching and the skillset to conduct social innovation research, I affirm that cultivating applied research is within the scope of my role and highly dependent on creating capacity through relationships.

Wheatley (2002) asserts that within any organization, real power and energy is generated through relationships that go beyond tasks and positions. Reinforcing this notion, my personal leadership philosophy builds on a deep regard for appreciative relationships and the connections between individuals and organizational learning. This is based on a set of core values that include compassion, collaboration, authenticity, integrity, ethics, and trust. All of these values are contingent upon effective relationships. Therefore, my personal orientation to leadership is a

fusion embodying three approaches. I believe my *servant* leadership (Greenleaf, 1977) attributes supports accountability, and communication, to accomplish Five-star's strategic mandate of achieving a signature research experience for every student, while my *team-based* approach (Larson & LaFasto, 1989) exemplifies collaboration among my peers and the community stakeholders. Finally, my *adaptive* approach personifies coordination that has the ability to influence people and processes to change. To better understand these leadership behaviours, essential attributes of these approaches are highlighted and support the actions required to lead this OIP. These three equally important leadership approaches are defined as follows:

Servant Leadership

Although servant leadership is not clearly defined, the main goal of the leader is to serve through key characteristics such as empathy, conceptualization, stewardship and foresight (Greenleaf, 1977). A central value of servant leadership is its strong human orientation. By displaying authenticity, a faculty leader can improve "direction, building community and thereby equipping others to support collectivity" (Spears & Lawrence, 2016, p. 172). This leadership practice entails attentive listening, thoughtful questioning, empowering individuals and creating opportunities to learn from experiences (Spears, 2010). As a learner myself, I focus on listening first - remaining curious about other faculty members' experiences. Although I agree with Nguyen (2007) who asserts that faculty leaders serve as ambassadors to the college and are responsible for creating classroom environments to empower students to learn essential skills, I am constantly searching for better ways to connect learners to new ideas and experiences with more invigorating pedagogical approaches. This requires communicating and building relationships. Leadership designed on the growth and well-being of others, however, requires the willingness to listen actively and work as a team reinforcing collaboration (Hackman, 1990).

Team Leadership

To support collaboration, individuals require working collectively towards task-related and team-shared goals as represented by the Hill Model for Team Leadership (Kogler Hill, 2019). With this in mind, a collaborative climate requires team leadership in which members can stay problem-focused, listening and understanding one another, while feeling free to take risks (Kraiger & Wenzel, 1997). Yet, as a faculty leader addressing my POP, it is important to acknowledge assumptions, ideological beliefs, and values regarding applied research practices. Overall, this type of leadership is not directive but rather facilitative. To create capacity to work differently, the team leadership approach involves internal and external facilitative actions that are more process-oriented. As such, my internal leadership actions are focused on building relationships with colleagues to address shared tasks and goals, including improving structural and relational functions. This entails what Larson and LaFasto (1989) suggest is effective collaborating, coaching, and modeling between team members. Conversely, my external leadership actions necessitate networking, advocating and negotiating support through shared and adaptive leadership, which are critical for my community research projects.

Adaptive Leadership

To negotiate support within a HE environment that is becoming increasingly complex requires adapting to change rather than "arriving at definite solutions" (Higgs & Rowland, 2005, p. 123). The adaptive leadership approach lends well to addressing complex problems and "doing the adaptive work necessary to achieve progress" (Heifetz, Kania, & Kramer, 2004, p. 24). Consequently, adaptive leadership focuses on the adaptations required of individuals in response to changing environments, where the leader creates capacity to confront tough challenges and succeed (Ford, 2010). Adaptive leadership complements my personal leadership philosophy

which is follower-focused, advocacy-based, and collaboratively-informed. This type of leadership is focused on enabling others and creating capacity to work differently. As a faculty member, the adaptive approach fosters conditions to support engagement with colleagues to undertake problem-solving collaboratively. Moreover, adaptive challenges are also difficult because they usually require changes in individual's attitudes, behaviours, and values (Heifetz & Linsky, 2002). Taken together the attributes of these three leadership styles are weaved together into a dominant personal approach which I envision and labelled Continuous Improvement (CI) Leadership. Therefore, my approach to leadership is informed by servant leadership, team leadership, and adaptive leadership. The CI leadership approach to change is discussed in Chapter 2.

CI Leadership and Theoretical Lens Statement

In alignment with the CI leadership approach, my worldview is best described as a pragmatic-idealist (Dewey, 1957). Albeit pragmatic-idealism is described as a dichotomy, I do not define these terms as absolute nor is one optimized at the expense of the other. In my opinion, being pragmatic and idealistic are not mutually exclusive but complementary components. My pragmatic side was developed over time with my educational experience studying sciences and accounting, as well as working in healthcare as a chartered professional accountant, where value is given to deductive thinking. Conversely, my idealistic side was developed by my faith and working in health policy enduring practical experience with diverse stakeholders to build shared goals or visions using inductive thinking. With this intention, as an informal leader, I believe by taking this approach, I am able to be reflexive and an active participant in the process of change, contributing to social value. From my perspective, the two represent a journey where pragmatism embodies my path and how I navigate to a goal whereas the idealistic denotes my duty and the moral implications of my actions. Together they represent my continuous learning journey.

Overall, my philosophy is greatly devoted to values and draws on Dewey's (1957) and Rorty's (1982) perceptions that reality is not described as static but instead is in a constant flux of change with a strong emphasis on social interaction and relationships. As a systems thinker, I am situated in what Burrell and Morgan (1979) call the functionalist paradigm which takes the positivist position. Albeit systems thinking is an elusive concept that has been described and redefined in many ways, there are common elements that include interconnections, integrative thinking, determining key components, and a shift in mindset by seeing interrelationships between components (Arnold & Wade, 2015). Similar to Zhichang's (2007), I posit systems thinking represents a dynamic web of tensions, reciprocal transactions and transformations, each with differentiation yet connected with some dependency.

Similarly, at the heart of any change is the human actor and systems thinking offers a language that begins by restructuring beliefs and relies on classical inductive/deductive scientific methods requiring both imaginative and analytical reasoning (Flood, 2010). Within this human experience, culture is viewed as a metaphor, constituted by shared mental models through a process of learning (Cabera, Cabera, Powers, Solin, & Kushner, 2018). Suitably, Kraiger and Wenzel (1997) define shared mental models as the collective knowledge of team objectives, roles, behaviour patterns, and interaction patterns. Equally important, Brannick and Prince (1997) define a team as "two or more people with different tasks who work together adaptively to achieve specified and shared goals where a central role of teamwork is coordination" (p. 4). Together, shared mental models provide teams a common language, allowing members to coordinate actions and adapt behaviour to task demands while facilitating information processing (Cannon-Bowers & Salas, 2001).

One conclusion is certain, organizational change cannot be encapsulated by a single

philosophy given a more dynamic, inclusive philosophy is required to adapt to change and tension (Smith & Graetz, 2011). Understandably, my pragmatic-idealist worldview is an opportunity to connect with faculty to better understand core values, beliefs and assumptions. I also recognize as a CI leader working in a complex environment that implementing change is slow and difficult which requires a rational and systems approach for incremental change (Mingers, 2014). This begs the question - what is the leadership problem of practice being investigated?

Leadership Problem of Practice

Ontario colleges are facing increasing pressure to incorporate applied research as part of their academic mandate (Fisher, 2009; Holmes, 2017). However, as a faculty member, I contend that many faculty members struggle to comprehend the meaning and value of applied research as it pertains to their work. Vlaar, Van deBosch, and Volberda (2006) refer to these challenges as "problems of understanding" (p. 1618) rooted in uncertainty associated with differences in expectations, tasks, and contexts. Despite this contradiction and the diffuse structure of power and authority among actors within the institutional culture, Nguyen (2007) claims faculty are key leaders in significantly improving and impacting task-related and team-shared beliefs in research activities. As individuals interact within the context of their political environment and share an understanding of individual tasks and roles, shared mental models can help facilitate informed, accurate explanations and expectations which enable individuals and teams to learn and take appropriate action (Cannon-Bowers, Salas, & Converse, 1993). Yet within HE there is very limited literature on cognitive systems learning within network communities that support faculty participation in research undertakings (Bryk, 2015; Kezar, 2014; Meckler, 2011). We know, however, from the inter-organizational literature that relational leadership, networking, continuous improvement, learning, and shared mental

models can enhance and change organizational performance (Alvesson, 2011; Bryk, 2015; Senge, 1990; Wardrip, 2012; Weick, 2012). Thus, the problem of practice key question to address is: *How can faculty engagement in applied research practices in a large comprehensive Ontario polytechnic college be improved?*

Gap between Current and Future Organizational State

Arguably, influencing applied research practices among faculty within an Ontario college institution is complex, relationship-dependent and multi-dimensional. In Five-star's current state, applied research practice as it is conceived is uncoordinated and dispersed across the institution locally in each of twelve departmental units where faculty participation varies. What is known and offered as applied research practices are mostly focused on prescriptive transactions relating to policy text written in strategic and academic plans. Undeniably, the ideological versus mixed reality debate continues to dominate the engagement discourse leading to confusion given a lack of clear language, policies, and processes to support faculty applied research practices. That said, research practices have also become critical for survival due to unprecedented challenges of reduced funding, and competition to differentiate among other HE institutions (Milian, Davies, & Zarifa, 2016). The next segment of this OIP will situate and frame the problem of practice.

Framing the Problem of Practice

To better understand why Five-star is under increased pressure to incorporate applied research into their traditional programs, it is imperative to understand the College's historical roots and political influences. Accordingly, this section will first trace the ideology of managerialism practices. In addition, diverse policies and artifacts that have shaped the understanding of applied research in the college system are explained using a political frame and symbolic frame. Finally,

this OIP is guided and influenced by social cognition theory and improvement science theory.

Historical Ideology of Managerialism

With increased demands to extend CAAT historical mandates, there has been a dramatic shift in college education in Ontario affected by a desire for knowledge production. Under these circumstances, Ontario colleges have faced increased pressures to strengthen their research function, especially since the federal and provincial governments view research as a source of knowledge and innovation (Capano, 2011; Skolnik, 2013). Similarly, governments have conveyed that colleges should be more strategic and business-like, operating efficiently to meet financial targets (Pollanen, 2016). On the whole, governments have positioned colleges as vehicles of economic development, employing consumer-managerial forms of accountability while advocating direct stakeholder involvement (Austin & Jones, 2016; Holmes, 2017).

To remain viable and sustainable, Five-star College, as a member of Polytechnics Canada, has undeniably taken on the values and ideology of managerial practices promoting and closely tied with the New Public Management (NPM) approach, which promises utopian visions of research generating revenue (Pollanen, 2016). Austin and Jones (2016) proclaim NPM as a style of governing and managing that takes a top-down management approach and utilizes hegemonic practices that promote "business-like management, client-centred and market-like competition" (p.171), supporting managerialism.

As a result, leaders are expected to align with managerial practices that have shifted in favour of private enterprise for competition for resources as well as priorities for productivity and outputs of research initiatives. This ideology and tight hierarchical control of work processes has resulted in organizational change which has challenged the existing values of faculty (Aucoin, 2012). These values are further evaluated through frames that offer a different

way of diagnosing a problem (Morgan, 2006).

Political and Symbolic Frames. Bolman and Deal (2017) outline four frames which offer a window for understanding complexity. The four cognitive frames are structural, human resources, symbolic, and political. I have chosen to examine the central elements of the political frame and the symbolic frame which the authors argue are the most significant frames through which to examine a leader's power. When considering the context of Five-star, the political frame helps us to understand the policies, conflicting competing values, and interpretive power that have affected the College's mandate towards applied research practices. Similarly, applying the symbolic frame assists us in gaining a deeper understanding of the key artifacts used to shape and direct applied research practices. In view of the traditional College strategy, these frames help diagnose complex factors that have emerged both at the system and institutional level.

Political frame. Within the knowledge economy, applied research has been a recurring and aggressive policy focus at the federal, provincial and institutional level (Jones, 2004; Fisher, 2010). The changing environment in college education has been mainly prompted by new policies that promote applied research as a strategic catalyst to further economic and social development (Holmes, 2017; Rosenkrantz, 2013). In efforts to attain financial savings and economic stability, the provincial government introduced Bill 26, the Savings Restructuring Act, 1995, which reduced government public transfers to colleges (Bezanson & Valentine, 1998).

Subsequently, a series of policy shifts occurred in 2000 and 2002, providing colleges autonomy to pursue new revenue streams in a competitive economic market (Jones, 2004). First, the Postsecondary Education Choice and Excellence Act (2000) authorized colleges to offer post-graduate certificate programs, three-year advanced diploma programs, and similar to universities, four-year applied degrees (Government of Ontario, 2000). Secondly, changes to the OCAAT Act,

2002, mandated colleges to increase their applied research activities (Holmes, 2017).

Within these policy reforms and with an emphasis on public service and economic objectives, the OCAAT Act changed governance arrangements setting out principles and expectations for colleges to become more entrepreneurial, market-driven and research-oriented (Government of Ontario, 2002). Moreover, while the OCAAT Act allows colleges to pursue research activities to differentiate themselves, fund transfers from the government do not include distinct envelopes for research (Government of Ontario, 2002). Consequently, apart from competing for external research grants, currently there is no consistent internal allocation of resources or processes for research activity (Colleges Ontario, 2019). Similarly, the competitive political transformation reinforcing research in Ontario colleges has not correlated with improved advancement in operational funding nor clear processes for faculty (Madder, 2005).

Symbolic frame. Bolman and Deal (2017) claim the symbolic perspective generates an understanding of values among people who share a culture. Comparatively, Schein (2017) views culture at three abstract levels: observable artifacts, values, and underlying assumptions - whereby assumptions determine employees' psychological reactions and behaviours at work. In this regard, culture acts as a control system that defines acceptable and unacceptable behaviours, attitudes, and values (Cawsey et al., 2016).

Arguably, one of the most difficult challenges facing a CI leader striving to engage faculty in applied research is comprehending the underlying values and congruency of shared, moderately stable forms of artifacts which ultimately influence and guide organized action. This change approach is unlikely to be straightforward but instead iterative as it requires understanding agents' interests, culture, and cognition. Mohammed (2001) contends that culture and cognition cannot be separated since agents reside in complex environments where the cognitive capacities of

different cultures and subcultures influence social learning among individuals.

Manning (2018) claims that supportive cultures provide artifacts that allow individuals to derive meaning from their work and contribute to teamwork. From my perspective, the symbolic artifacts that carry the most value and meaning for faculty work include the CA and the Standard Workload Formula (SWF). The SWF is a formula unique to all twenty-four Ontario colleges and is governed by the CA. Both artifacts are visual and inform faculty of their performance expectations. Although the CA is negotiated provincially between the College Employer Council for the CAAT and OPSEU, the CA does not address the instructor's duties and responsibilities as they relate to applied research practices. Consequently, the absence of language in the CA and the corresponding space in the SWF to conduct applied research has led to mixed messages.

Conversely, the SWF, is a documented workload that is negotiated each semester between the Associate Dean and faculty. However, the SWF lacks language related to applied research and is dependent on whether or not the faculty receives external grant funding. Moreover, Rosenkrantz (2013) posits that there are no clear processes or formal organizational processes in place for SWF release time to support faculty to engage in research activity, leading to inconsistency and fragmentation in communication and work outcomes across the College. Bolman and Deal (2017) argue "that in the face of ambiguity, artifacts arise to help people resolve confusion" (p. 242). Yet, a complex issue for Five-star is that their most symbolic artifacts have not set expectations and unfortunately generated confusion for faculty to engage in applied research. As a result of diverse policy influences and confusion with symbolic artifacts, key organizational theories to guide, influence, and understand the need for change are outlined.

Key Organizational Theories

Undergirding this OIP is social cognition theory and improvement science theory. Taken together, these theories are intended to align with systems thinking and are a step toward a holistic understanding of the dynamics of a learning culture.

Social Cognition theory. Social cognition theory is closely connected to self-efficacy theory or organizational learning theory, in that individuals learn by doing or acquire new knowledge and behaviors by collaborating with others (Bandura, 2001). To learn and change, however, "organizational members must be skilled in understanding the assumptions, frameworks, and norms guiding current activity and be able to challenge and change when necessary" (Morgan, 2006, p. 89). Crucial to this endeavour is nurturing and sustaining a professional culture of continuous improvement and learning (Fullan, Rincón-Gallardo, & Hargreaves, 2015). Schön and Argyris (1996) outline three levels of organizational learning.

- Single-loop learning is frequently associated with first-order change and rests in its ability to detect and correct errors in relation to a given set of operating norms;
- Double-loop learning is associated with deep-order or second-change and requires more complex questioning and reformulation of relevant norms, values and beliefs; and
- Deutero-learning involves behavioural adaptation and the process of collaborative inquiry and reflection that is primarily unconscious behavioural-communicative learning.

Thus, social cognition theories are focused on changes occurring within the mindset of individuals through learning (Kezar, 2014). For faculty, however, to engage and implement applied research practices requires understanding underlying values, assumptions, structures, and processes for change to occur (Fiske & Taylor, 1991). This process is unlikely to be linear as "people need to understand the nature of the change while reconciling new ideas with their old

mental models" (Kezar, 2014, p. 161) to a shared mindset among team members.

While there are many benefits associated with social cognition theory, there are also limitations and difficulties to operationalize the theory on its own. One of the limitations is that the theory tends to be too broad and assumes changes in the environment will automatically lead to changes in the person (Hatemi & McDermett, 2012). Another limitation is that the theory highly depends on the dynamic interplay between personal factors, behavior, and social environment, known as reciprocal determinism (Bandura, 2001). Therefore, it might be more accurate to accept that individuals' cognitive abilities and behaviours are influenced by biological, hormonal or genetic differences (Hatemi & McDermett, 2012).

Improvement science theory. Using systematic methods and theory, improvement science (IS) proposes a scientific lens to bridge the context of discovery and human experience in the real world and the context of justification based on best practices (Reed & Card, 2015). IS or continuous improvement (CI) as it is progressively being termed in education has been used extensively in health care and industry (Moen, 2009). In 1996, a group of quality improvement specialists helped define the theory of IS and became the first to use the phrase "science of improvement" (Langley, Moen, Nolan, Nolan, Norman, & Provost, 2009).

Currently, the Carnegie Foundation for Advancement of Teaching is challenging education leaders to revamp and cultivate methods for improving quality and productivity using IS/CI in diverse educational settings (Bryk, Gomez, Grunow, & LeMahieu, 2015). The pragmatic CI approach is designed explicitly to accelerate learning that is iterative in nature and relies on repeated evaluation, reflection, and adaptation. Particular emphasis is placed on knowledge building and illuminating approaches for learning by understanding variations in practice with an emphasis on process improvement rather than a focus on outcomes (Bryk, 2015).

There are, however, some limitation of IS theory. IS theory assumes that organizations can move towards stability and equilibrium through a systems approach (Berwick, 2003). A limitation, therefore, of IS theory is its struggle to separate organizations from their environments. Consequently, if change managers are tasked under IS theory models solely to encourage equilibrium, then they need to be able to distinguish clearly the boundaries of their organizations and map the effects of change interventions which will impact individuals and teams differently (Smith & Graetz, 2011).

Together, social cognition theory and IS theory offer possible insights into some of the ontological bases for individual differences and organizational contexts and tasks processes. Collectively, both theories provide "just the kind of reciprocal interaction increasingly common in scientific models of complex human behaviour" (Hatemi & McDermett, 2012, p. 310) that may assist a change leader leading from the grassroots. Jointly, social cognition theory and improvement science theory lend well to facilitate change through organizational learning, quality improvement, social network analysis and organizational culture consensus (Fiske & Taylor, 1991; Kezar, 2014). However, there are evolving sub-questions that arise when addressing strategies that might influence applied research practices among faculty to cultivate an improving, learning, and a changing culture within a large-sized Ontario polytechnic institution, which are highlighted in the next section.

Guiding Questions Emerging from the Problem of Practice

Given the confluence of increasing factors, three key challenges and guiding sub-questions emerge from the POP and focus on how communication, collaboration and coordination might be fostered to generate improvement in faculty engagement.

Challenge 1: Improving through communication

For college faculty, understanding the meaning of applied research continues to be a core issue, necessitating more clarity (Skolnik, 2013). Conversely, improving performance excellence in research is achievable only if individuals can rely on the best possible common language and support mechanism that provides the right synergy (Shirey, 2013; Taylor, 2009). As a starting point, there are two definitions of research which are used to understand the systematic effort to increase knowledge in an area, namely:

Basic research. This consists of theoretical or experiential work with objectives to acquire new or increased knowledge in an area. This type of research is exploratory, and uses different research applications that may result in disruptive innovation, which traditionally has been in the university purview (Haimowitz & Munro, 2010);

Applied research. This consists of concrete and practical objectives and is usually conducted to resolve a community, public sector or business issue/problem which may obtain new knowledge to increase competitive and organizational effectiveness. It is most often conducted in colleges and polytechnics (Haimowitz & Munro, 2010).

Faculty, however, hold contrasting perspectives of the purpose, value, and desire of performance of applied research, including their relative role in the process. To improve communication and language leads to the first emerging question: *What is the definition of applied research and why is its meaning important given the changing context?*

Challenge 2: Learning through collaboration

Learning involves understanding changes in the external environment and how individuals and organizations through their internal relationships have adapted to the external changes (Schein, 2017). Learning then becomes a shared responsibility and

requires leaders at all levels to better understand values at the individual and collective level. At the individual level, personal values are cognitive representatives of the broad goals that motivate the beliefs and behaviour of individuals (Schwartz, 1999). On the contrary, at the collective level, values are embedded into the cultural fabric of the organization by which groups function in completing their tasks (Schein, 2017). Thus, the second question emerging from the POP is: *What are some of the underlying held values and beliefs of faculty and why do these cause barriers for faculty to undertake applied research?*

Challenge 3: Changing through coordination

Change is pervasive and exists at every level – individual, departmental, and institutional (Waks, 2007). At the same time, beliefs can be different among individuals and departmental groups. Kezar (2014) postulates to address change we must learn to become aware of our own and others' mental models which can shape the possibilities for learning and offers a number of approaches and mechanisms for creating second-order change through sensemaking or organizational learning. This calls attention to creating space for deeper change to resource mobilization, improve participation, consensus, and program alignment of research within the College's culture using informal networks. This leads to the third question - *How might a faculty leader promote a shared mental model to influence applied research behavior and integration efforts across units?* Addressing these questions requires leadership inspiring a vision, uncovering values of individuals, and change readiness.

Leadership-Focused Vision for Change

The leadership-focused vision for change imagines an envisioned state at Five-star where faculty are engaged and enact applied research practices with appropriate training, support and infrastructure to meet diverse and changing student needs and expectations. This vision,

however, is predicated on addressing gaps, change priorities, and drivers with achievable approaches. This section highlights the gap between current and envisioned future state while promoting a leadership-focused vision for change that addresses priorities and external drivers facing individual and organizational stakeholders' interests.

Gap Analysis: Nadler and Tushman's Open System Congruence Model

A foundational model for addressing the gap between current and envisioned state is Nadler and Tushman's (1980) open system congruence model. This pragmatic model is also aligned with systems thinking and based on evaluating a comprehensive picture of an organization, and the congruence between four elements, namely: task or work of the organization, people, formal organization, and informal organization (Nadler & Tushman, 1980). Arguably, this congruence model is helpful in many ways to my POP as it offers important insight to address organizational change, with a specific focus on *faculty* behaviour. That said, to successfully effect strategies to influence applied research practices among faculty and cultivate a CI, a learning and change culture depends upon system congruency between four core elements. Articulated below are gaps between present and envisioned future state balancing interests.

Current state (Task). The first element is the *task* to be completed by the organization and its subunits in alignment of its organizational strategy (Nadler & Tushman, 1980). Similar to other Ontario colleges, Five-star operates in a fiscally constrained and regulatory environment. Given the delivery of programs of instruction is Five-star's core business, the specific task/work functions are outlined in the Ministry's Binding Policy Directives that are established and governed by the OCAAT Act, 2002. Accompanying these directives are the funding and terms for the College to meet provincial economic and community societal priorities (MTCU, n.d.). Program standards apply to each of Five-star's programs of instruction and include: "vocational

learning outcomes (VLOs), essential employability skills (EESs) and general education as outlined in the Credentials Framework set out by the Ministry" (MTCU, n.d., p. 1). A key task, therefore, for faculty serving as ambassadors within their discipline is ensuring students assuredly display the attainment of the VLOs and EEEs before they graduate. The summary of work responsibilities by the Ministry and Five-star is clear. What is lacking for faculty is the language, infrastructure, and processes within this accountability to continuously meet all criteria as well as undertake applied research in course and curriculum development teaching work.

Envisioned state (Task). Although mental models are rooted in individual thinking, they can also be shared (Kezar, 2014). To enhance Five-star's capacity in research activities requires a paradigm shift to learn through collaboration and practice, which studies suggest may be supported through network improvement committees (NICs) (Reed & Card, 2015). NICs are a consortium of professional improvement members socialized to address practical problems while building capacity to change education systems and sustain systemic change through iterative, collaborative design, testing, and improvement (Dolle, Gomez, Russell, & Bryk, 2013). Thus, an innovative but achievable change for addressing the POP necessitates that an academic faculty leader engage with NICs and take purposeful collective action to support a change management plan that addresses efficacious strategies to improve research practices.

Current state (Faculty). The second element involves *faculty* who perform *organizational tasks* and their key knowledge, skills, and characteristics that may influence their behaviour (Nadler & Tushman, 1980). Most of what is known about college faculty is anecdotally derived and more importantly, what others think it means, is often opaque (Evans, 2017). As with the environment, the relationship between teaching and research is complex and multi-faceted. Both terms are also extremely difficult to measure. Rosenkratz (2013) contends unlike universities

that may have tenure faculty with split-time between teaching (40%); research (40%); and community service (20%), colleges full-time faculty have higher teaching loads and currently receive no remuneration specifically related to conducting research. Instead, college faculty often use their own free time to conduct research (Fisher, 2010). Nevertheless, studies of the relationship between teaching and research reveal that overall there are benefits to students, professors, and the HE system as a whole from the teaching-research 'nexus' (Boyer, 1990; Nguyen, 2007). 'Nexus' is a term to represent any aspect, belief, or relationship between the nature of knowledge and learning that academic staff operationalizes when approaching their teaching and research functions in a scholarly manner (Trowler & Wareham, 2007). Nguyen (2007) argues that teaching should not be seen as an activity separated from research but that teaching and research co-exist and interrelate to one another in the act of learning. Conversely, to enhance the relationship between teaching and research, Gibbs (2002) advocates that faculty require clear articulation and understanding of tasks, structures, and appropriate resources. Without clarity of tasks, faculty resistance to engage in applied research practices will persist.

Envisioned state (Faculty). The tasks of teaching and research, therefore, cannot easily connect in simple fusion given their dependency on institutional policies, structures, and resources. In addition, there are dynamic aspects involved in organizational tasks and applied research is not an isolated process with a clear beginning and end. Thus it is envisioned that on an individual level, faculty leaders be engaged to build an institutional commitment to research activities by being involved "in the diagnosis, interpretation, and the remediation of change challenges" (Armenakis & Harris, 2009, p. 130). This increasing presence of faculty working collaboratively on aspects of shared learning may generate greater understanding and commitment to change.

Current state (Formal organizational arrangements). The third element is *formal organizational arrangements* which include the College's structures, processes, and procedures that are utilized to meet organizational objectives (Nadler & Tushman, 1980). The two most significant formal organizational structures for governing the processes for faculty meeting organizational objectives are the CA and the SWF. Currently, administrators utilize the CA as a means to address workload duties for faculty. Within article 11 of the CA, faculty total workload assignment is not to exceed 44 hours in any week. The specific tasks and workload factors include teaching scheduled working hours, attributed hours for preparation, evaluation, feedback, and complementary functions which are detailed on the faculty's SWF (OCAAT, n.d.). The formula also takes into consideration whether the faculty is teaching the course for the first time or not which is subject to a lower nominal value. The SWF, however, does not rely on a precise measure of the workload at a discipline level, rather it focuses on capturing relative averages across disciplines. Nor does the SWF factor into variable conditions occurring each semester. For instance, not all research that is undertaken by faculty is identified on the SWF workload.

Envisioned state (Formal organizational arrangements). A foreseen goal of the faculty leader is working with key agents in reviewing current structures and processes, such as the CA and SWF, to better understand the appropriate language that will support applied research. This will represent a significant learning curve that requires buy-in from diverse levels of leadership within the institution that supports a common language for applied research.

Current state (Informal organizational arrangements). The fourth element is *informal organization arrangements* that are usually implied that emerge as part of the organization's performance (Nadler & Tushman, 1980). Given the association between economic activity and knowledge, applied research is a central theme across Five-star's three SMAs and is deemed to

be an essential component of programs. The tension lies with the past versus present and the discourse between traditional mandates and current external change driver realities.

Envisioned state (Informal organizational arrangements). The attributes of these change drivers envision a faculty leader to participate in the change implementation process. The focus, therefore, will be on learning and understanding change at an individual and organizational level. This, however, requires attending to internal cultural artifacts that sustain beliefs, attitudes, and values (Rafferty, Jimmieson, & Armenakis, 2013). Moreover, this change requires sifting through external multiple and conflicting political messages to focus and create successful collaborative efforts (Kezar, 2014). This vision for change and the need for change, therefore, are closely interwoven and rely on balancing stakeholder and organizational interests.

Stakeholder and Organizational Interests Influenced by Drivers

Stakeholders are individuals or organizations that have a vested interest in the problem. They are either affected by, or can have an affect on, the outcome. There are a number of key external and internal stakeholders that have a vested interest in achieving faculty engagement in applied research practices, including governments, administrators, faculty, and students, but there is an imbalance of shared oriented values. Holmes (2017) asserts college applied research activities have become increasingly valued by both provincial and federal governments, particularly in relation to commercialization associated with small and medium size enterprises who have become key contributor's to Canada's economy. Moreover, in alignment of the government's recent strategic mandate to meet community, economic, and skills priorities, administrators within the College value enhancing research and innovation learning experiences for students. However, there is an assumption that faculty, who value teaching, are in a state of readiness to engage in applied research, have continual access to research funds to achieve

institutional research expectations and individual normative/social behaviour (Haimowitz & Munro, 2010). Similarly, there is a supposition that students have equitable access to coordinated research activity within departments, engaging with external local firms, by treating them as one homogenized group, without considering their unique teaching and learning needs.

At the same time, a significant driver for change is the provincial differentiation agenda and performance-based funding allocation tied to institution-specific economic impact metrics identified in the SMA. However, the most significant driver for Five-star is meeting the skills and economic outlook priorities mandated by the MTCU. Appendix B highlights antecedent drivers a faculty leader is anticipated to address for applied research change that include social drivers, technological drivers, economic drivers, political drivers, legal drivers and ethical drivers (STEEPLE) necessitating an effective readiness plan for leading the change process.

Organizational Change Readiness

Readiness for organizational "change is a complex multi-dimensional construct that includes behavioural and operational factors at both the individual and organizational level" (Holt, Helfrich, Hall, & Weiner, 2010, p. 51). Arguably, "readiness is one of the most important factors involved in employees' initial support for change that occurs within an organization's culture" (Armenakis & Harris, 2009, p. 234). As Five-star initiates to engage in a change process towards increased applied research and determine its state of readiness, a faculty change leader will need to first examine the variation of change and best approach to adopt.

Change from this perspective involves a deliberate approach to assessing the influential conditions within the organization to generate a future state (Uhl-Bien & Arena, 2017). Holt et al. (2010) propose readiness before the introduction of change, especially since readiness is a "precursor of resistance and adoption behaviours" (p. 52). Similarly, Armenakis and Harris

(2009) suggest an assessment of readiness before any change occurs and devised a three-step framework in the change chain process, namely: "diagnosis, creating readiness, and change adoption and institutionalization" (p. 129). Consequently, these steps are used to examine Five-star's readiness for change that strives to balance values, internal, and external competing forces.

Diagnosis of the Organization

The first step in any change problem is the diagnosis and determining 'what is' the issue and/or root causes of the symptoms (Armenakis & Harris, 2009). To ensure appropriateness and accuracy of diagnosis, Holt, Armenakis, Field and Harris (2007) suggest evaluating attitudes and beliefs which are influenced by four factors, primarily: *context* – change situation; *content* – change factor; *process* – change plan and; *individual* attributes – cognition characteristics. Therefore, considering these factors, imbalance of shared oriented values, and Five-star's organizational change readiness, it is essential that competing internal and external forces that shape change be assessed through the political, cultural, and social-cognition lenses.

Political lens. Legislative changes since 2000 marked a significant confluence shift in operational structure and processes along with psychological attitudes given the College gained control over their balance sheet. To ensure social approval, legitimacy, and survival, Five-star has become congruent with their institutional context making an explicit strategic mandate to improve applied research outcomes. Policy as an external force, is therefore seen as a key to studying organizational conflict and change. Within this political process, Baldridge (1983) points out that consensus is easy when goals are broad and disagreement commencement when those goals become specific. In evaluating the mandate of applied research, there is currently conflict over the values. That said, the potential of achieving common values relies on collective strengths which takes into consideration cultural context that is anchored in social patterns.

Cultural lens. Readiness within Five-star's culture requires understanding, willingness and capability to change at an individual and organizational level. In this regard, the power of culture lies in its capacity for social capital to bring people together to determine gaps and overcome obstacles by addressing competing internal forces collectively (Glor, 2007). At the most fundamental level, culture is manifested at the assumption level and is not recognized unless challenged by incompatible or contradictory assumptions (Schein, 2017). Cultivating a culture of applied research, therefore, is not a simple phenomenon as it requires comprehending what factors shape and change a culture which is rooted by languages, beliefs, values, norms, and other social practices that ultimately influence and guide organized action (Manning, 2018).

Social cognition lens. Social-cognition of change is tied into learning and mental processes such as shared team tasks and shared goals (Weick, 2012). The primary assumption is that "change can be understood and enacted through individuals by their thought processes, given people are trying to continuously make sense of their world through cues and retrospection" (Kezar, 2014, p. 30). At present, the value system of faculty within Five-star does not align with the organization's mandate of applied research, which has led to resistance given individuals are not sure how to incorporate the change into their daily work. Arguably, understanding the motivation to change and recognizing that most change factors lie hidden below the surface suggests an alignment of values (Buller, 2015). Therefore, a faculty change leader is encouraged to formulate a team to enhance systems thinking through learning and facilitating interaction to encourage deeper sensemaking (Kezar, 2014). Unpacking 'the understanding' of these political, cultural, and cognitive changes at a practical, organizational, and system level impedes change readiness unless there are clear communication and processes in place to address the change, as well as, dealing with faculty resistance to change. To address

the lack of engagement with faculty to enact applied research practices, it is suggested faculty be part of the diagnosis and the communication change processes (Bryk, 2015). Disputably, the diagnosis can help to create readiness and adoption to change.

Creating Readiness

To reduce uncertainty and ambiguity for effective planned change, Armenikas and Harris (2009) suggest that key messages be formulated by addressing *five key beliefs* that are internal enablers to influence change. These include: (a) discrepancy – belief that change is necessary; (b) appropriateness – belief that the change is aligned and accurate; (c) efficacy – belief that the change is implementable; (d) principal support – belief that administration is committed to success; and (e) valance – belief that the recipient benefits from the change (Armenikas & Harris, 2009).

An effective and ethical model for readiness that has been embedded in several change management processes is Lewin's Theory of Planned Change (1947). Kurt Lewin, a social psychologist studied group dynamics and group behaviour and perceived change as an adaptation of opposing and competing internal and external forces within a system. Lewin (1947) created the Force-Field Analysis to examine opposing forces that influence a situation and whether a goal can be achieved. To change the forces, you must either increase or decrease the forces. The competing forces identified in Appendix C identifies the driving and restraining forces (Lewin, 1947) impacting the change plan which helps better understand the impact of change at Five-star.

Change Adoption and Institutionalization

Undeniably, any change should be guided by adherence to ethical principles (Ciulla, 2013). Given "organizational change is very complex" (Armenakis & Harris, 2009, p. 135), a change leader's best approach to adopt is one that is aligned to support individual and organizational members. Inevitably, when individuals lack information, resistance to change occurs (Stevens,

2013). Therefore, a change leader who characterizes trust and respect promoting information and open discussion about change will help enhance positive emotion (Rafferty et al., 2013). Similarly, Cawsey et al. (2016) asserts a "change leader's credibility is crucial" (p. 116), all of which is important for a leadership approach to change for this POP.

Moreover, a change leader will also need to understand how structures and systems facilitate or hinder change, or alternatively be used to gain approval or create more adaptive conditions (Glor, 2007). Since Five-star operates in a hierarchical and bureaucratic structure, the chain of command, departmentalization of tasks and work differentiation will all be factors which the change leader, as a facilitator, will need to consider given decision-making is highly dependent on rules, policies, and procedures that may hinder the change process. This is especially important to consider for the OIP's implementation plan phases.

Conclusion

Chapter one provided a broad overview of the organizational context and the problem of applied research practices facing Five-star. The leadership position, problem and emerging sub-questions, framing, as well as the vision and organizational readiness for change delineated in this chapter assist to inform the leadership framework for approaching and leading change. Overall designing a change path that devises continuous improving and learning may increase the commitment of individuals to adapt and change. By the same token, Kouzes and Posner (2002) purport adoption and implementation of change is affected by a commitment to change influenced by leadership. Therefore, fostering acceptance to proposed change requires an exemplary leadership approach to change. The next chapter focuses on a leadership framework for undergoing change, supported by an analysis of organizational information before determining the best change path.

CHAPTER 2: PLANNING AND DEVELOPMENT

Leadership Approach to Change

Chapter 2 describes components for planning and developing a framework for change. It presents the continuous improvement leadership approach and highlights Lewin's (1947) 3-Step Change Process combined with the Carnegie Foundation's Six Core Principles of Improvement Framework (Bryk, 2015) for leading the change process. In addition, an organizational analysis to diagnose and assess the change, as well as possible solutions to address the problem of practice are explored. The chapter concludes with ethical considerations for change.

Continuous Improvement (CI) Leadership

To catalyze change and engage faculty to enact applied research, it is essential to embrace a multi-dimensional leadership approach that reflects the institutional priorities and context of Five-star. As identified in Chapter 1 of this OIP, the continuous improvement (CI) leadership approach combines the attributes of a servant leader (Greenleaf, 1977), team leader (Kogler Hill, 2019), and adaptive leader (Heiftez, 1994). Combining these three models, the CI leadership approach builds on Hollander's (1964) focus on leadership as a relational process given the emphasis on sensemaking, learning, and cognition of individuals.

The ultimate focus of the CI leader, therefore, lies in the relationships between individuals, groups, and the wider network that supports improving, learning, and changing through an emergent adaptive approach. I maintain that it is not easy to lead in this way, as it must take into consideration cognition and culture, which cannot be separated, since "culture influences individuals' cognition" (Morgan, 2006, p. 141). Although this leadership approach is not explicitly tested, in an effort to engage and influence faculty, the CI leadership framework provides a CI leader working at the grassroots confidence to engage in collaborative synergies for improvements.

In Figure 2, I illustrate the CI leadership framework which consists of a 3-level leadership matrix that helps explain the focus on relationships and working with others towards outcome-specific goals and values. The CI leader, in this case, would possess the characteristics of servant (Greenleaf, 1977), team (Kogler Hill, 2019) and adaptive (Heifetz & Linsky, 2002) attributes to support the OIP implementation by addressing the relationship of antecedent conditions, accompanying behaviours and outcomes. I argue that the combination of these key CI leadership attributes is important for leading the OIP and improving the engagement of faculty to help diagnose barriers and expend appropriate action to improve applied research practices. Consequently, this type of leadership focusses on forming and sustaining relationships in which improving, learning, and changing are deemed key outcomes for adaptability in a hierarchical and bureaucratic structure (MacLean, 2020).

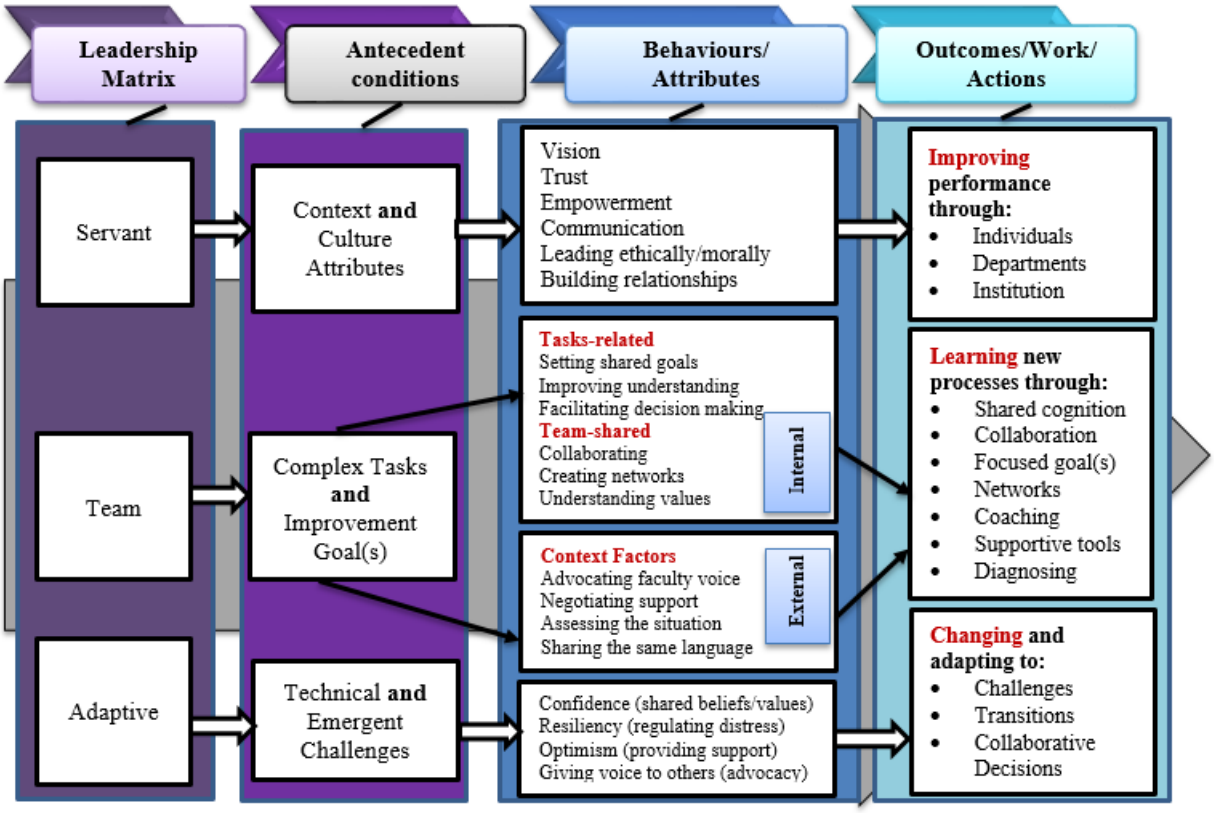

Figure 2. Continuous Improvement (CI) Leadership framework proposed for Five-star (MacLean, 2020).

Strengthened by a set of simple principles including improving through communication, learning through collaboration, and changing through coordination, the goal is leading realistic change. As a CI leader, working at the grassroots level, I am focused on building respectful, trusting 'spaces' for staff to be heard while collaborating to create a stronger understanding of the change. There is no 'one size fits all' in higher education and the intention is to be straight-forward and focused on 'real world' tasks, customized to each participant's learning needs.

The emphasis is on collective learning and continuous improvement through a developmental learning journey built on relationships that are continuously evolving. Bass (1999) argues that "we must see power and relationships as not things - but as relationships" (p. 21). What Bass (1999) asserts is that we must understand and analyze power in relation to what motivates individuals and what human and resource constraints exist. By building relationships, I contend the CI leader possesses influential power by way of understanding the motivation, resources, and the capacity to influence change in attitudes and behaviours of other faculty through modelling and interaction (i.e., leadership as influence).

Arguably, the underlying framework of a CI leader is best understood by examining the three multi-dimensional leadership approaches that have come together to form this relational leadership style. A CI leader possesses *servant* qualities where the primary focus is on service itself and demonstrated by investing in relationships and people over tasks (Greenleaf, 1977). In this case, as a servant leader, I contend that organizational goals will be achieved by strengthening the relationships and well-being of the people who comprise the organization (Greenleaf, 1977; Gregory Stone, Russell, & Patterson, 2004). A CI leader is also a *team* leader by way of concentrating on what motivates faculty to change. As a team leader, my motivation for change is in the interest of achieving collective good that places learning at the centre

(Schein, 2017).

This relies on sharing information in an inclusive and consultative manner, engaging faculty with the vision and determining what their role would look like in the future (Kogler Hill, 2019). Alternatively, an adaptive leader offers a perspective to differentiate between technical problems and more complex, underlying emergent problems (Glor, 2007). This engagement approach enables faculty who conduct the tasks to figure out and address solutions in their own way of working (Heifetz & Linsky, 2004).

Achieving sustained change in Five-star's culture requires a holistic approach targeted at faculty as well as organizational systems that shape how faculty act and behave at work. In view of the change, and the possible resistance from faculty, a CI leader (working on the grassroots as a faculty) has the ability first hand to determine and identify how emergent changes are currently occurring. In this case, the CI leader has the power to influence the central issues that faculty disagree about, and act with courage to ask key stakeholders who are most likely to influence an effective outcome to work collaboratively. Accordingly, working from the bottom-up, the CI leadership approach integrates a collaborative, team-oriented, and adaptive perspective to achieve incremental change. At the same time, a CI leader requires a relevant change management framework to lead organizational change which is discussed in the next section.

Framework for Leading the Change Process

While it is important to have theoretical and leadership perspectives to think differently and understand change, it is also critical to have analytical approaches and strategies to affect change. This section will define change and diverse classifications of organizational response to change as well as compare and analyze relevant models prior to identifying the specific framework for leading the change as it relates to the OIP.

Understanding and Defining Change

Responding to the needs of a knowledge-based economy, including the provincial strategic mandate to differentiate, Five-star's context has changed since its inception of 1967. However, what is meant by change and what planned change process an informal CI leader can use to address the problem of practice (POP) is not well understood. Change is not a singular concept and considered multi-faceted (Jalagat, 2016). Buller (2015) defines change as replacement and resilience since it has no beginning, middle or end as it is continuous and sometimes triggers other change. Hence, for Buller (2015), change is a process, not a point of time or a single event. Kezar (2014), however, defines change as a combination of "isomorphism, adaptation, organizational change, and innovation or reform" (p.12).

Change can also be categorized as either *first-order* which involves incremental or alternatively *second-order* which entails fundamental transformational change (Jalagat, 2016). Considering Chapter 1 focused on "why" a change is required to engage faculty to enact applied research practices, this leads to the question of "what" and "how" a CI leader working from the grassroots level will implement meaningful and realistic change. This takes into account the unique context, content, and culture of Five-star in which a CI leader is operating. Similarly, Waks (2007) argues that a common mistake made by leaders when contemplating change in a systemic way, is not realizing the important differences between first-order and second-order change and methods to approach the change process within the various levels of the system.

Although, this POP deliberates both first-order (incremental) and second-order (transformational change), a CI leader working at the grassroots level with other faculty and students should consider diagnosing and understanding the change that is required before mobilizing, aligning, energizing people for action - which is highly dependent on first-order

change (Kezar, 2014). In this regard, incremental change includes small variations to improve the current situation which involves culture, cognitive, political theories to map support across departments (Kezar, 2014). Conversely, transformational change includes a radical, deeper change that is more complex, as it involves individuals challenging existing assumptions and beliefs in order to align with the environment (Jalagat, 2016). Nevertheless, a change plan may be especially hard to implement if employees perceive the incremental and transformational changes in contrast to the individuals' and organization's values. Consequently, considering the change related to the POP, the most significant and developmental change an informal CI leader can make will be at the first-order incremental level, which follows a rational and continuous improvement method at the individual and group level.

Relevant Types of Organizational Change

Five-star also encounters different types of organizational change that are influenced by both internal and external factors and forces. Storberg-Walker and Torraco (2004) postulate *factors* include: "organizational leadership and governance structures, diverse stakeholders and constituents, and culture" (p. 37). Similarly, three major *forces* for change include: "fiscal and budgetary constraints, growth and information technology, and market forces with the resulting measured competition for students" (Storberg-Walker & Torraco, 2004, p. 37).

At the same time, as an informal CI leader, I recognize the confluence of forces that have resulted in three types of changes that affect the mindset of individuals as suggested by Buller (2015). First, this includes *reactive* changes "that are forced on them" (Buller, 2015, p. 157) which are external factors beyond the institution's control, and results in organizations experiencing influential change. For instance, the Ontario college system's response to applied research practices was reactive when the Ontario provincial government passed two pieces of

legislation that directed the role and function of the college sector: The Post-secondary Education and Excellence Act, 2000; and the OCAAT Act, 2002. Taken together, these legislation changes marked a significant confluence shift in operational structure and processes along with psychological attitudes given colleges obtained control over their financial position.

Alternatively, *proactive* change involves transformations "eventually being forced on them" (Buller, 2015, p. 157) challenging trust between faculty and administration at the departmental level. Finally, *interactive* change involves alterations "that are needed because of internal rather than external factors" (Buller, 2015, p. 157). I believe I will be able to exert more influence over interactive change given my position as faculty over classroom research activities, and my personal power to connect and influence other faculty, administrators, and students to address innovative ideas through collaboration. In this case, supporting and coaching the learning process of change with constituents by listening, learning, communicating and building commitment. In Chapter 1, I suggested using network improvement committees to create informal learning opportunities as a way of building commitment at an individual and departmental level. As a CI leader, valuing social responsibility and compassion for other faculty, students, and administrators, I recognize that networks and relationships are an important key lever for incremental change (Kezar, 2014). Moreover, these networks create professional capital by way of co-creating and co-learning that supports and strengthens accountability (Fullan, 2016).

Relevant Framing Theories

Buller (2015) posits that the more complex institutions become, the more sophisticated leadership must develop in addressing change. The changes for this OIP require an explicit open-system perspective that involves a holistic approach. Consequently, I considered two action-research and connected change models, namely: Kurt Lewin's (1947) 3-Step Change Model and

the Carnegie Foundation's (Bryk, 2015) Six Core Principles of Improvement Framework.

Kurt Lewin – 3 Step Change Process. To plan change, Lewin suggested three different stages of organizational change: *unfreezing* (accepting that equilibrium or status quo is no longer acceptable), *moving* (transitioning to different thinking, processes and structures which makes this the hardest step given learned behaviours), and *refreezing* (stabilizing and reinforcing into a new state) (Burnes, 2009). Lewin's (1947) stage of *unfreezing* helps create an enhanced appreciation for the need for change and openness to address beliefs and behaviours to provoke change. The second stage of *moving* is a time marked with uncertainty, but is alleviated by learning and addressing the cultural, political, and social cognitive forces by providing new information and role modeling to facilitate change. Senge (1990) proposes viewing change as a continuous learning process. At the *refreezing* stage, change is stabilized by helping faculty integrate change with new values, behaviours or attitudes into their normal way of performing tasks.

Albeit a linear model, Burnes (2009) posits Lewin's (1947) 3-Step Change Process Model, focused on the resolution of social conflict, was well ahead of its time as he understood that the environment is in a continuous state of adapting to emergent and competing forces (Glor, 2007). As a CI leader, this model provides a useful approach for enhancing a collegial and managerial culture (Alvesson, 2011). Also, to move in the direction of research will require an iterative process and considerable collaboration between faculty and administration that requires relationship building, networking, structures, and processes with simple constructs (Bryk, 2015). However, three criticisms caution me from its sole implementation at Five-star and for this OIP. First, the model is linear and does not consider multi-dimensional influencing and unpredictable factors (Child, 2005). Second, although Lewin's model is simple to understand and communicate, I am concerned that it views political factors as an obstacle as opposed to an opportunity to address

conflict creatively (Bolman & Deal, 2017). Lastly, Lewin's model makes rational sense, but it fails to engage in problem-disciplined inquiry collectively to address psychological factors such as attitudes, beliefs, and behaviours of individuals that affect change (Kezar, 2014).

Buller (2015) asserts that no two organization's going through the same change processes even at the same time will ever go through the exact steps. Therefore, a CI leader is "more successful when they adopt strategies that fit into the culture of the institution for which they are trying to make a change" (Kezar, 2014, p. xix). At the same time, a CI leader has to see themselves as part of the system being changed which requires a "multi-change theory approach" (Kezar, 2014, p. 145). This type of approach encourages systems thinking and encourages participants involved in the change to own their own outcomes of the efforts. Given my positional influence as a CI leader working at the grassroots, it is also important to match a strategy that encourages collaboration and accelerates learning (Senge, 1990). When considering the POP, external contexts, and my positionality within Five-star, it is realistic to consider an approach which engages in problem-disciplinary inquiry at an individual and group level (Bryk, 2015).

Carnegie Foundation's – Six Core Principles of Improvement Framework. Given the factors described above and the complexity of the problem in question, another model of consideration to lead the change process is the Carnegie Foundation's Six Core Principles of Improvement Framework developed in 2015, which is an adaptation of the Institute for Healthcare Improvement (IHI) *model of improvement* (Bryk, 2015). Developed in 1994, the model of improvement is validated as an established action research model predominantly used in health care and in business "that uses improvement science (IS) to accelerate learning and address a problem" (Langley et al., 2009, p. 9). As identified in Chapter 1, IS is informed by social cognition theories of change and scientific knowledge (Langley et al., 2009). Similarly,

the Six Core Principles of Improvement Framework employ a discipline systems approach characterized by discovery, framing, and action to solve specific problems of practice (Bryk, 2015). The key to this model is collective learning through the creation of NICs that engage in discipline cycles of inquiry where data is used to understand the problem before testing potential solutions (Dolle, Russell, Gomez, & Bryk, 2013). In this sense, NICs engage in problem-disciplined inquiry as a feature of professional practice, much like faculty address problems collegially with administrators.

There are many complexities associated with this POP that factor into understanding context and learning individual, group, and organizational capacity to change. Therefore, this POP will be addressed through two connected change models, the Lewin (1947) 3-Step Change Process and the Carnegie Foundation's Six Core Principles of Improvement Framework (Bryk, 2015). In Figure 3, I provide a schematic representation of the conceptual framework which combines the two models proposed for leading change at Five-star, which values integrated learning and an implementation of incremental change. I attest Lewin's (1947) 3-Step Change Process be used as it is centred on a faculty CI leader who is closest to the work, leading and facilitating change in a step process that clarifies what, why, and what change is necessary. In addition, I contend that the Carnegie Foundation's Six Core Principles of Improvement Framework (Bryk, 2015) be used given the key aspects of this collaborative model, which includes planning, assessment, analysis, strategy, testing and reengineering through a learning process. Together, these ethics-based models are underpinned by a specific theoretical approach that is compatible with systems thinking, and emergent and adaptive learning that involves cognition, social network, and culture considerations. This change management framework is also aligned with my pragmatic-idealist positivist lens given everyone affected by the improvement can meaningfully contribute to the solution.

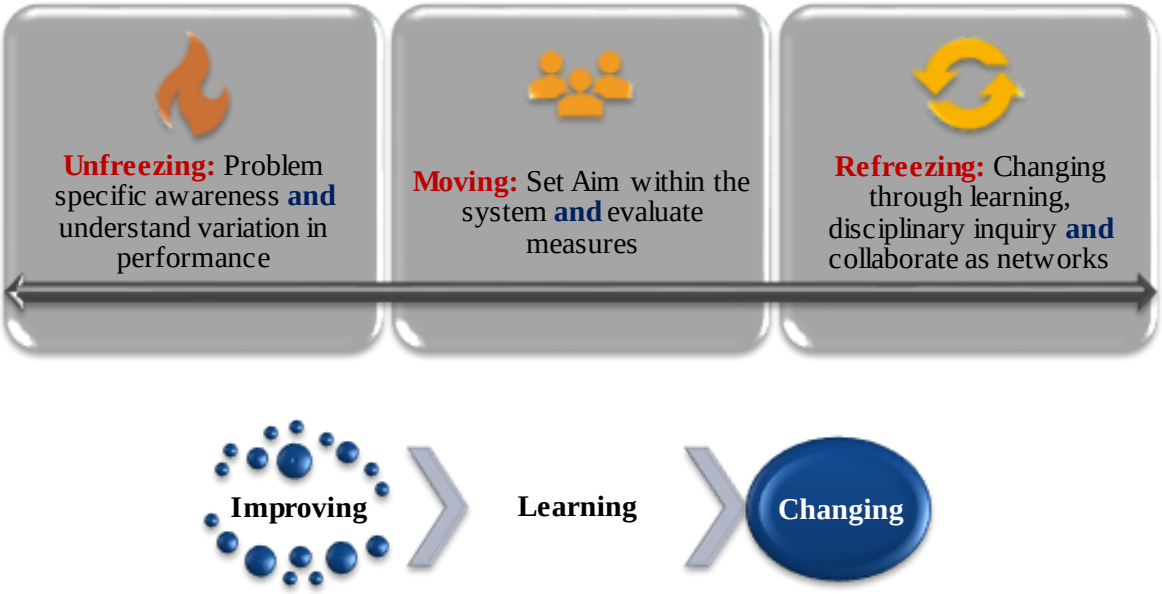

Figure 3. Framework for leading the change process. An illustration loosely adapted from 3-Step Change Process by K. Lewin, 1947, "Frontiers in group dynamics: Concept, method and reality in social science; social equilibria and social change." *Human Relations, 1*(1), p. 4. Copyright 2015 by Sage. Also, adapted with permission from Six Core Principles of Improvement Framework by A.S. Bryk, "Accelerating how we learn to improve." *Educational Researcher, 44*(9), p. 468. Copyright 2015 by Educational Researcher.

Critical Organizational Analysis

This section critically evaluates the organization using the former organizational change readiness findings with a diagnosis framework to determine the gaps which exist between the current and the desired organizational state. Consequently, two complementary frameworks are combined and applied in this section, namely the Carnegie Foundation's Six Core Principles of Improvement (Bryk, 2015) and Nadler and Tushman's (1980) Congruence Model "problem-solving analysis steps" (p.8). Therefore, with a focus on symptoms, drivers, and forces at multiple levels that shape the POP, this organizational analysis follows a series of systematic steps.

Step 1: Identify symptom/Awareness - Make the work problem-specific

Nadler and Tushman (1980) identify that symptomatic data may provide clues to more conclusive information on existing problems. This begins with the first question of engagement

among faculty who are closest to the work asking - *what specifically is the problem we are trying to solve?* In pursuit of answering this question, Bryk et al. (2015) claim individuals suffer from *solutionitis*, "which is the propensity to jump quickly on a solution before fully understanding the exact problem to be solved" (p. 24). This results in a narrow view of the situation, and an incomplete analysis of the problem that may result in resistance to change. With this in mind, it is important to address "five key beliefs underlying recipients' motivations to change" (Armenikas & Harris, 2009, p. 127) before determining what needs to change to engage faculty to enact applied research practices. Therefore, Armenikas and Harris's (2009) five key beliefs of organizational and individual receptivity to change are examined from the perspective of a faculty member who is leading this OIP through a CI leadership facilitative approach. As outlined in Chapter 1, these five key beliefs consist of *discrepancy, appropriateness, efficacy, principal support*, and *valance*.

Currently, *discrepancy* exists given there is ambiguity of how applied research practices will fit within the current faculty workload formula. Despite the institution's overall attitudes towards increasing applied research, there is no clear language within the SWF nor within the CA. These entrenched artifacts shape the tasks of faculty whose focus is on delivering teaching excellence but are absent for applied research. Therefore, the SWF and CA have not *appropriately* kept up with the external environment or the desire or aspirations of faculty. While the institution publicly values applied research, the *efficacy* of this expanded role being assumed remains ambiguous for faculty. Equally important, there are no visible monetary supports for faculty to engage in applied research which makes it difficult to factor measures into workload. Moreover, to cultivate a climate to support applied research while leveraging technical expertise to develop successful research proposals requires realistic strategies underscored with a feasible allocation of resources (Doern, 2008). This includes "salaries for

faculty carrying out applied research, including the cost for course load reduction, knowledge dissemination and network, research and technology transfer support services and operating and equipment expenses for overhead and administrative costs" (Fisher, 2010, p. 4).

I contend what faculty desire, in short, is ideological and material support from administrators within their departments to value applied research. What this means from an organizational perspective is more *principal support* is needed from administration to commit to this change by providing adequate release time (Holmes, 2017), and specifically moving faculty volunteerism time spent on applied research to vocation SWF time (Fisher, 2010). At the same time, faculty and administrators must have *valance* that this change results in benefits and aligns with the broader institutional mission and stance. This takes into consideration a variety of conditions which this next section addresses.

Step 2: Specify inputs - Understanding the system and attending to variability

There are four inputs which determine how an organization is impacted by change - namely, "environment, resources, history, and strategy" (Nadler & Tushman, 1980, p. 40). Influenced by the knowledge-based economy, Five-star's environment is characterized by climate change, wide-ranging industry disruption and demographic shifts (Polytechnics Canada, 2018). Five-star's environment has also been challenged with policy changes including deregulation of fees and competitive provincial funding tied to outcome-based performance metrics (Teichler, 2008). Moreover, as a polytechnic institution, there is significant pressure to build a culture of scholarship teaching and research within the community. Reinforcing this notion, there is also increased emphasis in training students with enriched research experiences to support workplace skills such as creativity, critical thinking, complex problem solving, interdisciplinary teamwork, and leadership (Polytechnics Canada, 2018). Although, Five-star is

one of twenty-four colleges developed under one legislation imparting executive authority to the provincial government, historically, applied research was never part of their traditional mandate or core funding envelope (Jones, 2004). With this in mind, the instability and unpredictability of funds through provincial and government grants have created limited capacity for Five-star to engage and invest resource allocated funds in applied research (Doern, 2008; Fisher, 2010).

Moreover, research data within the college context is difficult to measure given that neither the meaning of applied research nor the variability of how research is performed is well understood. Nonetheless, attending to variability, evaluating parts of the system, confirming clear language, learning through disciplinary inquiry, and organizing networks for improved social learning are all essential to espousing values that allow for the enactment of applied research (Cohen-Vogel, Tichnor-Wagner, Allen, Harrison, Kainz, Socol, & Wang, 2014). This approach draws attention to a shared mindset that is supported by a clear definition of applied research, flexible vision, collaborative leadership, and cross-departmental teams working in networks assessing performance measures and examining variables that are specific to college applied research (Bryk et al., 2015).

Step 3: Identify outputs, problems, and components-Set aim within the system and evaluate

Nadler and Tushman (1980) postulate that outputs relate to services that meet mission-related goals at the "individual, group, and organizational level" (p. 49). These include performance outcomes and indicators to measure the organization's achievements. However, it is difficult to measure the outputs of applied research without first evaluating the relationship and interdependent components of the organization (Senge, 1990). This includes understanding mindsets - the established set of attitudes held by individuals (Cannon-Bowers & Salas, 2001). Although applied research is being emphasized by Five-star's strategic and academic plan,

currently, the language, processes, and values do not align with faculty's *task*, *individuals*, *formal organizational* and *informal organizational* structures (Nadler & Tushman, 1980).

Task. Within the objective of this OIP, the task requires a shift in faculty's mindset from teaching vocational learning objectives and essential educational skills to include applied research within their workload. This change will affect how faculty currently perform in the classroom, requiring new technical skills and knowledge within their role. Arguably, this will require training and education, creating networks within each school and each program to review faculty's SWF's.

Individuals. Considering the complexity of this change and the diversity of mindsets and values, there are several important interest groups to examine.

Faculty. Fisher (2010) postulates that college faculty are first and notably teachers and remunerated for their labour. At the same time, other studies have argued that research has been shown to support faculty teaching instructional methods that are aligned with the knowledge and learning skills students require to adapt and implement in the 21st century (Fisher, 2008; Katkin, 2003; Prince, Felder, & Brent, 2007). However, teaching duties, inadequate funding to address release time for applied research, and appropriate infrastructure with clear language are identified as the primary barriers to faculty engagement and enactment of applied research in colleges (Colleges Ontario, 2019, Doern, 2008; Fisher, 2010; Holmes, 2017; Rosenkrantz, 2013).

Union. Arguably, unlike universities that empower a single body called the senate to represent academic matters and faculty interests, the College does not have a formally recognized group to represent faculty interests (Skolnik, 2013). However, the OPSEU has a vested interest in protecting faculty as it relates to an allotment of time for various academic functions which are part of faculty's workload calculations (Doern, 2008). Despite the CA dictating faculty tasks whereby formal working conditions are structured through individual SWFs, the union has

remained silent when it comes to accommodating research undertaken by faculty (Madder 2005).

Students. Although this OIP focuses on college faculty, "it is worth noting that there is the expectation that college students will also participate in applied research led by a professor" (Fisher, 2010, p. 2). College students, however, also face similar constraints learning new technical skills to fit research into their course work (Faust Zuñiga, 2009). As Five-star evolves in aligning with Polytechnics Canada critical role in enhancing Canada's productivity to "deliver up-to-date and in-demand skills across sectors including applied research" (Polytechnics Canada, 2018), faculty will require training solutions that equip them and students with the knowledge, skills, and research expertise needed to succeed in their daily work while supporting students.

Associate Dean. The departmental Associate Dean has an important role to protect the interest of the college. Since he/she control faculty appointments, space, and discretionary research within their department, the Associate Dean's cooperation is crucial to the CI leader's efforts to enhance the overall research environment. The nature of the relationship between faculty and an Associate Dean is also critical given the reporting lines depend on a harmonic relationship. Ideally, the Associate Dean would have an immense interest to collaborate with faculty to negotiate research on faculty's SWF. Pragmatically, this relationship must be based on trust. Dirks and Ferrin (2002) assert trust is built when we make ourselves vulnerable to others whose subsequent behaviour we cannot control. Additionally, Dirks and Ferrin (2002) recognize that "without trust in leadership" (p. 395) and proper consultation, rallying faculty support and cooperation can be very difficult, thus jeopardizing the chances for improved outcomes.

Formal Organizational Arrangements. Formal organizational arrangements represent the structure, processes, and methods that support individuals to perform their tasks (Nadler & Tushman, 1980). Currently, the SWF and its corresponding CA are contractual arrangements

which represent the formal organizational structures which faculty's programmatic work is represented. In reality, applied research occurs on an ad hoc basis and remains uncoordinated across Five-star with no guidelines outlining cost recovery in research.

Informal Organizational Arrangements. Nadler and Tushman (1980) postulate that within an organization there are informal arrangements of emerging structures and processes that influence individuals' behaviours, work, and communications. To better understand the informal organizational arrangements, Nadler and Tushman (1980) suggest assessing whether individuals' needs are met and whether the use of individual resources is consistent with informal goals and structures that facilitate task performance. Within these informal organizational arrangements, the effect of values supporting applied research practices is mediated by norms (Schein, 2017). However, integrated within the organization's structure, there is a distinction between values and norms (Manning, 2018). Values represent social principles and an adaptable foundation which pinpoint guidelines for everyday behaviour (Manning, 2018; Schein, 2017). Conversely, norms characterize specific practices, organizational routines, and behaviours expected from individuals (Schein, 2017). Within the social context of Five-star's culture, values communicated with clear artifacts have a causal effect to influence behaviour (Schein, 2017). Artifacts, therefore, represent visible and observable social beliefs and habits by which behaviours become routine (Schein, 2017). As pointed out in Chapter 1, the SWF and the CA represent the most powerful artifacts for communicating and endorsing values, reinforcing the importance of expected behaviour of faculty. Therefore, a realistic conjecture of applied research enactment is likely to develop if the SWF and CA, representing key artifacts used to communicate the organization's underlying norms and values, had clear and consistent language that aligned with the strategic mandate.

Step 4: Assess congruence-Evaluate measurement

Underpinned by a continuous effort to improve, learn, and change, the goal of engaging faculty to enact applied research requires a systems perspective (Nadler & Tushman, 1980). Systems thinking in practice is best described as exploring the mental models that individuals possess about their individual work and how they contribute to the entire system of their work world (Mingers, 2014). Assessing congruency also includes assimilating measures of key outcomes and processes to track if the change results in an improvement (Berwick, 1996). At the same time, the rate at which improvement of faculty enacting applied research practices relies at least in part on faculty who are implementing and communicating about the change in practice (Rogers, 2003). To achieve the envisioned state of faculty engaged in applied research practices requires understanding how measurement is used to assess congruency in organizational change (Bryk et al., 2015). As outlined in Appendix D, there is a "lack of congruence" (Nadler and Tushman, 1980, p. 47) between what is occurring to what is needed for an intended outcome for Five-star. Incongruences between the current to the desired state requires deeper learning.

Step 5: Generate ideas and identify causes-Anchor practice through learning

Within the context of this POP, it is imperative to understand the probable causes, gaps, and barriers to determine which component is causing the incongruent conditions (Nadler & Tushman, 1980). Learning patterns of incongruence provides opportunities for faculty to explore strategies to enact applied research practices. To realistically generate ideas and strategies to learn through improvement requires developing a culture where learning and collaboration are supported. The structure of teams will be critical for encouraging collaboration given a significant component of the improvement depends on employee openness to change (Bryk et al., 2015).

Step 6: Identify action steps-Accelerate improvement through collaboration

While I aim to break down silos using a CI leadership process approach that anchors collective problem-solving, I realize this is not without challenges. Nonetheless, it is important to recognize that most of the organized activities undertaken will be guided by Lewin's (1947) 3-Step Change Process and the Six Core Principles of Improvement Framework (Bryk, 2015). In this ethics-based approach, each step plays a critical improvement-related function in the facilitator's CI leadership role and the collective work of the team. The organizational analysis as presented serves to unveil the gaps, symptoms, and drivers that affect faculty engagement in applied research practices. The following section addresses possible solutions to address the POP.

Possible Solutions to Address the Problem of Practice

This section explores three potential solutions to address strategies to engage faculty to enact applied research practices. The description, advantages, and limitations of each solution, as well as the resources required, will be outlined for each solution. This will be followed by a preferred solution and a plan-do-study-act cycle (Moen, 2009) of testing which will later form the basis of the implementation plan.

Solution 1: Establishing a Network Improvement Committee (NIC)

Description. In an effort to increase efficiency and efficacy, many higher education institutions (HEIs) have established networks to improve team members' scholarly teaching and research processes inside and outside the classroom (Andreu, Canós, De Juana, Manresa, Rienda, & Tarĭ, 2006). In contrast to bureaucratic hierarchical structures, NICs feature dynamic internal educational professionals and external partners working collaboratively to solve a problem of mutual concern (Bryk et al., 2015). With a focus on building capacity and re-culturing educational organizational systems, NICs bring diverse practitioners together to promote learning and

knowledge-creation through collaborative inquiry and improvement (Russell, Bryk, Dolle, Gomez, LeMahieu, & Grunow, 2017). Although not studied or commonly practiced in Canada's HEIs, the power of NICs are being established across the United States (US) and United Kingdom (UK) to address complex educational challenges (Russell et al., 2017). For instance, the conceptualization of NICs underpinned the development of the UK's Primary National Strategy Learning Networks, as well as, the US Extended Schools commitment in the implementation of the Every Child Matters agenda, Community College Pathway (CPP), and the Building a Teaching Effectiveness Network (BTEN) recently led by the Carnegie Foundation (Jackson, 2006; Russell et al., 2017; Peaurach, Lenoff, & Glazer, 2016). This social activity, however, is new within Ontario colleges and requires a shift in mindset and behavioural-communicative learning that involves working collaboratively within teams (Bryk, 2015).

Kubiak and Bertam (2010) assert NICs are designed to foster "collaboration between members of faculty within and beyond their own schools using methods in which voluntarism and moral responsibility count for more than formal authority" (p. 34). Kezar and Lester (2009) study on collaboration describes NICs as innovative hubs given members are encouraged to work collectively through information sharing, communication, and shared problem-solving. For faculty, this denotes a departure from traditional teaching practices to more collaborative approaches involving sharing and learning (Bambino, 2002). This is not to be mistaken with the critical friends' approach where faculty members examine each other's work through peer-to-peer analysis and introduce recommended changes to improve teaching quality (Bambino, 2002; Bloom, 1999). Instead, NICs are process-oriented, focused on knowledge sharing and continuous improvement through mutual goals (Kubiak & Bertam, 2010; Wardrip, 2012).

Resources needed. Organizing a NIC is complex and multi-faceted as it requires

collaboration and facilitation skills (LeMahieu et al., 2017). Members of the NIC must undergo a change in orientation of working autonomously to working in an emergent area of collective goal setting (Bambino, 2002). Similarly, Russell et al. (2017) argue developing a NIC requires a formal structure involving diverse individuals with the right mix of expertise, analytical measurement tools, and research capacity to evaluate and address a problem. Reinforcing this perspective, Kubiak and Bertam (2010) contend a NIC is also dependent on ensuring the appropriate people in the hub can perform analytic work and act as social conduits of the NIC's shared goals (Bryk, 2015). This includes "securing commitment by negotiating intellectual, ideological and practical differences, facilitating information flow and ensuring the network is resourced" (Kubiak & Bertam, 2010, p. 34). Considering aspects of this task and the CI leadership approach, this type of network appears to rely on securing human and social resources while embedding trust and connecting with individuals on a meaningful level (Bambino, 2002).

Benefits and drawbacks. Among the advantages derived from using NICs as a source of collective decision-making, is the involvement of different information sources working collaboratively to respond to complex change interactively (e.g., faculty, administrators, students, union representatives, finance staff, and external partners). Moreover, being able to receive different perspectives provides content-rich information which creates veracity and objectivity towards a shared commitment (Bambino, 2002). In this regard, the establishment of a NIC provides individuals the opportunity to work in partnership with others to engage in "quick-win" celebrations that would create momentum and a sense that the common work is further progressing to a shared vision (Kotter, 2014; Kubiak & Bertam, 2010). Moreover, the NICs bottom-up improvement solution offers an approach to break through the glass ceiling of top-down previous initiatives since it relies on less formal or hierarchical leadership (Wardrip, 2012).

While the NICs as a whole are configured around a shared focus, there are some limitations given the time, human resources, budget, cognitive and cultural challenges. Thus, alignment activities would need to consider the values, norms, and beliefs held by faculty and other partners. Comparatively, even faculty in an existing network may withdraw "creating a source of tension around inclusiveness and coherence later in the network's life" (Kubiak & Bertam, 2010, p. 39). For instance, in 2002, the England National College of School Leadership launched a NIC to support context-specific practices across the school (Hadfield, 2007). While there were exemplary practices in improvement, Hadfield (2007) posits some faculty involved in the NIC found ambiguity and the lack of academic freedom anxiety-provoking. To respond to this development, new policies to address appropriate release time, processes, training, and budgetary controls were developed (Hadfield, 2017). Therefore a motivating factor to engage faculty in NIC activities at Five-star may involve incorporating new policies to support release time where faculty participation in applied research is acknowledged and validated.

Solution 2: Creating a Common Language for Applied Research

Description. Despite Five-star having a strategic mandate that identifies applied research as a priority, there is no common language or systematic structure for faculty and students to fully understand its meaning. Yet, leaders know the power and language of words since they define attitudes, behaviours, structures, and systems (Kouzes & Posner, 2002). Arguably, Schein (2017) posits language is the most obvious cultural dimension evoking images of what we hope to create and how we expect people to behave as it defines not only the "categories of what we see, hear, and feel, but how we think about things and define meaning" (p. 86). Similarly, as noted in Chapter 1 of this OIP, amid the planning of a new Innovation Village which serves as a hub for a wide range of activities supporting academic excellence and a great student experience,

the meaning of applied research has continued to evolve (Five-star, 2020a).

Accordingly, the language, meaning, and understanding of applied research from faculty's mindset across academic disciplines and departments vary, resulting in misperceptions. To ameliorate this situation, a clear definition of applied research may help guide and understand its meaning. It will not only invigorate Five-star's strategic mandate, maintain and intensify their pursuit of quality, but it proposes to help implement and deploy a common language that promotes individual interest in applied research.

Resources needed. Drawing from my experience working in healthcare, any improvement in language which is often referred to as nomenclatures involves a commitment of collaboration with a team that aims to leave no ambiguity. In healthcare, it is common to assign a Taskforce that is comprised of various representatives considered necessary to the get job done (Baker, 2011). As part of the institution's commitment to quality, a designated Taskforce reviews internal and external documents to evaluate whether changes are required to ensure the meaning of terms are translated clearly, "but also to decode historical and cultural implications communicated by these terms" (Quality of Care Information Protection Act, 2016, p. 3). If there are gaps, a more in-depth analysis is undertaken which involves more time and resources. This systematic terminology work is led by a project leader to manage the Taskforce objectives. All of this change is motivated by learning which is presumed to rely on cognitive processing and social network learning (Baker, 2011). In the context of Five-star, developing a common language of applied research will require a working task force, time and adequate resources to supplement individuals' project work. However, the time and resources allocated to this commitment involves interacting and meeting with key stakeholders. This requires a change from a definition developed at the administrative level to a description derived by the faculty.

Benefits and drawbacks. Schein (2017) argues that a common language allows members to adapt and understand each other. An additional benefit of having a common language for applied research is Five-star's ability to communicate with indicators its commitment towards scholarly research activities as a polytechnic institution. From a social and cultural context, Manning (2018) postulates "the language used within an organization is more than simply a means to communicate but instead a highly symbolic aspect of culture that shapes reality" (p.75). However, faculty experience confusion regarding the meaning of applied research as the terminology developed by the Innovation Village office does not align with the technical terms and language previously developed by the Centre of Research and Innovation office, as identified in Chapter 1. Although this may be true, Temmerman and Kerremans (2003) study on language and terminology argue the importance of the 'univocity principle,' which recommends "one term should be assigned for a concept" (p. 3) to avoid translation problems.

Albeit as a faculty member, I recognize the term applied research is multi-functional and its meaning represents an interactive process that includes various types of context. Nevertheless, a significant drawback of not receiving clarity and a common language of applied research may lead to further ambiguity. Schein (2017) reaffirms that the meaning of terms used, needs to become shared, to allow team members to communicate effectively. Similarly, Manning (2018) contends, to interact, individuals require a common language and shared categories on how to perceive and think about themselves and their environment. Thus, without a common language of applied research, it is difficult for faculty, students and the community to comprehend its meaning, especially since Five-star is moving beyond its traditional teaching mandate (Five-star, 2020a).

Solution 3: Creating a NIC and Developing a Common Language (Preferred Solution)

Description. The POP objective is to develop strategies to engage faculty to enact applied

research practices. As such status quo is not an option given the institution's mandate in a highly political environment. However, the lack of consistent and common language used for applied research creates confusion among faculty. For this reason, a hybrid of the above is the preferred solution. This solution presents one way to address the POP and focuses on creating a NIC in one academic departmental school that would engage and encourage faculty to work collaboratively in developing a common language for applied research. This inter-departmental solution has the capacity to develop consensus among faculty over time through increase engagement, interaction and information sharing. To reduce situational uncertainty, the multi-perspective work of the NIC can help diagnose the problem and provide faculty an opportunity to engage, describe, and explain their interpretation of applied research within the College environment. This builds on developing deeper professional capital where opportunities for collective commitment of continuous improvement and shared leadership evolves towards common goals (Fullan et al., 2015). However, facing emergent change and ambiguity, this solution requires time to incrementally grow and establish a collective purpose that also validates faculty time is valued (Cawsey et al., 2016). Consequently, piloting a NIC incrementally in one department is feasible and practical as it deepens and solidifies a shared commitment across key constituents (particularly faculty) that are closest to the problem, while enhancing the quality of team decision-making.

Resources required. Arguably, establishing a NIC requires cultural considerations, human resources, management support, skill-training, and investments to appropriately support the collaborative work of the hub (Hadfield, 2007). Hadfield (2007) claims establishing a NIC involves building a collective identity while supporting an understanding of participants' values and perspectives. However, to meet the complexity of developing a NIC and build capacity for continuous improvement through a common language with context-specific practices and

solutions requires time outside of faculty teaching to form relationships. In the same vein, navigating through complexity and uncertainty requires learning, sensemaking, and consensus among the hub. Moreover, within the intersection of commitment for improvement and learning is the importance of instilling trust, which relies on ethical leadership (Starratt, 2005a).

Benefits and drawbacks. In addition to the benefits and drawbacks already described herein, one significant benefit of embedding this solution is entrenching a bottom-up approach that brings coherence between individual's mindset aligned with the organizational strategic mandate. Moreover, this solution has the potential to address each of the three challenging sub-questions identified in Chapter 1 given faculty closest to the problem will help define applied research, understand unconsciously held values/beliefs, and promote a shared mental model to influence applied research behaviors and integration efforts. Given change is rarely linear, this proposed solution acknowledges complexity associated with change (Higgs & Rowland, 2005). This points to a more supportive CI model of leadership that helps faculty to make sense of their situation while helping to "diminish problems of understanding" (Vlaar et al., 2006, p. 1617).

Nonetheless, within the existing space, I am also mindful that there are challenges to align the participation of a NIC within the financial resources, cultural norms, values, and beliefs adapted by individuals. Appendix E outlines a summary comparison of the proposed solutions for the POP. The following section represents a CI testing model to address the preferred solution. Langley et al. (2009) claim that when planning any change, it is important to employ a plan, assessment and evaluation of a proposed idea in incremental steps.

Plan-Do-Study-Act

Reed and Card (2015) describe the plan-do-study-act (PDSA) cycle as an authentic application that is comprised of developing a plan to test the change (plan), carrying out the test

(do), learning from the test (study), while cultivating new knowledge for the next cycle (act). In line with improvement science and social cognition theories, outlined in Chapter 1, the PDSA four-stage cycle learning method promotes a trial-and-learning approach to the preferred solution.

Plan. The plan of forming a NIC and developing a common language of applied research is proposed as a central idea and organizational change for Five-star. As a CI leader, I suggest starting small and developing a NIC within my own department while working collaboratively towards a common language of applied research (i.e., School of Information Technology). This incremental change involves building activity through aligning constituents around a particular vision, connecting through structured meetings, and embedding trust in the group before launching into larger networks (Kubiak & Bertam, 2010). Arguably, scaling up this strategy within other departmental schools may occur subsequently when sufficient evidence exists to warrant confidence for expansion (George, Morgan, & Foster, 2019). Kotter (2014) describes this as a "quick win" which visibly outlines to stakeholders an improvement in progress being made.

Do. Working amongst the NIC within the department, which would be comprised of faculty and administrators along with other key stakeholders (e.g., faculty, institutional research manager, librarian), members would use various tools and processes to determine key barriers and gaps in applied research practices in the current context. An organizational CI tool that can help teams explore and organize current knowledge about potential causes-and-effects towards areas of improvement is called a fishbone (Lewis, 2015). Appendix F illustrates this tool outlining the cause-and-effect of applied research that builds awareness of areas of concern.

Study. This component of the cycle compares data and information with a summary of what was learned. It is anticipated that the results would identify a common language for applied

research along with a better understanding of the barriers and gaps preventing engagement of faculty to enact applied research practices.

Act. Having studied the information collected and a consensus among the NIC group on how to define a common language of applied research, this step determines what changes are required, permitting ideas and definitions to be gradually modified and tested across other departments. The aim of the NIC within one department is to learn from each test, refine the change according to additional feedback and continuously improving through knowledge translation before a clear and common language of applied research is developed on a wider scale across the College. This reinforces a shared new vision, and prepares a change with adequate plans, resources, and supports. Considering the factors and drivers involved in this change, there are also ethical considerations and challenges. The next section will identify the ethical considerations of a CI leader at a personal, professional, and institutional level.

Leadership Ethics and Organizational Change

The main goal of this OIP is to provide a potential solution for engaging faculty to enact applied research practices. Impacted by change and uncertainty, the complexity of the problem is compounded by political pressures to align a strategic priority to a larger knowledge-based competitive strategy against the language discourse of research foci, faculty roles, and values. Inevitably, there are power struggles, tensions, and conflicts that prevail, most of which relate to competing values (Bolman & Deal, 2017). To address and be sensitive to ideas, issues, questions, and problems related to applied research and to ensure that a supportive and empathetic environment for these activities is discussed openly within and outside the institution, there should be important safeguards and ethical leadership responsibilities at each stage of the change process. Leading is also a relational activity that involves responsible and ethical leadership (Brown &

Treviño, 2006). With the aspiration of utilizing a holistic approach, a pragmatic definition of ethics appears relevant here. Such a definition includes morally responsible conduct and the production of citizenship, both of which are required through learning and practice (Dewey, 1957).

The first step in participating in the change process is building awareness of the problem from a faculty perspective, but also contemplates how the problem impacts students. Consequently, this change involves a continuous journey of learning, discovery and communicative actions to address a seamless web of diverse values through communication, collaboration, and coordination. As a faculty member, working as a CI leader, I view my ethical leadership responsibility from a relational lens and moral compass that is based on duties and responsibilities that are in the best interest of the students, faculty, institution, and the community at large. For this reason, my ethical and moral ideology is influenced by three levels which include a *personal code of ethics*, a *professional code of ethics* as well as an *institution code of ethics*. The proceeding paragraphs outline these three levels.

Personal Code of Ethics

As a CI leader who encompasses the characteristics of servicing others, supporting teams through collaborative efforts and adapting to the realization of efficacy and efficiency outcomes, I am committed to listening, honesty, respecting others, building capacity, and advocating for justice. This is based on authenticity that engages with key stakeholders to "infuse educational practice with a higher purpose and meaning" (Duignan, 2004, p. 1). In reality, my journey of continuous improvement begins within and is influenced by my religion and spirituality, where the pre-eminence of justice, prudence, fortitude, and temperance reign as key virtues. Having a virtue is not meant to solve moral dilemmas, but instead provides personal dispositions to respond in ethically and morally appropriate ways in diverse situations (Parris & Peachey, 2012).

These virtues and moral leadership ethical dimensions unite effectively with Lewin's (1947) 3-Step Change Process and the Carnegie's Foundation Six Core Principles of Improvement Framework (Bryk, 2015). At different stages of the change process, these virtues will help guide me to respond ethically and appropriately to diverse stakeholders. These four cardinal virtues are best described by Mattison III (2008) and are outlined as follows:

1. Justice: Obligation to the common good and treating others ethically and fairly;
2. Prudence: Involves acting truthfully and selecting the best course of action;
3. Fortitude: Enables one to face adversity with humility, courage, and bravery; and
4. Temperance: Consistent habit to do certain activity well, with good intention.

Equally important is understanding the system and attending to variability at the cognitive, social, and political levels (Kezar, 2014). Consequently, the change management process of this OIP promotes a different perspective on efforts to support change (Bryk et al., 2015). Nonetheless, evaluating the system and outcomes of this change is not implemented autonomously, but instead involves building relationships and consensus in which there is a shared mindset (Cannon-Bowers & Salas, 2001). This requires virtuous behaviours and character traits such as "humility, optimism, courage, and compassion" (Ciulla, 2013, p. 3). However, anchoring practice through learning to generate ideas to improve change requires performing virtues with ethical boundaries (Ciulla, 2014). As a faculty leader, to create my own teaching identity that is a conduit of learning, I work on building a positive relationship with students and faculty earning and giving trust. I strongly believe that caring about students, faculty, and the community matters and to become great leaders, we must become great communicators who are aware and adaptive to students, faculty, and the community situations. This includes going beyond teaching EESs and VLOs as outlined within the ministry's Binding Agreement to collaborating ethically with students, faculty and healthcare partners on social innovation projects.

Professional Code of Ethics

As Five-star prepares for servicing diverse students with skills for tomorrow, including applied research practices, Shapiro and Stefkovich (2016) assert educators must develop, foster, and lead value-based leadership and ethical decision-making processes. However, we cannot understand applied research unless we place it within the larger context of the higher education system. By the same token, it is easy to argue that applied research is valuable. Likewise, it is even more challenging to unpack what applied research means to faculty as well as the communicative actions or coordination to make it a consistent reality.

As a faculty member with active applied research projects involving diverse community healthcare providers, my tasks as a CI leader are not straight-forward given I must also maintain behaviours that are consistent as a researcher and with my active professional designation as a Chartered Professional Accountant (CPA). As a researcher, this means incorporating "core ethical principles of respect for individuals, concern for welfare, and justice which are complementary for the development and improvement for learning" (NSERC, 2007, p. 6). Conversely, my CPA designation includes acting with: integrity including duty of care, professional competence, personal behaviour, objectivity, and confidentiality (CPA, 2017). This also involves operating from a mindset that values and respects inclusion, diversity, and equity (Five-star, 2019c). At the same time, identifying components of the organization and evaluating the system against its outcomes, involves change that is marked by "integrity, trust, a concern for how goals are achieved, including a sense of social responsibility" (Johnson, 2017, p. 166).

Institutional Code of Ethics

Responding to rapid and disruptive change affecting the labour market, Five-star is a publicly-funded polytechnic college that retains the social responsibility of a value-based service

that is receptive to the needs of every learner by supporting accessibility, comprehensiveness, social justice, community orientation, and adaptability to the demands for training and education (Dennison, 2006; Government of Ontario, 2002; Pal, 2014; Shapiro & Stefkovich, 2016). Within this reality, institutional leadership is viewed through the prism of ethics (Langlois, 2011). Starratt (2005a) recommends a multiple paradigm approach to institutional leadership ethics that includes three fundamental perspectives including ethics of critique, justice, and care. These three ethics defined by Starratt (2005a) are as follows:

1. Ethics of critique: A form of social responsibility to ensure the organization and the social arrangements are in line with the human rights of all citizens;
2. Ethics of justice: Fosters the balance between institutions serving the common good the individual rights to respect diversity; and
3. Ethics of care: Involves a relationship based on mutual respect, esteem, and loyalty towards harmonious relations.

Starratt (2005a) contends the three perspectives involving ethics reinforce each other to form a holistic approach in shaping perceptions of an ethical climate. Overlaying these values and perspectives embracing ethics, I also recognize the challenges, as a CI leader, to evaluate the problem in the context of the institution and the larger system given Five-star's institutional responsibilities. In reality, these institutional social responsibilities involve networking ethically with constituents operating within three lines of business, namely (1) teaching and learning; (2) applied research and; (3) industry and community engagement. This charts a different course of action that invests in social capital. Although there is no agreement on the definition of social capital, most would agree it focuses on relations that have shared values that fosters commitment to achieve a common goal (Ciulla, 2013). When human and social capital merge over time, based on the knowledge and expertise of the people learning through deliberate practice, "their professional judgement becomes more powerful" (Fullan, 2016, p. 47).

Notwithstanding, the situation of faculty enacting applied research is complex and the context is changing rapidly where work duties are not fully defined within the SWF, perpetuating unclear communication and ethical considerations. Equally important, the ethics that currently frame most of our relationships are not neutral but embedded in a liberal vision of the market economy and freedom of choice, which is one aligned with managerialism practices (Langlois, 2011). Faced with multi-layered and multifaceted challenges, this change plan is a journey of learning, improving and changing in relationships that requires a slower, more deliberate approach focused on collective strengths and collective good. This requires ethical reflection and action at a personal, professional, and institutional level at each stage of the change process while centred on social responsibility, justice, and care.

Conclusion

In this chapter, five components for planning and developing the framework for change at Five-star were discussed. In support of addressing the problem of applied research, outlined was a CI leadership approach and two connected change models, the Lewin (1947) 3-Step Change Process and the Carnegie Foundation's Six Core Principles of Improvement Framework (Bryk, 2015) to lead the change. Using the Carnegie Foundation's Six Core Improvement Framework combined with Nadler and Tushman's Congruence Model problem analysis steps, a rigorous critical organizational analysis diagnosed the need for change. Subsequently, possible research-supported solutions against alternatives to address the problem of practice were proposed. As an iterative learning approach, the PDSA cycle is applied to consider the congruency of the chosen solution. Guided by CI leadership action, the chapter concludes with ethical and organizational considerations as they apply to any stage or step in the change process. The steps required for implementing, evaluating, and communicating the change will be detailed in the next chapter.

CHAPTER 3: IMPLEMENTATION, EVALUATION, AND COMMUNICATION

Informed by the organizational analysis undertaken in Chapter 2 and linking theory with systematic inquiry to design a change path, Chapter 3 outlines the change implementation plan. Guided by the organizational imperative to provide every student with an exceptional learning experience (Five-star, 2020a), the implementation plan describes how a network improvement committee (NIC) will be engaged to devise a common language for applied research within one academic school at the College. Aligned with Five-star's strategic goals and priorities, this section will utilize an ethical approach to assess progress, monitor, and evaluate the plan, as well as outline an effective communication strategy for the organizational change. Finally, the chapter concludes with next steps and future considerations.

Change Implementation Plan

This section outlines the strategy, goals and priorities of the planned change, as well as the detailed plans to facilitate and manage the transition.

Strategy, Goals and Priorities of the Planned Change

A key question to address is - what are we trying to accomplish? In this case, the solution or the goal of the implementation plan involves engaging faculty within the Academic Information Technology School (AITS) at the College in devising a NIC that collectively works on a common language for applied research. Kezar (2014) postulates that developing a common language helps us achieve mutual understanding and successful coordination of action. In addition, by reviewing language and embedded values, she reasons we initiate questioning that requires people to examine their mental models, behaviours, and attitudes. Nonetheless, devising a NIC alone and sharing a common language of applied research within one departmental school does not mobilize sufficient energy to make the change in faculty involvement in applied research happen across the

organization. That said, a NIC which is made up of voluntary participants, provides an opportunity to support a culture of learning that creates capacity to engage faculty to work collectively with key stakeholders (i.e., executive leaders) to improve understanding of applied research.

Organizational Priorities, Structure and Strategic Alignment

To address whether the planned change is an improvement and fits within the context of the organizational strategy, it is essential that I align objectives with the organization's Integrated Master Academic Plan Priorities (iMAPP) and Strategic Plan goals. Both the academic and strategic priorities identify using the Innovation Village hub and the Centre of Research and Innovation Office to support applied research and program-based activities. Arguably, any educational system is accountable to student learning and so the collective capacity and responsibility of the profession must be directed to the success of all students (Fullan, Rincón-Gallardo, & Hargreaves, 2015). Reinforcing this notion is the need for nurturing and sustaining a professional culture of CI that supports internal and external accountability. Fullan et al. (2015) contend that internal accountability occurs "when individuals and groups willingly take on personal, professional, and collective responsibility for success for students" (p. 4). As such, the effort to formulate a NIC as a voluntary learning community is aligned with the commitment and key priorities of connecting agents within design spaces and promoting adaptability (Glor, 2007).

This social-network approach of shared learning and commitment to CI in applied research is also aligned with Five-star's recently announced 2020-2025 Strategic Goals and Commitments that targets student vocational learning outcomes with job skills of the future (Five-star, 2020b). Conveyed is a commitment to provide every student in every program with at least one signature learning experience (SLE) (Five-star, 2020b). The SLE categories, which are broad and align with the College's academic priorities, consist of applied research, entrepreneurship, multi-disciplinary

projects, global projects, and live client interactions (Five-star, 2020a). Fullan et al. (2015) describe a situation such as this as an institutional form of external accountability where "the system is performing in-line with societal expectations" (p. 4). As a CI leader working at the grassroots with other faculty members, it is my intention to harness social capital through the creation and coordinated collective action of the NIC. I also recognize that the speed of change will be contingent on the growth of our relationships and shared understanding as a network. As shown in Figure 4, the potential to build capacity for social capital and foster support for faculty to adapt relies on individual members embracing alternative approaches that focus on learning and openness to change. Creating a visual structure of the key participants within the NIC and their interrelationships can be helpful to understanding the dynamics of the situation and the interdependencies between agents (Cawsey et al., 2016). As such, the NIC structure aims to engage faculty and key opinion leaders working collaboratively in alignment of the College's academic priorities through a core team, operational team and with communication support.

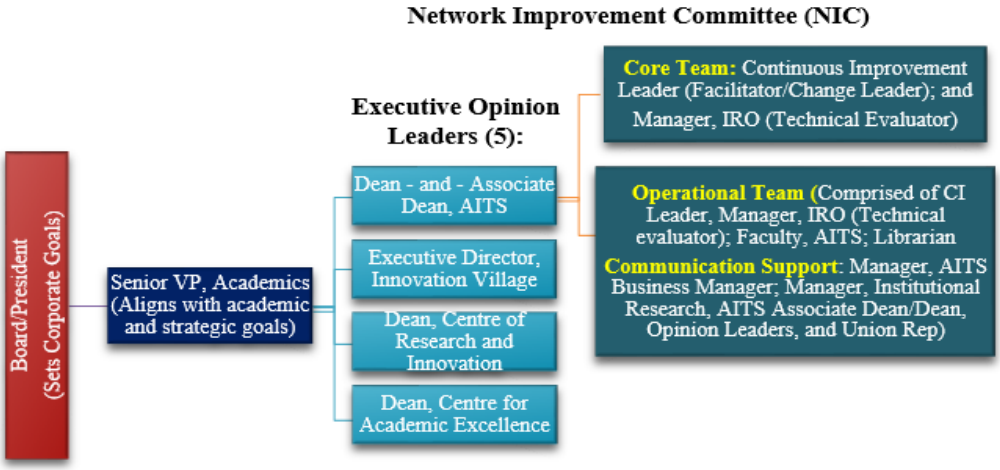

Figure 4. Network Improvement Committee (NIC) inter-organizational coalition structure

Assumptions. Although, the Senior Vice President of Academic Services would not be responsible for managing the day-to-day activities of the NIC, this plan assumes financial and human resources project sponsor support for NIC related activities from key Executive opinion

leaders. I also acknowledge this solution will require targeting individuals with the influence and/or authority to approve a needed change (Maitlis, 2005). Thus, to position the NIC activities, this plan assumes five Executive opinion leaders who consist of the Dean of Centre of Research and Innovation Office, Executive Director of the Innovation Village, Dean of the Centre for Academic Excellence, Associate Dean of AITS, and Dean of AITS. This plan also assumes these opinion leaders will help establish goals, mobilize efforts and share information to promote adaptability to the change. As the main change CI leader, I will work as a facilitator, voluntarily creating forums for self-organizing behaviours to emerge (Ströh, 2007). The focus is on accelerating learning and helping people change their attitudes, skills, habits, ways of thinking and working (Kitson, Harvey & McCormick, 1998).

This involves facilitating a climate of constant change where innovation, experimentation, and trust are centred on collaborative learning (Sonnichsen, 2000). Having previous experience as an Improvement Coach in healthcare, I am armed with CI tools to cultivate actions and strengths, and as such, I can establish credibility with key executive leaders and faculty members. Nonetheless, in order to facilitate, collaborate, and construct a NIC, I will require technical evaluation support from the Manager of Institutional Research Office (IRO). The plan also assumes that there are four skilled and committed AITS faculty members and a librarian voluntarily interested in informing policy and practice improvement in applied research. Together with the CI leader, these diverse participants are to serve as the operational team to help guide and transform individual interest into productive collective goals (Gronn, 2002). Other key representatives that will assist with operational and communication support include the AITS Business Manager and the union representative to link activities focusing on improving awareness, learning, interaction and capacity building (Cooper, 2015) for the implementation plan.

Implementation Plan Steps

The implementation plan steps associated with this OIP assume an action-research and ethics-based approach and is informed by different perspectives, including Lewin's (1947) 3-Step Change Process as well as the Six Core Principles of Improvement Framework identified by the Carnegie Foundation (Bryk, 2015). Storberg-Walker and Torraco (2004) claim that action-research is a combination of action-orientation that necessitates changing attitudes, behaviours, and research orientation while testing theory. As depicted in Figure 5, this dual framework of action and research adopts an open system view where the process of diagnosis, analysis, and implementation is conducted with the participation of key individuals involved in the change process (Ströh, 2007). This approach recognizes that individuals experience different perceptions that imply change agents should anticipate different reactions of their interventions (Hall, 2013). The most significant benefit of this approach is the emphasis on network learning that leverages social capital to support faculty who are closest to the problem. While the implementation plan phases are represented as a linear process, it is important to acknowledge that they are iterative in nature, guided by participative-relational approach, and facilitated by CI leader amid collaborative learning as identified in Appendix G, Change Implementation Plan.

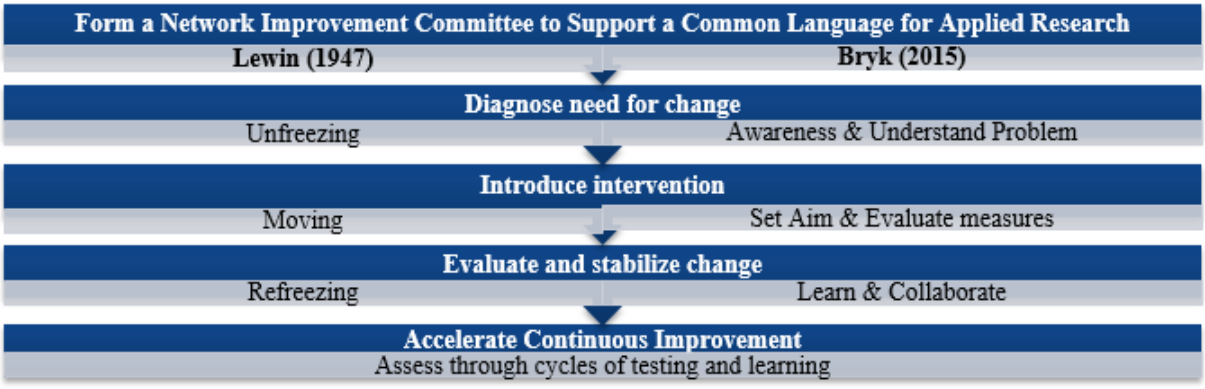

Figure 5. Action research process. Embeds Lewin's (1947) 3-Step Change Process, and the Carnegie Foundation's Six Core Improvement Principles Framework (Bryk, 2015).

Unfreezing: Awareness and Understand Problem. The AITS is part of the School of Business which employs 37 full-time faculty and 99 part-time faculty and has an annual budget of approximately $8 million. Moreover, the AITS is an extremely active school that generates a net revenue of $14.3 million to the College operating budget (Five-star, 2018). In the first phase, the focus is on the deliberate activity of inviting diverse agents from the AITS together to create a NIC. The NIC is intended to connect and leverage social capital to improve faculty engagement. This change within the AITS is multi-dimensional and multi-level given it considers diverse mindsets and behaviours of stakeholders (Mohammed, 2001). "Challenges associated with collaboration are often related to coordination" (Wardrip, 2012, p. 341) given the actual norms differ across discipline and across cultures (Schein, 2017). Tools and practices to help coordinate collective behavior and relational trust within the NIC includes creating an aim, a shared vision, mission, and norms of action to facilitate collaborative learning among team members (Reed & Card, 2016). This inter-organizational network is also predicated on relationship-building among members where activity is distributed and structured toward a collective goal (Wardrip, 2012).

Moving: Set Aim and Evaluate Measures. This phase is analytical where potential courses of action are interrogated against extant best practices. Once the NIC is instituted and there is a shared understanding of the problem and a common set of goals and priorities, the members work on securing resources and a timeline, outlining existing information and collecting diverse definitions of applied research. A critical milestone is analyzing the data captured through surveys, informal and formal feedback, assessing artifacts of collaborative activities such as meeting notes and agendas, and focusing energy towards a common language for applied research, however, a well-defined meaning of applied research is identified as a perceived barrier for faculty. Leadership, facilitated by collective action is critical at this stage.

Refreezing: Learn and Collaborate. It is envisioned that the last phase of this change implementation plan is that new learning arrangements in understanding applied research will lead to institutional day-to-day activities and practices consistent with the NIC's principles and goals. Arguably, this involves three tactical changes: (a) mobilizing the AITS school for dialogic discussions regarding key artifacts (i.e., SWF and CA) while understanding key training needs; (b) implementing a process and infrastructure within AITS that supports faculty to enact applied research using a common language and; (c) belief convergence in institutionalizing a common language for applied research across the IT school with appropriate resources. This provides a space for achieving internal consistency that enables social capital which is emphasized below.

Transition Management

The following section addresses how I envision the facilitation and management of the transition plan. As a CI leader working at the grassroots, I recognize, the engagement of faculty to enact applied research practices is more than making incremental change to existing tasks. It requires a reconceptualization of individual roles, relationship building, and responsibilities.

Understanding Stakeholder Reactions to Change. The organizational analysis conducted in Chapter 2 identified five diverse key beliefs to address in an effort to promote individual change. Without addressing these five belief structures, there is a potential to negatively impact communication, collaboration, and coordination in change efforts across inter-organizational and inter-professional departments (Armenikas & Harris, 2009). Therefore, considering faculty are the individuals closest to the problem, it is essential that I work closely with the NIC to thoughtfully and ethically evaluate beliefs such as: (a) *discrepancy* of misaligned language; (b) *appropriateness* of consistent meaning within key artifacts such as the SWF and CA; (c) *efficacy* given lack of workload measurements; (d) *principal support* from administrators to address appropriate release

time; and (e) *valence* to ensure everyone benefits. The failure to learn and apply these beliefs may contribute to further perceptions of ambiguity among faculty, leading to a non-sustainable change effort (Waks, 2007). The previous organizational analysis in Chapter 2 also revealed there is a lack of congruency within faculty's tasks, individuals' interests, formal organizational structures, and informal organizational structures given the language, processes, and values of applied research do not align within roles and daily operational rituals of organizational life.

Network Improvement Committees. While teaching faculty are generally regarded as content experts, "higher education is not organized to learn systematically, accumulate, and disseminate the practical knowledge needed for the improvement of teaching and learning" (Russell et al., 2017, p. 4). As identified in Chapter 2, Bryk et al. (2015) initiated the NIC as a social learning community to organize collaborative work by sharing new knowledge and expertise through a process of CI and deeper learning. Nevertheless, to initiate a viable and sustainable NIC, faculty need to be engaged in an interactive learning process within an inter-organizational learning community setting that "facilitates sharing and exchanging members' perceptions, experiences, and knowledge" (Wenger, 1998, p. 139). Consequently, as a CI leader facilitating collaboration amongst participating members, it is anticipated the NIC will assist in building the faculty's social capital in terms of learning from each other. This in turn helps to accelerate collective action and shared practice development that fuels distributed responsibilities (Gronn, 2002). Arguably, distributed responsibility allows NIC members specialization and ownership while increasing learning through the "continuous sharing of insight, expertise, and experience among members" (Brown & Duguid, 1991, p. 46). However, Russell et al. (2017) purport it is also important for the distributed work of the NIC to "specify a compelling and measurable aim that will motivate collective action" (p. 7) that is process-oriented rather than

outcome-driven. Although this may be true, Zhang and Soergel (2014) assert socio-cognition and socio-cultural issues may arise from the existence of different values, motivations, and normative orientations. With this in mind, Cannon-Bowers and Salas (2001) suggest the change leader promote and facilitate a shared mental model, which involves team members divvying roles and action necessary to achieve a common goal.

Determining Supports and Resources. To ensure this plan's optimal implementation, it is essential that I work collaboratively with the NIC to facilitate information flow and to achieve timely access to resources to realize shared goals. In the early stages of the implementation plan, I will require assistance from the AITS Business Manager and AITS Dean in the form of release time for NIC activities. These preliminary discussions would take place before completing an agreed-upon internal budget request for an 18 month allocation to support core NIC activities.

As identified in Figure 4, the core implementation team of the NIC is comprised of the CI leader, as the facilitator, and the technical evaluation manager from Institutional Research Office (IRO). The in-kind salary cost for the lead at 0.2 full-time equivalent (FTE) is estimated at $31,500. In addition, the IRO manager will work in partnership with the CI leader to coordinate and design surveys, and complete the assessment and evaluation results of data and other reports. The estimated cost for technical evaluation service at 0.1 FTE is approximately $18,750.

The budget request also includes in-kind institutional costs of approximately $31,500 to support faculty working on the NIC as subject matter experts (SME). Other one-time institutional costs include evaluation expertise from the librarian at an estimated cost of $7,875, as well as, an estimated cost of $12,375 for resource time from five Executive opinion leaders who will periodically be requested to provide timely operational and communication support. Since the change is within an AITS, the anticipated developmental cost for supplies, administration, and

communication is relatively small and estimated at $7,500. Table 1 summarizes the support and estimated resource costs of $109,500 to fund the 18 month change implementation plan.

Table 1

Estimated allocation recommended for the plan

Institutional In-Kind & Development Costs	FTE	Salary	FTE Rate	12 Month	18-Month
CI Leader (Principal Lead)	1	$105,000	0.2	$21,000	$31,500
Technical Evaluation Manager (IRO)	1	$125,000	0.1	$12,500	$18,750
Faculty on NIC (SME)	4	$105,000	0.05	$21,000	$31,500
Librarian (SME)	1	$105,000	0.05	$ 5,250	$ 7,875
Key Opinion Leaders	5	$165,000	0.01	$ 8,250	$12,375
Developmental Cost (Materials)				$ 5,000	$ 7,500
Total (estimated)				$73,000	$109,500

Note. The costs and planning may need to be adjusted based on the number of hours that core members of the group are able to contribute. Four Faculty on the NIC will be allocated based on SWF negotiated with the Associate Dean.

Potential Implementation Issues. As with any change, there is a range of different issues and challenges that need to be addressed for a successful plan to be implemented. However, to embrace a mindset towards change, it is important for the NIC to inquire, observe, and commit to one another towards a common goal (Bryk et al., 2015). This requires trust, listening deeply and relationship building through open and honest questions (Greenleaf, 1977; Fullan, 2016). Boies and Fiset (2018) argue that trust issues, resistance to change, economic fear, threats to academic freedom, and anxiety can manifest because of a lack of understanding of the need for change, as well as, insufficient time and resources. Under these conditions, a key artifact to address is the SWF to ensure there are sufficient resources for faculty to receive appropriate release time to undertake the NIC activities. Assuaging faculty's concerns and convincing them of the benefits of the change is an important first step in the change process. It is unlikely all resistance will be overcome before changes are implemented, but to gauge faculty's reaction (i.e., through surveys), my goal as a facilitator, is to mitigate resistance to a level where it does not threaten the

implementation of the proposed changes (Markiewicz & Patrick, 2015). To motivate agent interactions, I will also need to listen, learn, and work diligently in collaboration with the NIC to consider and address these factors within the transition change details of the targeted goals.

Goals (Short, Medium, and Long-Term). As outlined in Appendix G, the Change Implementation Plan outlines three essential steps of activity, and subsets of goals completed over 18 months. To challenge the status quo and influence incremental change, as a facilitator, I require catalyzing a NIC within an inter-department structure in creating a common language for applied research. Yet, adopting a common language for applied research across the AITS is culturally and socially complicated (Patton, 2011). It is culturally complicated because of the different beliefs, perspectives and values, and socially complicated because of the number of diverse agents involved (Schein, 2017). At the outset, it is unknown whether implementation will progress as planned or yield the predicted results given the emergent and adaptive interactions (Uhl-Bien & Marion, 2009). It is also unknown whether faculty will endorse the plan or whether the executive team may change the plan. With this in mind, the plan will be monitored and evaluated through the coordination of information flow, adaptation, and facilitation at each stage.

Table 2 presents the summary of change implementation plan steps, goals, process and timeline. By including an assessment of the environmental context, the estimated six month short-term goals include the CI leader recruiting key stakeholders keenly interested in relationship building and establishing a commitment towards common goals and priorities established by the inter-organization network. This step involves setting priorities, assessing current state, and developing common goals and processes for sharing new knowledge about the change. While "culture, norms, and identity are emergent properties of a NIC, the team is encouraged to take strategic action to foster their development" (Russell et al., 2017, p. 9). Key measures collected

in this stage include the number of faculty engaged in NIC work/activities, number of NIC meetings/events, number of completed templates and tools developed, number of faculty receiving dedicated time on their SWF for NIC work/activity, and a completed project charter. It is anticipated that within the medium-term goal, the positive effects of collaborative learning have resulted in the NIC establishing a common inventory and data collection of diverse information regarding the meaning of applied research that is widely used throughout the AITS. At this stage, communication, collaboration, and coordination continue to be critical to achieving the implementation plan activities. Key metrics in this phase include the diverse collection of definitions of applied research and consensus on the common definition achieved among the NIC.

Table 2

Summary of proposed change implementation plan steps, goals, process, and timeline

	Steps	Goals	Process steps	Time	NIC Stakeholders
Short-term	**Unfreezing: Awareness and Understand problem (Improving)**	Engage faculty and a social structure of key participants to build a network improvement committee (NIC)	Building awareness and understanding problem	2 months	▪ CI Leader ▪ Manager, IRO ▪ Faculty (AITS) ▪ Associate Dean/Dean ▪ Executive Director, IV ▪ Dean, Centre of Research and Innovation ▪ Dean, Centre for Academic Excellence ▪ Union Rep ▪ Librarian ▪ Business Manager
			Determining the problem: gathering/evaluating info	4 Months	
			Establishing a guiding NIC	6 Months	
Medium-term	**Moving: Set Aim and Evaluate Measure (Learning)**	Establish a common inventory and data collection regarding the meaning of applied research	Develop timeline and secure resources	8 Months	
			Scan and gather information/assess	10 Months	
			Determine and agree on common language	12 Months	
Long-term	**Refreezing: Learn and Collaborate (Changing)**	Using the common language of applied research, incorporate faculty engagement into the day-to-day institutional activities	Mobilize AITS for change	14 Months	
			Implementing a process to support faculty engagement	16 months	
			Institutionalizing common language of applied research	18 Months	

Note. This is a synthesis of the change implementation plan identified in Appendix G. Loosely adapted from Lewin's (1947) 3-Step Change Process, and the Carnegie Foundation's Six Core Improvement Principles (Bryk, 2015).

Long-term goals will manifest within an estimated 18 months when mechanisms are established to incorporate faculty engagement and faculty voice into institutional day-to-day activities and practices. A key metric of achieving these goals are clear processes and a dedicated

measure of research time on the SWF. The goal chart provides a collective lens and an orientation to what is occurring as the change unfolds within each phase. While goals often reflect noble intentions, Morgan (2006) purports that the achievement of any goal must always be moderated by an "understanding of the limits that need to be placed on behaviour" (p. 96). This leads to the next section on limitations.

Limitations. This OIP has three main sources of limitations which warrant the development of mitigation strategies. These limitations include: scope, time, and personal bias.

Scope. The parameter of scope of this OIP implementation is limited to the AITS within a College, which may not reflect the overall values, attitudes, beliefs of the institution's deeper culture. Therefore, it is difficult to arrive at generalization from this current OIP. However, there are distinct advantages of starting small within one departmental school and having faculty who are closest to the issues solve the problem collaboratively with key Executive leaders who support this journey. This not only provides faculty an opportunity to express shared values but it facilitates an opportunity to listen to faculty's desires and fears of what needs to change before a renewed investment in a collective vision is achieved. Secondly, by assessing a change in one school, there is an opportunity to strengthen CI and accountability by creating conditions for the growth of professional and social capital through shared values, norms, cooperation and reciprocity (Hargreaves & Fullan, 2013). Thirdly, a well-conceived NIC working collaboratively in a smaller group and facilitated by CI Leader who is also a faculty member can help build trusting relationships and social connections that allow members to respect the contributions that each brings to the collective effort (LeMahieu, Grunow, Baker, Nordstrum, & Gomez, 2017).

Time. This OIP assumes faculty will receive administrative support for appropriate release time on their SWF to participate in NIC planning activities and priorities. Moreover, faculty

release time is strongly tied to political and economic forces faced by the institution. One way to mitigate this challenge is to ensure there is a commitment of appropriate resources from the Dean/Associate Dean of the AITS, to support faculty receiving flexibility in scheduling the NIC activity on different days and at different times within the semester SWFs. Another issue that may arise relates to the CI leader receiving adequate time and commitment from the five Executive Opinion Leaders and Manager of Institutional Research to assist with inter-organizational NIC resource activities. To mitigate this coordination challenge, it will be critical to develop a project charter and maintain regular meetings with consistent messaging to audiences within and outside the NIC. Moreover, according to Gaubatz and Ensminger (2017) employees' commitment and motivation for change are more receptive if they are awarded with time and incentives. Intrinsic motivations for change may include improving social innovative change (Sandmann & Weerts, 2008) while extrinsic motivation for change may include faculty receiving appropriate release time on their SWF (Holmes, 2017). Invariably, practices involving NIC activities can be complex and the facilitator and members may experience coordination fatigue (Russell et al., 2017).

As a result, Provan and Lemaire (2012) suggest targeted supports may be required for members of the NIC to receive coaching, mentoring, training in monitoring and evaluating skills to maintain inter-organizational activity. However, maintaining adequate resource allocation for such targeted supports may present risk and uncertainty for the facilitator and NIC implementation team in a fiscally constrained and political context (Skolnik, 2013). As such, appropriate standards for budgeting and financial management represent preconditions that provide the required resources for NIC inter organizational activities to be carried out (Markiewicz & Patrick, 2016). In addition, as a facilitator, it would also be crucial to develop a framework that specifies that the network has the right mix of skills and expertise to engage and undertake the improvement. This

would include a description of the importance of the network's activities and how participation differs from standard faculty projects (Bryk, 2015; Russell et al., 2017).

Personal bias. As a faculty member currently working on applied research projects in the community, I bring certain biases to the change process which can be compounded by my passion to improve quality and accountability in higher education. That said, I contend, as a faculty member, that what leads College faculty to expand their personal boundaries and engage in applied research is not always financial incentive but rather a self-directed motivation to pursue social justice and community change. According to Sandmann and Weerts (2008), faculty leaders see their community-based or public scholarship as examples of demand-driven engaged research which will "impact social change and their personal need for their work to make a difference" (p. 196). Reinforcing the centrality of the scholarly quest, these authors reaffirm these faculty leaders as boundary spanners. The research supports the various theoretical underpinning related to validity, adequacy of data, and interpretation. Nonetheless, the inquiry may not reflect the broader views of faculty, administrators, union reps, executive leaders or students. However, this OIP is guided mostly by pragmatic-idealistic justification and a positivist systems thinking lens towards improvement, learning, and change. Notably, however, for this OIP journey, leadership is about building relationships and confidence through serving, emergent learning, shared leadership, and adaptability (Glor, 2007; Uhl-Bien & Arena, 2017).

The subsequent section outlines my change agency to monitor and evaluate change. It is my intention to connect with key stakeholders to support adaptability and build deeper professional accountability through an emergent plan-do-study-model cycle (Langley et al., 2009). Adaptability occurs when agents interacting within a system focus on CI and are able to resonate toward a new alternative way of thinking that meets the needs of a complex challenge (Uhl-Bien & Arena, 2017).

In contrast, emergence results from agents learning through interaction, understanding, and supporting social capital and the next steps in the change process (Turner & Baker, 2019).

Change Process Monitoring and Evaluation

Continuous improvement is used throughout this OIP as a broad tapestry that weaves together several threads relevant to the distinct functions of monitoring and evaluation. As they are interconnected in practice, both monitoring and evaluation are closely interlinked and complementary to one another (Markiewicz & Patrick, 2015; Rossi, Lipsey, & Henry, 2018). To support accountability, quality monitoring involves the tracking of change implementation including activities, processes, outputs, and initial outcomes measured by performance indicators (Markiewicz & Patrick, 2015). Conversely, evaluating is concerned with learning and a deeper excursion into systems thinking that includes forming judgements about program performance based on the synthesis of data gained through monitoring (Patton, 2011). As noted in Chapter 2, not all change is alike and deemed multi-faceted, which requires a flexible approach to evaluation.

Plan-Do-Study-Act

To monitor and evaluate the change plan process, this OIP adopts the Plan-Do-Study-Act (PDSA) methodology cycle (Moen, 2009). The PDSA cycle is a vehicle for accountability, learning and action that helps a NIC working collaborating from the bottom-up to develop tests and implement changes through a trial-and-learning methodology (Langley et al., 2009). Enacting a PDSA cycle involves "planning a process, including establishing criteria to measure its achievement, doing or executing the plan, studying actual compared to expected results, and acting on the findings by adopting successful changes and repeating the process with iterative cycles" (Taylor, McNicholas, Nicolay, Darzi, Bell & Reed, 2014, p. 292). Similarly, Reed and Card (2015) point out the PDSA cycle stages can be considered an efficient way to collect data

by small intervention cycles that help increase confidence and create small wins among the NIC, which in turn facilitates support for the planned change.

For the purposes of this OIP, the PDSA will focus on the first change cycle, represented by one full calendar year. Figure 6 illustrates the four phases of the PDSA cycle in relation to the two frameworks for leading change discussed in Chapter 2.

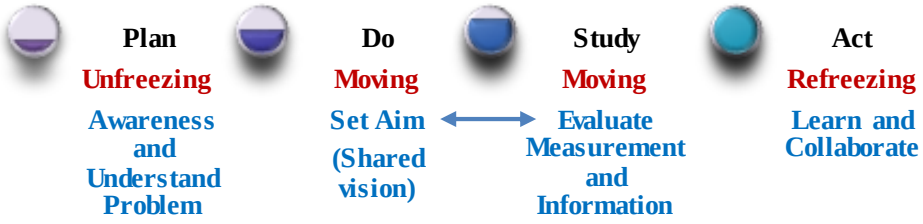

Figure 6. Four stages of the PDSA. Connected with Lewin's (1947) 3-Step Change Process and Carnegie Foundation's Six Core Principles of Improvement Framework (Bryk, 2015).

Plan. This stage begins with a plan of what needs to improve and devising a method to receive feedback to understand whether improvement is materializing. However, planning a change in a departmental school of a College can be very challenging given preexisting beliefs among faculty. Rossi et al. (2018) renders a circumstance such as this as "confirmation bias where faculty have the tendency in favouring their own beliefs while discounting contrary evidence" (p. 5). As a result, this requires purposeful leadership to connect the work to a strategic initiative, aligning incentives, and allocating appropriate resources (Langley et al., 2009). One way to formalize the aim of this OIP and to make predictions is by developing a driver's diagram. Martin and Mate (2018) describe a *driver diagram* as a useful tool to reveal a picture of the team's shared view of what "drives" or contributes to the achievement of a particular aim. Appendix H driver's diagram depicts the relationship between the overall aim of the OIP into a logical set of related goals and sub-goals in addressing the improvement. The primary drivers tend to be the most influential contribution directly related to the aim.

Conversely, the secondary drivers are components of the primary driver, whereas the specific change ideas outline what is required to address the secondary drivers (Martin & Mate, 2018).

The plan stage is also aligned with Lewin's (1947) unfreezing and the Carnegie Foundation's (Bryk, 2015) awareness and understanding of the problem phase. Very rarely is the change process simple and "planning only works where you have a high degree of control and know what the critical factors are" (Patton, 2011, p. 29) which is why developing an effective plan supported by time and resources not be underestimated (Langley et al., 2009). At the plan stage, Reed and Card (2015) recommend a clear definition of the problem and its causes, as well as, identifying stakeholders (i.e., NIC) that will design an intervention and a method for data collection. Since, this phase entwines the building of language challenging key artifacts (i.e., SWF), Reed and Card (2015) recommend operational support "with direct involvement of senior managers to ensure adequate planning" (p. 148). The intended outcome is mutual learning and informed action among the different project participants who seek to harness social capital within the AITS. That said, the potential for individuals to adapt and innovate relies also on senior leadership to "validate emergence through formulization and providing resources to support initiatives" (Uhl-Bien & Marion, 2009, p. 641).

Many of the different roles individuals play may not be mutually exclusive. Members involved include faculty who have a stake in the outcome, key senior leaders with expertise and information relevant to the problem, and executive staff who have the authority to make necessary changes to solve problems or have access to key information. Moreover, the individuals involved in the implementation plan operate on the principle that no one person or subset of people holds all the power and accountability (Manning, 2018). Instead, the NIC supports developmental learning and evaluation by using evaluative thinking and thoughtful questioning as a stimulus for

change (Patton, 2011). With analysis tied to action and linking theory with action, Lewin (1947) emphasizes an emergent process takes shape as understanding among members increase through an engaging and iterative process. Therefore, the team works together to develop a distributed leadership structure (Gronn, 2002), in which responsibility is shared among all members and where the CI leader serves as a facilitator. Consequently, clarifying roles across the distributed leadership structure is critical to managing interdependency and coordinating safe spaces for adaptive work (Heifetz, 1994; Wenger, 1998). Lastly, while students may not be explicitly involved in the work of engaging faculty in applied research, it is intended that the outcomes of this OIP will benefit them in the future given the evolving skills needed to enter a rapidly changing workforce.

To create a positive accountability mechanism regarding what materializes in the group, as the CI leader, I require time to facilitate and establish formalization agreements (i.e., charter), norms, and principles of how the NIC will work together and collect information. This formalization of synthesizing information on paper encourages participants to reflect, cogitate, and think deeper (Weick, 2012). In addition, I recognize collaborating with the team also helps to set the tone and creates the conditions for principles to inform meetings, agendas, and minute taking. For that reason, key planning considerations for the first cycle is mapping out the key stakeholders that are required in the change and their role in the change process, including resources available. A helpful tool to help teams think systematically about their change project is the What, Who, When, and Where Form. An example of this Form is found in Appendix I which allows members to view assignment of responsibilities. It is important to note that some individuals may not need to be part of the team throughout the entire cycle, but are recommended to be included in the discussion of those steps in the process in which they are involved. This interdepartmental cooperation among the NIC members is especially important in the ongoing work in the do stage.

Do. Intertwined with Lewin's (1947) second step of moving and the Carnegie Foundation's (Bryk, 2015) stage of setting an aim, in this stage, steps are made to communicate a common vision. Boies and Fiset (2018) argue that a shared vision can stimulate collective understanding by providing a team a new way of thinking and working. One way that I can promote a common vision is through the critical organizational act of sensemaking (Weick, 1995). Maitlis (2005) describes sensemaking as a process by which leaders communicate and simplify critical information that stimulates further group exchange, thus cultivating learning and enabling shared goals among the group. In the do stage, the planned changes conceptualized in the first phase are implemented through engagement and learning. In this case, the engagement of faculty and key stakeholders working in a NIC validates the current state before interpreting individual interests into productive collective goals while promoting a culture of safety (Sharratt & Planche, 2018).

In a culture of safety, a defining behavioral aspect related to leadership is trust (Senjaya & Pekerti, 2010). Still, trust is multi-dimensional and comprised of respect, regard for others' well-being, competency, and personal integrity (Dirks & Ferrin, 2002). As a CI leader, my intention is to be a facilitator for incremental change, encouraging mutual respect and interpersonal trust in relationships, where faculty members serve as the content specialists to enable adaptation in applied research more broadly. In helping to facilitate and strengthen a NIC, I recognize team members will also require shifts in attitudes and beliefs, testing changes for the purpose of learning, and a process of continual adaptation (Heifetz & Linksy, 2002). As network members build stronger working and learning relationships through joint problem-solving, they become better prepared to "efficiently and effectively share innovations and test the innovations generated by others" (Russell et al., 2017, p. 5). Notwithstanding, during this stage, it is important to address challenges of developing collaboration among the NIC given (1) the SWF artifact and the

organizational context are inseparable influences mutually exerted, and (2) diverse definitions of applied research across the organization challenge the mindset of faculty. Although access to information during the do stage plays a key role in the outcome of many decisions, as identified in Chapter 1, Five-star operates within a hierarchical and bureaucratic structure where leaders are charged with making rational choices through standard operating procedures (Manning, 2018). Thus, it would be naïve for me to assume that the information playing field is always levelled with the stakeholders involved having equal access to all relevant information. Other important considerations within the do phase include overcoming resistance to change, inductive learning, and feeding observations into the study phase (Santhidram & Borromeo, 2013).

Langley et al. (2009) posit, it is at the do stage where key indicators and information are measured against predictions. Some key measures include the collection of diverse definitions used for applied research across the College and the summary of feedback from faculty surveys, interviews, participatory observations and document reviews. Therefore, collating a list of important documents, observational notes, and key performance indicators will be critical for monitoring current to future state outcomes. Appendix J outlines indicators to track intended results that are essential for monitoring and evaluation. Three different types of indicators to assess progress towards results include impact, outcome, and output indicators (Rossi et al., 2018).

Study. The study phase is aligned with Lewin's (1947) step of moving and the Carnegie Foundation's (Bryk, 2015) stage of evaluating measurement, but also focuses on assessing whether the change implemented has made an improvement. In this stage, the outcomes of the plan are compared against the predictions made in the planning stage and where information is analyzed (Langley et al., 2009, p. 50). This process is based on transparency - making assumptions explicit and keeping expectations and outcomes of the faculty survey results realistic. It is anticipated that

there will be some resistance from faculty to participate in the survey assessments and focus group sessions. Nonetheless, evaluation feedback from the various surveys, focus groups and interviews helps the NIC to understand emergent issues and is a powerful means to increase their capacity to assess the broad spectrum of faculty task-relevant information occurring within the AITS. Inherently dialogic, it is also anticipated that NIC members will challenge planning assumptions against personal beliefs and values (Schein, 2017). Nevertheless, power relations, in the departmental context are integrally part of this critical and reflective evaluative process as the NIC deepens awareness of and sensitivity to faculty's adaptive process of applied research practices.

In this joint problem-identification-and-evaluation arrangement, supporting a safe space for adaptive work is created by involving faculty members from AITS on the NIC. As the CI leader, advocating for clarity about what faculty experience, finding areas of mutual team understanding to manage predicaments in the system, rather than achieving definitive solutions, marks improvement (Bryk, 2015). However, this is dependent on my ability to engage and influence faculty as key subject experts in continuous cycles of observation, assessment, and intervention in a system that leads to the emergence of new behaviours (Heifetz & Linksy, 2002).

Yukl and Mahsud (2010) also concede the need for a more flexible and relational leadership approach that allows for openness, honest sharing, and learning. Notwithstanding, the critical and reflective evaluation of diverse feedback from faculty and high-level commitment across the AITS to use a common language for applied research will help demonstrate quick wins. Kotter (2014) asserts quick wins help keep the team motivated. At the same time, achieving a quick win, such as a common language for applied research across the AITS, positions the NIC for the next iteration of activities in the act stage.

Act. The final stage is aligned with Lewin's (1947) step of refreezing and the Carnegie

Foundation's (Bryk, 2015) stage of collaborating and learning from the first cycle. As such, the "PDSA cycle should not be thought of as a process involving just a single rotation of the cycle" (Reed & Card, 2015, p. 11) but instead a continuous loop of learning to confirm each stage of the cycle is performed effectively. The act phase, therefore, concentrates on what should be devised for the next PDSA cycle. As a result, this cycle takes into consideration any modifications that are considered crucial from the study stage that might lead to improvement (Moen, 2009).

In this stage, learning from the study phase is used to adjust the aim and goals from a smaller scale to a new cycle to complete an implementation plan (Langley et al., 2009). As such, members are engaged in double-loop learning which may lead to a revised definition of applied research. As outlined in Chapter 1, single-loop learning occurs when an organization can achieve its objectives through uncovering and correcting errors, whereas double-loop learning occurs when the underlying policies, norms, and objectives of the organization are questioned (Schön & Agryis, 1996). Faced with contesting views of language, this phase prepares the test to institutionalize a common language for applied research in day-to-day activities.

At this stage, the NIC determines whether to (1) adopt the common language of applied research within the AITS, (2) evaluate through additional feedback whether the language is adapted by faculty or (3) whether the definition is discarded, and a new definition is required. This final stage, therefore, determines whether the changes become institutionalized within the AITS and whether the process can be piloted within another department. Lastly, the final component of an evaluation plan is a communication plan, which is essentially a plan to move from findings to influence (Rossi et al., 2018). The focus of the next section is building awareness of a plan to communicate the need for change and communicating progress toward intended outcomes.

Plan to Communicate the Need for Change and the Change Process

One of the areas of greatest opportunity within Five-star College is to engage and encourage faculty to promote strategic priorities relevant to the student experience. Unlike centralized, system-wide changes, this communication plan focuses on a holistic, integrated approach (Putnam & Nicotera, 2009) that values the communication and feedback of faculty within an academic information technology school (AITS) to address a common language for applied research. This is relevant given the evolving discourse of applied research within the organization's new signature learning experience (SLE) mandate. Therefore, this section draws on the goals of implementing a plan that involves sharing the need for change, understanding the impact of the change, flow of communication, and keeping individuals informed on progress throughout the plan (Cawsey et al., 2016).

Following an action and ethics-based approach, this plan aligns with Klein's (1996) key principles in communicating change and McPhee and Zaug's (2000) four communicative constitution of organizations (CCO) flow framework. In this regard, the CCO diverse four flow processes are prerequisites for organizational goal attainment (Putnam & Nicotera, 2009). Equally important, Klein (1996) advises "a communications strategy should coincide with the general stage of a planned change and the relevant associated information requirements" (p. 36). Taken together, and underpinned by a set of simple principles (including improving, learning, and changing), this plan to communicate change incorporates Lewin's (1947) 3-Step Change Process and the Carnegie Foundation's (Bryk, 2015) Six Core Principles of Improvement Framework outlined in Chapter 2. Moreover, to match the engagement intended for this problem of practice, the communication strategy aligns with my continuous leadership approach which blends servant (Greenleaf, 1977), team (Kogler Hill, 2019), and adaptive (Heifetz, 1994) attributes.

This calls attention to examining different orientations of CCO. McPhee and Zaug (2000) argue that each dynamic flow or interaction process is necessary for an organization to effectively relate and communicate to four different audiences. The four flows are defined as:

1. Membership negotiation: Explains the work of individuals to direct or persuade members roles, statuses, and relations to the organization;
2. Self-structuring/Organizational restructuring: Formulates how leaders outline, employ and act on problems with decisions and command;
3. Institutional position: Addresses the external environment and determines an effective communication strategy to gain inclusion of social interaction; and
4. Activity negotiation: Determines what work members are doing together to adapt to specific work situations or problems.

Building on the foundational work of Mintzberg and Westley (1992), these four flows are interactive, bridging inter-related communities of activity and contributing to the communication plan in different ways during a change process. At the same time, organizations operate differently, each characterized by its own departmental culture and modes of learning through sensemaking (Kezar, 2014). Within each departmental culture, communication occurs in a discipline-specific context that involves recurrent patterns of interaction among agents (Taylor, 2009). However, participants are at times elusively concerned that changes are taking place, "leading to ambiguity, rumours, anxiety and ultimately resistance" (Jick, 1993, p. 200).

In effect, identifying collectively a common language for applied research will presumably improve the flow in communication within the AITS, supporting teamwork, learning, and trust. To establish a culture of trust, Klein's (1996) research focused on improving the process and timing of communication using diverse interactive methods. In support of these objectives,

Klein (1996) suggests six values to drive a communication strategy, which are as follows:

1. Message redundancy: Involves using multiple messages and diverse media to increase retention;
2. Face-to-face communication: Although costlier, it is a preferred medium and considered most effective as it involves two-way involvement to clarify ambiguity;
3. Capitalizing on line authority: This effective communication method involves using those in authority to relay the message within the hierarchy;
4. Securing support from key direct or immediate supervisors: Hearing the most important information from their direct supervisor or boss;
5. Identifying key and influential opinion leaders: Individuals who provide meaningful and relevant information are influential and can be critical in persuading employees; and
6. Connecting the message to values of the individual and organization: Ensuring personally relevant information is easily relatable.

In addition, Cawsey et al. (2016) argue channels of communication will vary depending upon which phase the change is in and described four phases: (1) pre-change approval, (2) creating the need for change, (3) midstream changes and milestone communication, and (4) confirming/celebrating the success of the change process. These phases are defined in Table 3:

Table 3

Four phases in the change process

Four phases	Definition
Pre-change approval	Targeted to management to convince them that change is needed.
Creating need for change	Involves creating the awareness/rationale for the need for change.
Midstream changes	How change will impact individuals personally.
Celebrating successes	Marked by communicating early wins to reinforce commitment.

Note. Adapted from "Organizational change: An action-oriented Toolkit", 3rd ed., by T.F. Cawsey, G. Deszca, and C. Ingols, 2016, p. 321. Copyright 2016 by Sage.

Change Process Communication Plan

The purpose of the plan is to determine how a CI leader communicates key information to diverse College community members on the task of building a NIC within an AITS that is focused on creating a common language for applied research. This is aligned with a larger institutional effort to implement applied research practices in support of the organization's strategic priorities and commitment to the student's SLE mandate. Considering the diverse constituents and flow of interaction that link the organization to its members, the communication plan and related language should fit contextually and be ethically-based on the organizational values and culture of faculty, administrators, and students (Fisher, 2010, Ciulla, 2013). Thus, the following section outlines the communication plan activities for this OIP using Klein's (1996) and McPhee and Zaug's (2000) approaches embedded within each of the ethics-based key phases of Lewin's (1947) 3-Step Change Process and the Carnegie Foundation's (Bryk, 2015) Six Core Principles of Improvement Framework of (1) Unfreezing: Awareness and Understand Problem; (2) Moving: Set Aim and Evaluate Measures; and (3) Refreezing: Learning and Collaborate.

Unfreezing: Awareness & Understand Problem (Improving). The process of unfreezing which is the first phase of the communication plan, approximately six months in duration, involves preparing and readying individuals for change (Klein, 1996). As outlined in Appendix G Change Implementation Plan, three steps within this stage include building awareness, determining the problem by data gathering/evaluating information to validate the current state, and establishing a guiding NIC. Hence, the focus is on improving the current state. To avoid ambiguity and manage resistance to change, Klein (1996) asserts the first step is to provide clear communication explaining the need and rationale for the change. As a faculty (agent) of the organization where my membership is negotiated using a SWF, the first step of phase 1

involves communicating to key opinion leaders in the pre-change phase. As a CI leader interacting with others as a servant, team and adaptive member, my goal is to raise awareness that current diverse language is being used for applied research which is causing confusion and possibly anxiety for faculty. Given my agency as a faculty member working with active research in the community, I would use my institutional position (McPhee & Zaug, 2000) and influence to make a legitimate case that there is a need to address a common language for applied research through a guiding coalition.

Therefore, through the Associate Dean and the Dean of the AITS, I will request an opportunity to make an in-person presentation to Executive opinion leaders where I will provide a high-level environmental scan of the diverse definitions used across the organization and summary of barriers faculty face to address applied research practices (see Appendix F). Given the language of applied research is threaded through the institutional positioning of Five-star's new strategic goal and priority of students', I assume a positive reaction from the Executive opinion leaders and that activity coordination of this change plan would be placed as a priority. Second, I assume I would receive adequate resources to formalize a coalition structure to secure human, social and material resources to establish and coordinate change implementation work duties.

To understand the problem and gather meaningful information to validate current state, it is essential that faculty members be required to be part of the change process. Consequently, to improve the flow of activity coordination, an effective communication strategy to support the change is faculty receiving useful and timely information from their Associate Director using several mediums followed by consistent messaging face-to-face (Klein, 1996). Thus, with support from my Associate Dean and Dean within the AITS, I would request an eNewsletter be delivered under their joint signatures to all faculty within the AITS to provide a summary of the problem

and invite faculty to participate in a coalition committee. Appendix K, eNewsletter formulates an example of the knowledge mobilization I would use as a CI leader to facilitate social capital.

Following the dissemination of this eNewsletter, I would request assistance to provide an in-person collaborative presentation at the AITS team meeting that would seek feedback from recipients on the impact of the change. McKay, Kuntz, and Näswall (2013) contend that inviting participants in the change process increases awareness, engagement, activity negotiation, and helps reduce negative attitudes and beliefs within members.

To establish a guiding coalition, members need to feel that their voice is being heard (Ciulla, 2013). However, organizations do not draw members and coordinate work automatically (McPhee & Zaug, 2000). Arguably, by securing self-structuring exhibited by building coordinated activity, tools, organized tasks, and a communicative process, a NIC can develop a purposeful and collective goal (Putnam & Nicotera, 2009). With one common aim, members work on developing processes, principles, and meeting schedules to determine key activities. Some key members that are involved in developing tools include the Manager, Institutional Research, faculty, and the Librarian. Moreover, the Corporate Finance Manager is involved in order to secure resource dollars for the change implementation plan activities. At the same time, ambivalence may manifest among faculty if the key artifact of the SWF continues to exclude language for applied research activity. Hence, the union president, with legitimate influence is an important relational partner to involve, so there are no misconceptions of the goal of this change.

Moving: Set Aim & Evaluate Measures (Learning). In the moving stage, change is seen as a process rather than a singular event (Lewin, 1947). Phase 2 of this communication plan is about informing the AITS and equipping the NIC so that the activity coordination can accelerate to address a common language for applied research within twelve months. McPhee and Zaug

(2000) define activity coordination as the "process of adjusting the work process and solving immediate practical problems" (p. 38) through communication. As the change unfolds, Cawsey et al. (2016) claims that members need to understand the progress and the content of the change to maintain interest. This stage includes a cooperative stance among NIC members devoting efforts in developing timelines and securing resources to address a common aim, gathering and evaluating information, and determining a common language for applied research. This stage is also about individual and collective learning through formative and summative assessments through self-structuring activities. Self-structuring communication includes formative assessments which the NIC will use to coordinate activities (McPhee & Zaug, 2000). These formative assessments include a collective vision for the NIC, project charter, minutes, notes, surveys, interview questions, and evaluation tools. Compatibly, the CI leader relationship with the NIC is also contingent on skilled members working out solutions collaboratively.

It is anticipated that surveys and key interview questions developed by the NIC will help assess the effectiveness of their communication approach among faculty, to what extent applied research is understood, and how engaged faculty are on the topic of a common language for applied research. Due to the complexity of the activity coordination related to surveys, interview questions, and evaluation processes, it is vital for me at this stage to use the resources of Institutional Research Office (IRO) within the organization. As such, the CI leader relationship with the Manager of IRO is essential to the structure and work of the NIC. With support and resources from the Manager of IRO, the NIC will review the collected summative information to improve learning and determine a strategy to communicate key outcomes. Sharing a summary with faculty and connecting with faculty to participate in a focus group will further affirm that their feedback is important to the process and valued by the NIC. Given this stage is focused on

the desired state that the AITS is moving forward with a common language for applied research, a key component is celebrating the success of this new and improved reality.

Refreezing: Learning & Collaborate (Changing). Refreezing is about changing and requires that the changes that took place in the previous stage are stabilized, so that they become embedded into the existing organizational systems and behaviours. In this case, the focus of this stage is mobilizing the AITS for the change, implementing a process and infrastructure within the AITS that supports faculty to enact applied research using a common language, and institutionalizing day-to-day common language of applied research across the AITS within 12 months. By doing so, the common language for applied research builds a framework for subsequent interaction within the AITS processes and practices (Shirey, 2013). At this stage, celebration emerges as a recognizable sign that supports a deeper commitment to new behaviours that are relatively safe from resistance (Cawsey et al., 2016). Celebrations also assist to ensure that faculty attitudes and behaviours are sustainable over time, and confirms the change is adapted.

Using Klein's (1996) principles, key communication method strategies of these phases are summarized in Appendix L. As identified in Appendix L, in the first phase of *unfreezing*, which involves the pre-change phase of preparing and creating awareness of change, there is a need to ensure that the right individuals are willing to engage in the synergy to prepare for the change. In the second phase of *moving*, within midstream acceptance of change, as the CI leader, I would help faculty develop an understanding of the full impact of the change and positive outcome of making the change to them individually while dealing with challenges of resistance. In this stage, there will be significant barriers to overcome such as possible personal bias, skill-set training, and proper infrastructure to support NIC activities to address the problem. In the third phase of *refreezing*, which involves confirming the change phase and commitment, faculty are able to test the change

and discuss the problems encountered and together with administrators, opinion leaders, and the key executives are able to build commitment to action. This phase of refreezing confirms the change phase. This phase includes adopting and implementing the vision of faculty engaging in using a common language for applied research practices as part of their tasks while addressing effective strategies and processes to address attitudes towards the SWF.

In summary, using a CI leadership approach, the change implementation plan presented a key goal of establishing a NIC to address a common language for applied research. The phases of Lewin's (1947) 3-Step Change Model combined with the Carnegie Foundation's (Bryk, 2015) Six Core Principles of Improvement Framework for leading the change model also undergird the implementation, evaluation, and communication plan to ensure four different communication flows (McPhee and Zaug, 2000) and effective communication principles (Klein, 1996) are timely, appropriate, and strengthen faculty's voice in the change plan. This, in turn, assists the institution to meet its overall organizational commitment and accountability to students. Nonetheless, Taylor (2009) argues that what sounds rationale as a common language in one academic departmental school may have little resonance in another which the following section considers.

Next Steps and Future Considerations

As Five-star moves the implementation of this OIP to other inter-departmental units, consideration will need to be given for the political, cultural, and socio-cognition context-specific change. From a political perspective, change includes social legitimacy and survival (Ball, 1993). From a cultural perspective, change includes shifting identities, artifacts, values and traditions (Schein, 2017). From a socio-cognition perspective, change includes domain-specific learning, reframing, and sensemaking (Zhang & Soergel, 2017). Thus, three key issues for consideration include process, structure, and attitude, representing a foci of change (Kezar, 2014).

Process: Improving through communication and engagement

One of the critical future considerations of this OIP is addressing the relationship between teaching and research. This relationship is complex and multi-faceted given the limited articulation and understanding of roles, structures, and appropriate resources. Hence, one critical next step is to create sustainable organizational learning that goes beyond the traditional teaching system, and structuring institutional language for applied research within the CA and SWF, which is beyond the scope of this OIP. Although the union has remained silent on the issue of applied research practices, they will need to be engaged at different stages of the change process. Moreover, to engage faculty, a set of principles and values supported within a collegial culture is critical as it maintains the ability to foster human capital, academic freedom, and scholarly teaching to students.

Structure: Learning through collaboration by way of NICs

Although the NIC's allow faculty to align their attitudes and intentions (Bryk et al., 2015), inter-departmental relationships do not start on their own and require specific investments in time and resources (Ritter & Gemünden, 2003), which is a second future consideration. In addition, inter-departmental communication is discipline-specific and characterized by its mode of sense-making which requires developing relationships with appropriate facilitation (Russell et al., 2017). Vlaar et al. (2006) refer to these challenges as "problems of understanding" rooted in the (a) "discontinuity, uncertainty and ambiguity in the early stages of collaboration; and (b) differences in structures, contexts, routines, expectations and perceptual frameworks" (p. 1621). Overall, this interactive process and communicative ideology is complex and requires an increase in faculty engagement and collective-will. Conversely, it is suggested that leaders encourage and provide faculty resource support to work collaboratively with others while exploring the space within the Innovation Village to test applied research opportunities.

Attitude: Changing through coordination

"Many change efforts fail because individuals' cognitive structures constrain their attitude, understanding, and support of the change initiative, a phenomenon referred to as cognitive inertia" (Maes & van Hootegam, 2011, p. 195). Arguably, a future consideration is investigating faculty's attitudes and examining underlying conditions or mental models that limit faculty to enact applied research. This may require incentives for faculty to change as well as investment into faculty receiving time for professional learning, mentoring and skill training while addressing workload and the complex challenge of modernizing classroom pedagogy.

Conclusion

Despite the leitmotif of postmodern education, the self-realization of this CI leadership journey is that learning, improving, and changing is dependent on relationships towards collaborative strengths. Placing the use of language within the context of purposeful action, this OIP recommends a guiding NIC that engages faculty within an AITS to develop and address a common language for applied research. The rapid evolving change of college education necessitates that faculty keep abreast of innovative applied research skills to meet student needs as evident in the SMA (Five-star, 2020c). This engagement will bring stronger linkages between teaching and applied research, consistent with CI in collective accountability and learning. Creating and cultivating an applied research culture within a large Ontario college institution, however, requires congruence in mindsets and the development of a shared compelling vision. This strategy invests in connecting agents within design spaces where the vision is translated into action for change. Adapting to change, however, takes trust with the understanding of task-related and team-shared goals among faculty. Over time, this process of development becomes part of one's professional identity and social capital where the journey of CI leadership never ends.

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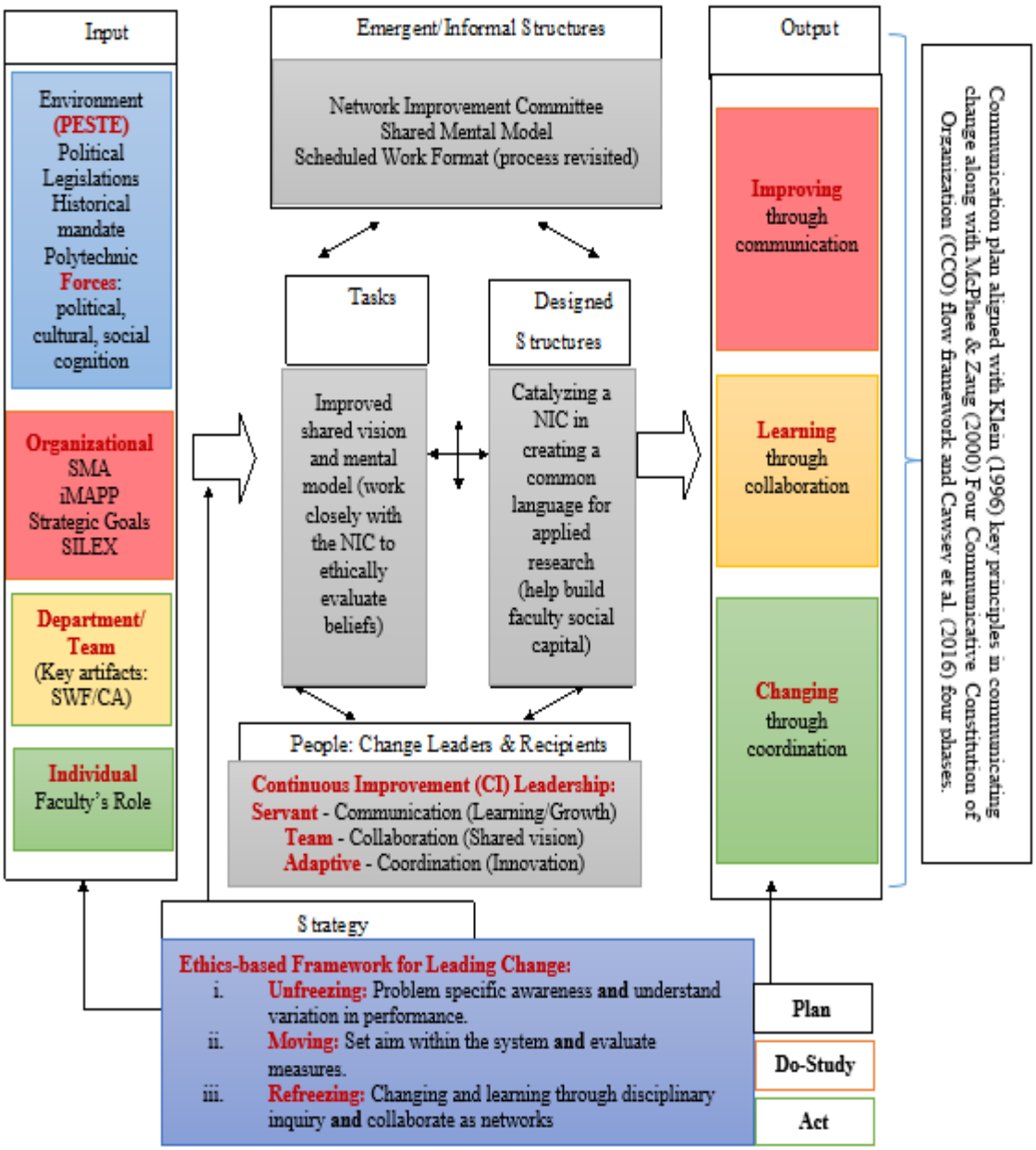
Appendix A: Continuous Improvement Transformation Conceptual Framework



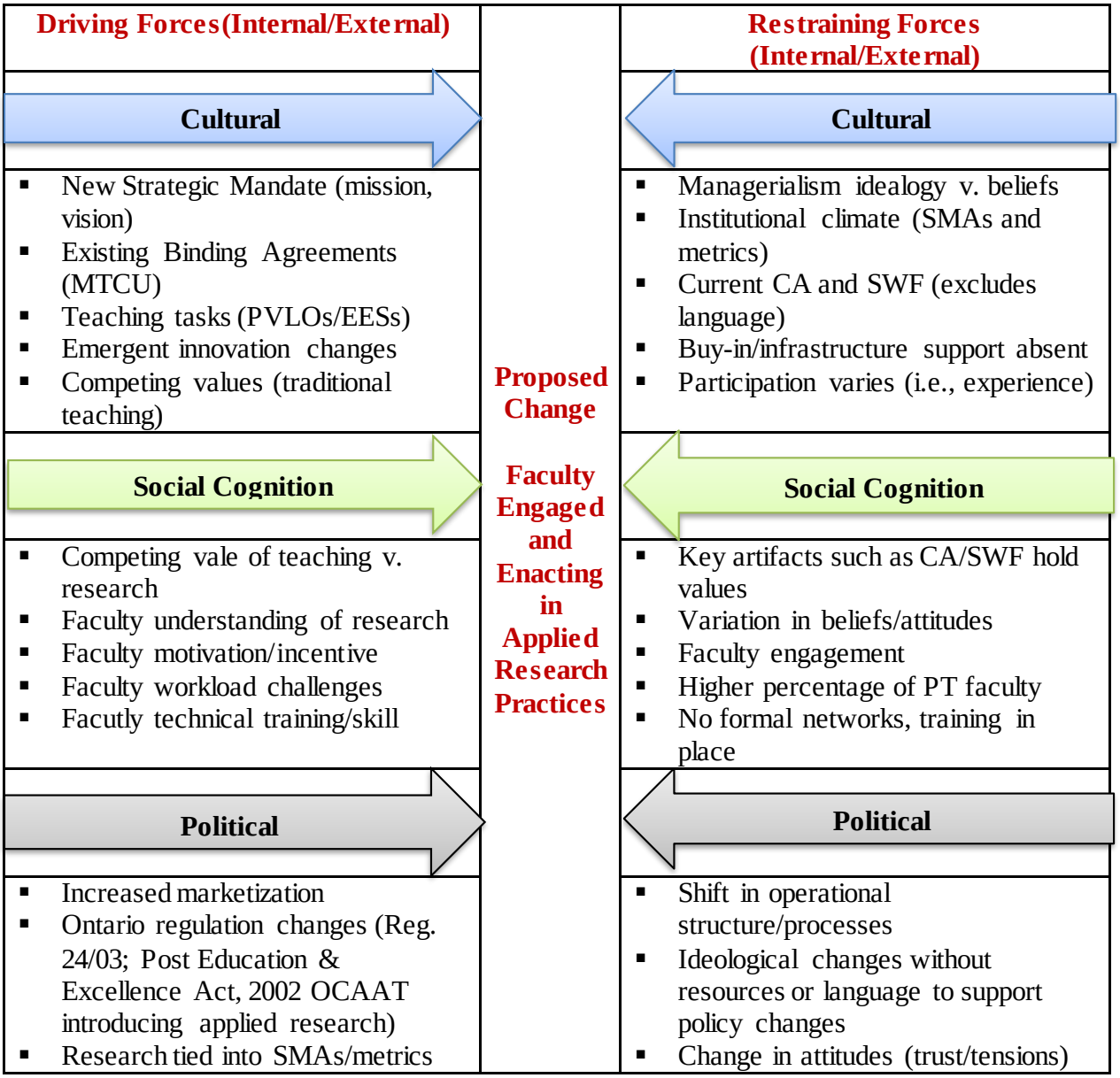
Note. Continuous Improvement Transformation Conceptual Framework. This image supports systems thinking for organizational improvement change. Adapted from Nadler, D. A., & Tushman, M. L., 1980, "A model for diagnosing organizational behavior". *Organizational Dynamics, 9*(2), p. 48. Copyright 1980 by Elsevier. Also adapted from 3-Step Change Process by K. Lewin, 1947, "Frontiers in group dynamics: Concept, method and reality in social science; social equilibria and social change." Human Relations, 1(1), p. 4. Copyright 2015 by Sage. Also, adapted with permission from Six Core Principles of Improvement Framework by A.S. Bryk, "Accelerating how we learn to improve." Educational Researcher, 44(9), p. 468. Copyright 2015 by Educational Researcher.

Appendix B: STEEPLE Drivers

	Change Drivers Impacting Five-Star
Social	▪ Increased attention being placed on signature research experience ▪ Emphasis on pedagogical alteration to embed research into teaching practices ▪ Pressure on faculty to produce applied research into the curriculum ▪ Involvement of new relationships with external community partners
Technology	▪ Expectation of knowledge to utilize technology and research resources ▪ Responding to the increasing and rapid changes in information technology ▪ Elaborate processes to embed technology in teaching and learning ▪ Growing attention on artificial intelligence, big data analysis and decision support skills for graduating students
Economic	▪ Significant investments will be required to appropriately address standards, processes, and practices with training ▪ Plan for allocation of appropriate resources to applied research practices ▪ Increased investments will be required to support infrastructure and ongoing developmental needs to familiarize faculty with management values and to facilitate integration (appropriate release time will be required for faculty) ▪ Pressures for accountability, cost containment, efficiencies, and effectiveness
Environment	▪ Knowledge-based economy, marketization, and demographic changes ▪ Change in mindset (means all those that engaged in educating students must own the outcomes of their efforts)
Political	▪ Legislation and strong influences from multi-levels of government to increase applied research practices ▪ Balancing the stable and unstable tensions and influences from the government via the SMA
Legal	▪ Collective Agreements will need to be revised to address the Scheduled Work Form (unions are silent) ▪ Ownership of intellectual property on research initiatives will require agreements
Ethical	▪ Support increasing access and equity of applied research (requires a balance in trust, power, and authority) ▪ Align with best research practices and Tri-Council principles of welfare, justice, and fairness

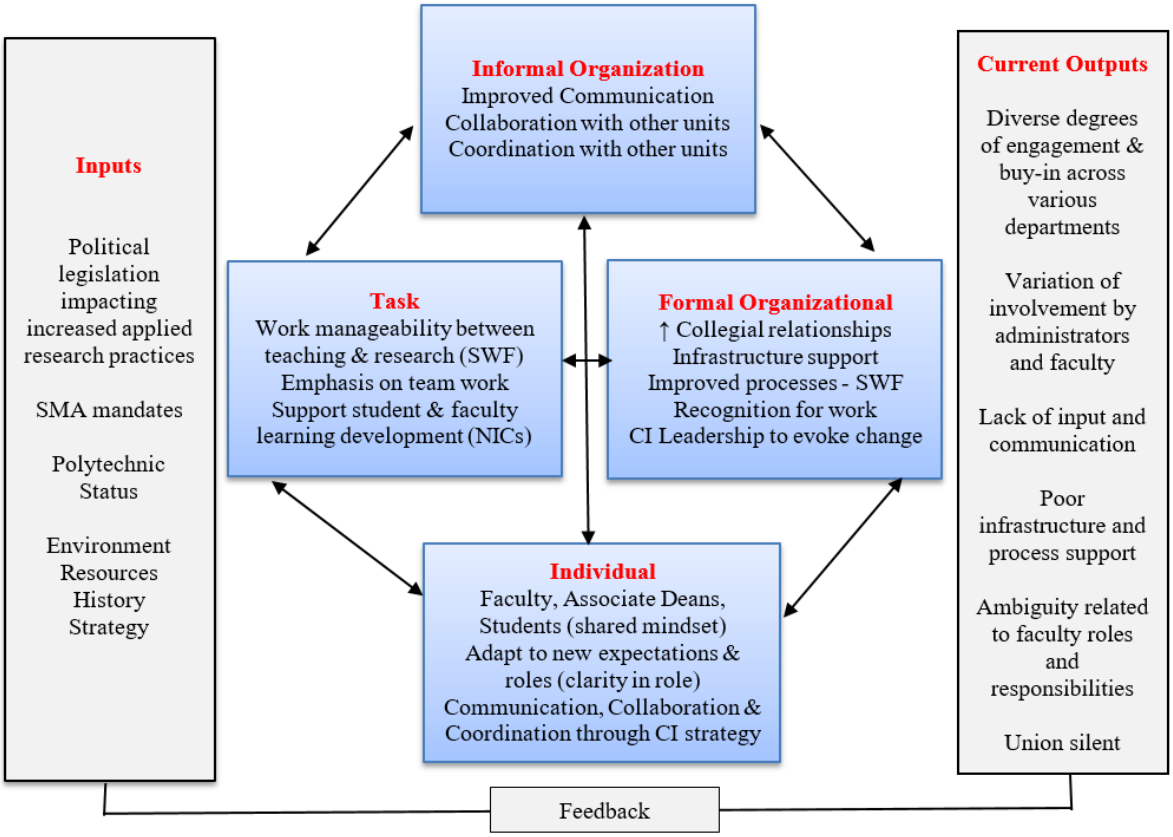
Note. Key change drivers in the research change process that are impacted by both internal and external antecedent conditions at Five-star.

Appendix C: Lewin's Force-Field Analysis addressing applied research



Note. Force field analysis addressing applied research. Loosely adapted from "Frontiers in group dynamics: Concept, method, and reality in social science; social equilibria and social change." *Human Relations*, 1(1), p. 3. Copyright 2015 by Sage.

Appendix D: Five-star's current incongruences between the current to the desired state

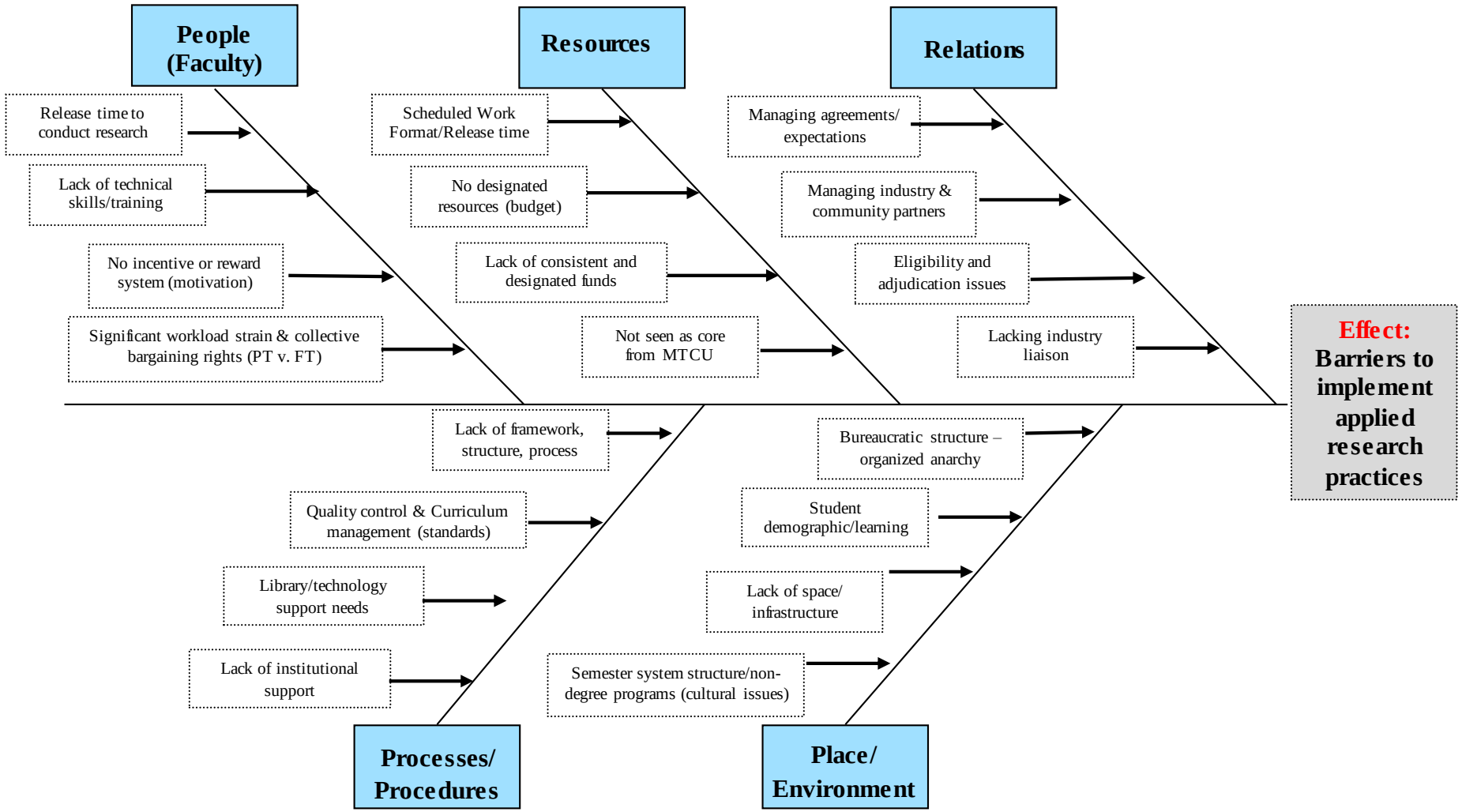


Note. Congruence model for organizational analysis applied to the current environment for applied research practices at Five-star. Adapted from "A Model for Diagnosing Behaviour," by D. A. Nadler and M.L. Tushman, 1980, Organizational Dynamics, 9(2), p. 47. Copyright 1980 by Elsevier.

Appendix E: Summary of Proposed Solutions to Problem of Practice

Proposed Solution Description	Resources needed	Benefits	Drawbacks
Creating a NIC within one department: Establishing a network improvement committee (NIC) within one departmental school that leverages diverse practitioners working collaboratively in a unique innovative hub to enhance organizational performance, consensus, and commitment in improving faculty engagement in applied research practices. Given the ambiguity and confusion that currently exist within the institution, the NIC might focus on the gathering of like-minded individuals interested in applied research and working towards small incremental steps and small wins to build confidence in the decision-making process. Modelling collaborative efforts may encourage people to become aware of external pressures for applied research and the potential to promote engagement and support.	Time and dedicated resources to support social learning and human resources development in establishing the NIC. Additional time will be required to address the gaps and barriers facing faculty to engage in applied research. This would also include adequate release time and resources for the NIC to learn and be trained on various improvement tools. This will require consensus and affective acceptance to incorporate time into the SWF for this NIC work which values individual and collaborative efforts.	Collective decision-making that involves multi-perspectives of internal staff (faculty, administrators, staff, and finance) utilizing open and transparent information to communicate and understand the complexity of the problem of integrating applied research where the traditional mandate is focused on teaching. A significant benefit is involving key individuals such as faculty who are most effected be part of the solution. This bottom-up solution removes the top-down environment that might make people resentful.	Requires significant coordination, time, and communication with clearly articulated objectives for the NIC to fully commit and work collectively. Lack of motivation and incentives from faculty and other key stakeholders to change and learn, given key artifacts such as the SWF and CA require modifications. Regulations, competition, mistrust, faculty release time, and lack of resources may affect the decision-making process of the NIC.
Developing a common language for applied research: Developing a common language guide for applied research given there is considerable definitional stretch regarding its meaning which has led to confusion. This solution would require a dedicated Task Force to collect and work with key internal and external constituents to unpack and the meaning and awareness of applied research.	Dedicated time and human resources for collecting and examining the various definitions used across the institution. This involves negotiating SWF time for individuals to be supplemented for project work. Moreover, this requires multi-disciplinary learning.	Removes ambiguity and clarifies a clear understanding of the meaning of applied research. Data collected and analyzed may assist to address further cognitive aspects of sense-making which serve as individual's mental maps of reality. This may help develop collective quick-wins.	Challenges with receiving consensus on the meaning of applied research given two different departments do not share tasks nor have the same goals for applied research. Requires time for completing and assessing surveys, focus groups and comment boards.
Hybrid of the two above solutions: This solution combines creating a NIC that would work collaboratively within one department to develop an appropriate language for applied research and test a facilitated college-wide learning and improvement aim. This solution offers for the organization a demonstrated proto-type and decision tool to test across other departments strategies to support faculty to be engaged applied research practices.	Requires recruiting key internal and external stakeholders to establish a NIC hub. This requires not only time and human resources but dedicated procedures, processes, learning, and agreement of appropriate release time on the SWF to commit to the designated work objectives.	Enables consistent, effective, and efficient decision-making within a departmental hub that tests explicit language the meaning and application of applied research. This aids in identifying key performance barriers and minimizes ambiguity given faculty are part of the decision-making to solve the problem.	Faculty may resist involvement and may view the traditional value of teaching at risk of being eroded which requires forming a collective mindset. Additional time, resources, and coordination of work to ensure that objectives are realistic and feasible given the administrative and financial infrastructure.

Appendix F: Causes and Effects "Fishbone" of Applied Research Practices



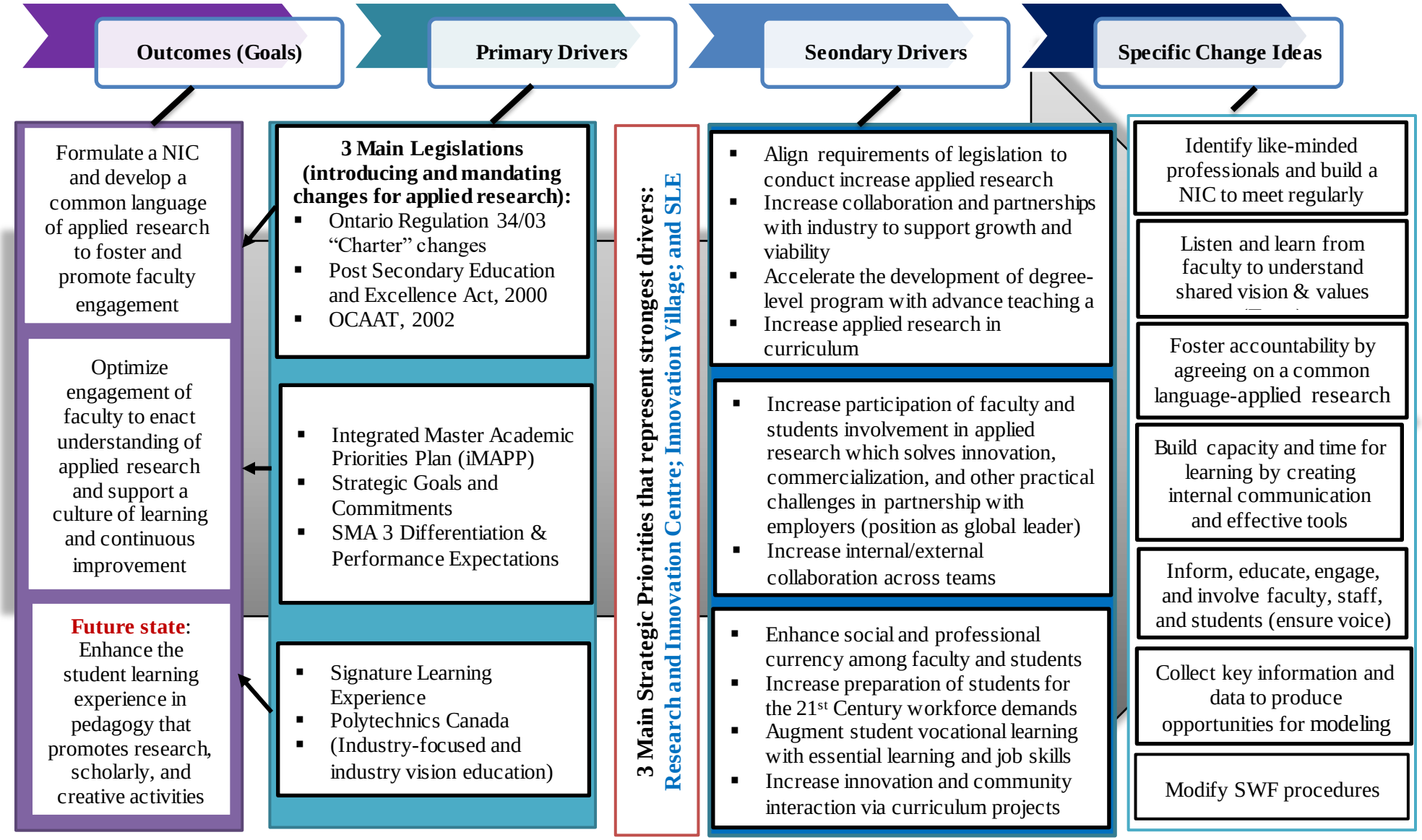
Appendix G: Change Implementation Plan

Steps	Goals/Priorities	Implementation Plan (Actions)	Team member(s) responsible	Timeline
Unfreezing: Awareness & Understand problem (Improving)	**1. Engage faculty and a social structure of key participants to build a network improvement committee (NIC).**	**Building awareness and understanding problem:** 1. Develop an organizational structure that brings diverse actors to focus on a common goal (e.g., common language for applied research, working agreements). 2. Secure human, social, and material resources to establish and coordinate work duties of the NIC. 3. Create an aim statement, agenda, and process for minute taking. 4. Establish a collaborative project charter and meeting schedule. 5. Design assessments (interviews, surveys, discussion documents). 6. Listen to and incorporate member input. Collectively develop principles and goals of the NIC. Determine indicators/measures. 7. Establish the processes and norms governing how individuals will work. Create common goal sheet – support shared mindset.	▪ Continuous Improvement Leader (Change Agent) ▪ Faculty members (from: Academic Information Technology School [AITS] ▪ Associate Dean, AITS ▪ Dean, AITS ▪ Executive Director, Innovation Village ▪ Dean, Centre of Research and Innovation ▪ Dean, Centre for Academic Excellence ▪ Union Rep ▪ Librarian	2 months
		Determining the problem by gathering and evaluating information to validate current state: 8. Explore ways to engage and measure faculty feedback on the language of applied research. Sharing good practices. 9. Collect data and information regarding knowledge management of the meaning of applied research. 10. Build mechanisms (e.g., surveys) to understand faculty experience and perceived barriers associated with applied research. 11. Analyze feedback results to assess reflections of faculty experience with applied research (i.e., diagnostic evaluation). 12. Learn from shared data, measures, and analyze to establish goals. 13. Transform individual interests into productive collective goals.	▪ Continuous Improvement Leader (Change Agent) ▪ Faculty members (from: AITS) ▪ Associate Dean, AITS ▪ Dean, AITS ▪ Executive Director, Innovation Village ▪ Dean, Centre of Research and Innovation ▪ Dean, Centre for Academic Excellence ▪ Manager, Institutional Research	4 months (note: Time-line is elongated to account for annual vacation schedules of faculty)
		Establish a guiding NIC to Capture voice of faculty: 14. Validate current state within AITS. 15. Work with faculty on effective ways to introduce SWF discussion into semester meetings. 16. Prepare draft templates and processes to discuss new departmental review of SWF calculations to support NIC activities that engage faculty in applied research.	▪ Continuous Improvement Leader (Change Agent) ▪ Faculty members (from: AITS) ▪ Associate Dean, AITS ▪ Dean, AITS ▪ Senior VP, Academic Services ▪ Corporate Finance Manager	6 months

Steps	Goals/Priorities	Implementation Plan (Actions)	Team member(s) responsible	Timeline
Changing: Set Aim & Evaluate Measure (Learning)	**2. Establish a common inventory and data collection of information regarding the meaning of applied research.**	**Develop timeline and secure resources:** 1. Develop a shared vision and mission for the NIC. 2. Leveraging existing NIC, secure necessary resources for core NIC activities, including minute taking, sharing notes, development of assessments and evaluation time.	▪ Continuous Improvement Leader (Change Agent) ▪ Associate Dean, AITS ▪ Business Manager, AITS ▪ Corporate Finance Manager	8 months
		Scan and gather information: 3. Collect different definitions currently used regarding applied research from various offices (Centre of Research and Innovation, Centre for Academic Excellence and Innovation Village). This will represent the baseline data. 4. Determine communication objectives. 5. Outline inventory of definitions.	▪ Continuous Improvement Leader (Change Agent) ▪ Executive Director, Innovation Village ▪ Dean, Centre of Research and Innovation ▪ Manager, Centre for Academic Excellence	10 months
		Determine common language: 6. Conduct semi-structured and follow-up interviews with faculty within the AITS. Collect data and information. 7. Survey faculty (semi-structured/follow-up interviews; closed and open-ended surveys; individual/group discussions). Document participation observations. 8. Collect and analyze feedback. Ensure faculty voice is captured (observations, interviews, surveys, discussions). 9. Assess and develop a summary of common findings. 10. Share findings with faculty and external partners and receive feedback. 11. Summarize feedback. Assess/Evaluate information/data. 12. Establish a common language and formal model used for applied research. 13. Create individual and focus group discussion within the AITS to receive feedback on the perceived language. 14. Address questions and concerns (closed and open-ended). 15. Test the new language of applied research within AITS. 16. Share and disseminate the information among the team. 17. Set up strategy to communicate.	▪ Continuous Improvement Leader (Change Agent) ▪ Faculty members (from: AITS) ▪ Associate Dean, AITS ▪ Dean, AITS ▪ Executive Director, Innovation Village ▪ Dean, Centre of Research and Innovation ▪ Manager, Centre for Academic Excellence ▪ Union Rep ▪ Librarian ▪ Senior VP, Academic Services ▪ Manager, Institutional Research	12 months (note: Time-line is elongated to account for annual vacation schedules of faculty)

Steps	Goals/Priorities	Implementation Plan (Actions)	Team member(s) responsible	Timeline
Refreezing: Learn & Collaborate (Changing)	**3. Using the common language of applied research, incorporate faculty engagement and faculty voice into the day-to-day institutional activities and practices consistent with the NIC's principles and goals.**	**Mobilizing the AITS for change:** 1. Interview faculty involved in applied research and generate ideas on how to expand language of applied research across other departments. 2. Galvanize faculty members involved in applied research towards action and discussions to address the SWF. 3. Develop and test the common language of applied research within the department activities (including curriculum). 4. Review and assess department resources and faculty skills 5. Promote inter-faculty applied research collaboration training sessions.	▪ Continuous Improvement Leader (Change Agent) ▪ Faculty members (from: AITS) ▪ Executive Director, Innovation Village ▪ Dean, Centre of Research and Innovation ▪ Dean, Centre for Academic Excellence ▪ Manager, Institutional Research	14 months
		Implementing a process and infrastructure within the AITS that supports faculty to enact applied research using a common language 6. Examine the effectiveness of the department's own structure of processes to engage faculty to increase skills to enact applied research. 7. Develop metrics of applied research activities. 8. Create additional hubs and organizational developmental training for faculty. 9. Profile faculty expressing interest or conducting applied research (semi-structured/follow-up interviews; surveys). 10. Pilot project to evaluate faculty experience/skills with applied research.	▪ Continuous Improvement Leader (Change Agent) ▪ Faculty members (from: AITS) ▪ Associate Dean, AITS ▪ Dean, AITS ▪ Executive Director, Innovation Village ▪ Dean, Centre of Research and Innovation ▪ Dean, Centre for Academic Excellence ▪ Union Rep ▪ Librarian ▪ Manager, Institutional Research	16 months (note: Time-line is elongated to account for annual vacation schedules of faculty)
		Institutionalizing day-to-day common language of applied research across the AITS 11. Implementation of revised applied research language within inter-departmental procedures, SWF discussions and procedures. 12. Ensure annual budget is available for AITS faculty interested in conducting applied research (evident on SWF).	▪ Continuous Improvement Leader (Change Agent) ▪ Associate Dean, AITS ▪ Business Manager, AITS ▪ Corporate Finance Manager ▪ Senior VP, Academic Services	18 months

Appendix H: Driver's Diagram for Achieving the Goals Associated with this OIP



Appendix I: What, Who, When, and Where Form

	What (Tasks necessary)	Who (Person Responsible)	When (estimate)	Where
1	Meet with Associate Dean and Dean of the AITS to explain objective and request assistance to secure human, social, and human resources to address NIC activities (ensure briefing information is prepared ahead of time).	CI leader	By week 1	Face-to-face meeting (followed with email with supporting info)
2	Devising a social organizational structure (send a communique to address the project aim and goal to introduce objectives; state further information is forthcoming at upcoming departmental meeting).			Send email to AITS members
3	Communicating at the AITS meeting the project aim and goal (i.e., introduction of objective is delivered by Dean and Associate Dean before CI Leader communicates). Set up meeting with Manager, Institutional Research Office.		By week 2	Communicated at AITS meeting
4	Establish key AITS members on the NIC and secure SWF time for faculty with Associate Dean support to ensure adequate release time for NIC activities.		By week 6	SWF schedules updated
5	With support of the Dean and Associate Dean of the AITS, invite via email communication key influencers such as the Dean, Research and Innovation Office; Executive Director, Innovation Village and; Dean, Centre for Academic Excellence. Also invite Librarian, Manager, Institutional Research (IR), Union Rep and Corporate Finance Manager for logistic, planning, and funding support.			Send email to key stakeholders (Using key opinion leaders to influence message)
6	Collaborating with faculty, and key members (as noted above) to create a common aim statement, agenda, and process for minute taking; project charter; common principles of how individuals will work together.	NIC members	By week 8	Committee face-to-face meeting
7	Conduct a needs assessment of current state: Evaluate current data, measures, and analyze and compare against established goals to formulate baseline.	NIC members	By week 12	Within the AITS
8	Collaborate with faculty to conduct survey questions; semi-structured follow-up interviews; closed and open-ended surveys; individual and group discussions and document review processes to better understand faculty's experience and perceived barriers associated with applied research (i.e., SWF).	CI leader and Manager, IR		Within the AITS
9	Assess and develop a common summary of common findings (i.e., finalize monitoring and evaluation of baseline data).	NIC members	By week 26	Within the AITS
10	Finalize results of the formative assessments and determine project schedule for next phase of work. Ensure new NIC members are in agreement with aim.	CI leaders		Within the AITS

	What (Tasks necessary)	Who (Person Responsible)	When (estimate)	Where
11	Develop a shared vision of the NIC and the work that will be completed in the monitoring and evaluation of the next phase of work.	NIC members	By week 28	Insert in project charter.
12	Send document request to Deans/Executive Director to collect definition of applied research that is used by the (1) Centre of Research and Innovation Office, (2) Innovation Village, and (4) Centre for Academic Excellence.	CI leader		Send email to Deans and Executive Director of key areas
13	Collect all definitions used for applied research used across the organization and summarize findings with new NIC members. Develop brief summaries to use in assessments questionnaires.	CI leader and Manager, IRO	By week 30	Within the AITS
14	Evaluate current data, measures, and analyze and compare against established goals to formulate baseline.	NIC members	By week 34	Within the AITS
15	Create formative and summative assessments to understand faculty's interpretation of applied research (i.e., build survey questions; interview questions; and focus groups questions).	CI leader and Manager, IRO		Within the AITS
16	Collaborate with faculty within AITS and complete survey questions; semi-structured follow-up interviews; closed and open-ended surveys; individual and group discussions and document review processes.	CI leader and Manager, IRO	By week 42	Within the AITS
17	With support of Manager, IRO, assemble, assess, and evaluate information that was collected from faculty's feedback to formulate a summative evaluation of current state (ensure to capture faculty voice).	CI leader, Manager, IRO		Semi-structured interviews; individual and group meets
19	Formulate a new common language and develop and implement 'new' summative assessments that include: semi-structured and follow-up interview questions; closed and open-ended surveys; individual and group discussions format to test a common language of applied research within the AITS.	CI leader and Manager, IRO	By week 44	Within the AITS
20	Establish a common language and informal model used for applied research. Ensure to embed formative and summative assessment feedback and information.	NIC members	By week 48	Within the AITS
21	Evaluate feedback and prepare templates and processes to implement new SWF calculations. Use information to communicate with faculty.	CI leader and Manager, IRO		Within the AITS
22	Work with key faculty on identifying effective strategies to introduce SWF discussion related to applied research.	CI leader and Manager, IRO	By week 52	Within the AITS
23	Prepare for next phase of pans for communication to test.	NIC members		Within the AITS

Appendix J: Impact, Outcome, and Output Indicators

Indicator	Baseline	Target
Impact Indicator: Engage faculty and a social structure of key participants to build a network improvement committee (NIC).		
▪ Increased faculty participation in departmental activities associated with learning and understanding applied research	▪ Number of faculty participating in NIC work/activities ▪ Development of NIC working-commitment document (i.e., Project charter)	▪ 10% or 4 FT faculty receiving designated time on SWF to participate in NIC activities ▪ Completed project charter, strategic and resource plan by NIC
▪ Percentage of faculty understanding of applied research as identified from the feedback tools (interviews, surveys, observations)	▪ Number of NIC meetings ▪ Number of completed surveys ▪ Number of templates and tools	▪ 100% of NIC meetings taking place on time with designated faculty supported by SWF hours ▪ 65% response rate in feedback tools
Outcome Indicator: Establish a common inventory and data collection of information regarding the meaning of applied research.		
▪ Increased understanding of barriers for faculty to substantially connect to information and a common language of applied research	▪ Conclusion rating of perceived barriers associated with applied research collected in various assessment tools	▪ Completed common language terminology for applied research
▪ Number of diverse definitions of applied research used across the organization	▪ Ratio of faculty in the AITS who are surveyed that understand applied research	▪ Reached agreement between AITS members on a common language for applied research
Output Indicator: Using the common language of applied research, incorporate faculty engagement and faculty voice into the day-to-day institutional activities and practices consistent with the NIC's principles and goals.		
▪ Progress made in drafting a common language of applied research	▪ Number of faculty who have access to definitions for applied research	▪ Processes established to ensure support in SWF discussions
▪ Progress made in drafting a new SWF procedure for faculty who are interested in engaging in applied research	▪ Number of faculty interested in engaging in applied research ▪ Number of faculty receiving hours on their SWF dedicated to applied research activities	▪ 10% increase in faculty (4 FT) engaged in applied research since initiative commenced ▪ 10% or 4 FT faculty receiving dedicated SWF time for AR activity (within 18 mo.)

Impact indicator (evaluates departmental support)
Outcome indicator (assesses progress against specific outcomes)
Input indicators (assesses progress against specific targets)

Appendix K: Knowledge Mobilization Plan - eNewsletter

eISSUE 01 June 2020

ACADEMIC INFORMATION TECHNOLOGY SCHOOL (AITS)

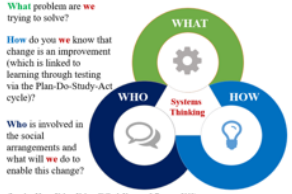
CI TechTimes

Purpose

The purpose of this plan is to educate, inform and to increase faculty engagement within the Academic Information Technology School in the enactment of applied research. Led by a CI leader and facilitator, we are looking to assemble an improvement team of skilled and creative individuals to collaborate to enhance social capital that will improve faculty enactment in applied research practices. This team will have its own identity and share a real commitment to a shared vision for applied research. The aim is to have trust and rapport between team members that informs how people work together.

Goal

Over the next 12 months, the primary goal of the change is to establish a network improvement committee (NIC) to engage faculty in the collaborative activity of developing a common language for applied research within one academic school – specifically the School of Information Technology (as a pilot study for other schools).



(Langley, Moen, Nolan, Nolan, Clifford, Norman & Provost, 2009)

Unlocking Potential: Continuous Improvement (CI) in Applied Research

How can faculty engagement in applied research practices in a large comprehensive Ontario polytechnic college be improved?

Exploring continuous improvement in applied research.

With increasing enrolments and strong financial health, Five-star's integrated 2020-25 Master Academic Priorities Plan (iMAPP) encourages a transformational organizational culture. Against this background, Five-star is striving to create a new kind of community culture where the creativity and entrepreneurship of the students and the wisdom of the faculty educators converge to advance applied research practices within the institution. For Five-star, the vision or future state would see all post-secondary students engaged in some form of research (both as part of the curriculum and as an extra-curricular activity). This desired applied research activity includes flexible onboarding of industry, business, and community projects while operating through an externally funded model supporting both faculty and student involvement.

Moreover, as Canada's Transformative College, we are strengthening Five-star's commitment to innovation and entrepreneurship, where an innovation hub is being developed to serve as a platform to bring synergies between academia and community for an interdisciplinary approach to learning. The institution is also built on values that align with desirable constituent goals. Consequently, as its number one academic goal and priority, Five-star adopted a mandate which reigns every student across the college receive a signature innovation learning experience (SILEx), which includes applied research.

What is a NIC?

A network improvement committee (NIC) is comprised of a consortium of professional improvement members socialized to address practical problems while building capacity to improve education processes and sustain systemic change through iterative, collaborative design, testing, and improvement (Dolle, Gomez, Russell, & Bryk, 2013). In an effort to increase efficiency and efficacy, many higher education institutions (HEIs) have established networks to improve team members' scholarly teaching and research processes inside and outside the classroom (Andreu, Canós, De Juana, Manresa, Rienda, & Tarí, 2006).

Thus, an innovative but achievable change for addressing the lack of faculty engagement is creating a NIC that will take purposeful collective action to support a change management plan that addresses efficacious strategies to improve research practices. With a focus on building capacity and re-culturing educational organizational systems, NICs bring diverse practitioners together to promote learning and knowledge-creation through collaborative inquiry and improvement (Russell, Bryk, Dolle, Gomez, LeMahieu, & Grunow, 2017).

Research Snapshot

Process-oriented principles that articulate a vision of change that drives aspirational goals:

Improving through communication

For college faculty, understanding the meaning of applied research continues to be a core issue, requiring more clarity. Conversely, improving performance excellence in research is achievable only if individuals can rely on the best possible common language support mechanism that provide the right synergy. This includes increasing peer connections, building and connecting communities while working across differences.

Learning through collaboration

Learning involves understanding changes in the external environment and how individuals and the organizations through their internal relationship have adapted to the external changes. Learning than becomes a shared responsibility and requires leaders at all levels to better understand values at the individual and collective level. This includes fostering engagement, connectedness and intercultural understanding by cultivating relationships.

Changing through coordination

This calls attention to creating space for deeper change to resource mobilization, improving participation, consensus, and program alignment of research within the college's culture using informal networks. This includes fostering academic and co-curricular connections which includes equipping faculty with information to support each other as well as students.

What faculty really need to know.

Fundamental to the principle of improvement is an understanding that those closest to the problem (e.g. faculty) are often best planned to find the solution (Bryk, 2015).

Objectives

- Raise awareness of the many opportunities available for faculty to engage in applied research practices within the Academic Information Technology School
- To generate excitement about engaging in applied research practices and leverage the adaptive space within the Innovation Village to address continuous improvement among the Five-star community, external partners and potential partners
- Ensure faculty, staff and students understand the meaning of applied research and the processes and how they can enact

Readiness Runway

- Responding but not changing
- Recognizing possibility for change
- Calling for a new way for working
- Understanding the system

Test/develop

- Developing a systems change strategy
- Building alignment
- Developing evaluation
- Practicing innovation
- Scaling in complexity

Methodology: Continuous Improvement – Participatory Action Research

Since the challenges facing faculty who are vested in teaching, learning and research are complex, this plan draws on the principles of continuous improvement which includes a participatory action research approach. Action research is a combination of action-orientation that necessitates changing attitudes, behaviours, and research orientation while testing theory. This is based on reflection, data collection, and action that aims to improve outcomes through involving the people who, in turn, take actions to improve their own outcomes. At its heart is collective, self-reflective inquiry that researchers and participants undertake, so they can understand and improve upon the practices in which they participate and the situations in which they find themselves.

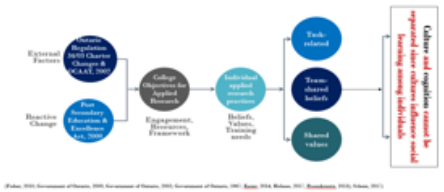
The reflective process is directly linked to action, influenced by understanding of history, culture, and local context and embedded in social relationships. The action is achieved through a reflective Plan-Do-Study-Act cycle, whereby participants collect and analyze data, then determine what action should follow.

Challenges to engagement

There are, of course, some challenges to engagement. These include:

- **A lack of time**: Majority of university faculty members receive protected time for research, but this is often not the case for college faculty whose workload designates only teaching time. Devising clear processes for supporting time for research.
- **The attribution of power in collaborative initiatives**: Building trust and cross-sector leadership structures that allow for shared goals, shared accountability, and shared impact.
- **Capacity-building and development**: Developing a shared mindset that supports quick-learning and adaptation. While there is lots of promise for community engagement, attention clearly needs to be paid to working across the boundaries of community and campus partners to support authentic and collaborative partnerships.

Political Context and Confluence of Socio-cognition Factors:



Strategic Mandate Agreement 3, April 1, 2020 – March 31, 2025 Priority Areas and Performance Targets:
*Skills & Job Outcomes
*Community & Economic Impact
*Productivity, Accountability & Transparency

Times have changed..new policies have presented new influences

A series of policy shifts occurred in 2000 and 2002, providing colleges autonomy to pursue new revenue streams in a competitive market.

First, the Postsecondary Education Choice and Excellence Act (2000) authorized colleges to offer post-graduate certificate programs, three-year advanced diploma programs, and similar to universities, four-year applied degrees (Government of Ontario, 2000).

Secondly, changes to the Ontario Colleges of Applied Arts and Technology (OCAAT) Act, 2002, mandated colleges to increase their applied research activities.

Within these policy reforms and with an emphasis on public service and economic objectives, the OCAAT Act changed governance arrangements setting out principles and expectations for the colleges to become more entrepreneurial, market-driven and research-oriented.

Moreover, while the OCAAT Act allows colleges to pursue research activities to differentiate themselves, fund transfers from the government do not include distinct envelopes for research.

Consequently, apart from competing for external research grants, currently there is no consistent internal allocation of resources or processes for research activity.

However, the competitive political transformation reinforcing research in Ontario colleges has not correlated with improved advancement in operational funding nor clear processes for faculty, which requires a collective, collaborative, and creative solution.

This Month's CI TechTimes Takeaways:

- The College has allocated $110,000 for the 2020-21 fiscal year to achieve the NIC objectives and incremental change
- The budget and plan is supported by the VP of Academic Services and key Executive Opinion leaders, including the Dean and Associate Dean from the AITS department
- SWF time will be allocated for meetings, NIC activities, development of tools, surveys and training working with support from Institutional Research Office and our Librarian
- NIC led by a CI Leader working collaboratively with key skilled and keenly interested voluntary individuals interested in applied research
- Includes additional operational and communication support, involving liaison with the Union representative
- Scaling up this strategy within other departmental schools may occur subsequently (need a quick-win)
- Involving a continuous learning journey for an individual and department becoming relentlessly self-analytical
- Working with you to change the way the system works (improved practices)
- Building trust and cross-sector leadership structures that allow for shared goals, shared accountability, and shared impact.
- Sharing a mindset to support applied research practices and adaptation
- Aligning policy, funding, leadership and effort with an agenda for change

Commitment and Current Industry Trend

Academic Priority:

Applied Research

Differentiating feature:

Every student receive a signature learning experience

7 Job Skills for the Future:

Complex Problem Solving Skills

Novel and Adaptive Thinking

Implementation Skills

Social Intelligence

Self-Directed Learning

Resiliency

Global Citizenship

If you have a question, want to start or continue your leadership and learning journey, participate on a NIC, or stay updated on upcoming projects and opportunities, please fill out the inquiry form at ciappliedresearch@c3.ca Once this form is received you will receive an email notification whenever the CI leader and facilitator posts an update.

For further questions, you can reach our CI leader and facilitator of this continuous improvement pilot project at email: ci.leader@c3.ca and Cell at: (519) 472-7770.

Professional Development & Organizational Learning

Upcoming Events:

- **AITS Team Meeting**
  Official kick-off of the CI Applied Research Project within the department
- **NIC workshop**
  The innovation hub is looking for new members of Five-star to collaborate with. Note: Additional time on your Scheduled Workload Form will be negotiated with the Associated Dean.
- **Applied Research Grant Webinar**
  Free online information session hosted by the centre for Research & Innovation

Too busy to attend right now? We'll offer the meetings, workshop and webinar in the Fall. Invitation to come!

Tech Times Issue 01 June 2020

Research Snapshot

Key words:

Applied Research, Faculty, College, Continuous improvement, Change, Network Improvement Committee

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Appendix L: Key Communication Method Strategies

Unfreezing: Awareness & Understand problem (Improving)			
Timing	**Targeted Audience**	**Message Content**	**Channels (Klein, 1996)**
Pre-change -And- Developing the need for change	Associate Dean/Dean	▪ Address the discrepancy of definition of applied research. ▪ Prepare information to answer questions (urgent gap). ▪ Confirmation of approach and resources available.	▪ Face-to-face ▪ Connecting with organizational values
	Executive Opinion Leaders	▪ Create awareness at the highest level (help assist the gap). ▪ Outline the diverse definitions for applied research across the organization (i.e., where ambiguity and confusion exist). ▪ Opportunity to improve personal/professional development.	▪ In-person face-to-face presentation ▪ Connecting with organizational values
	AITS Faculty (working with CI leader and Manager, Institutional Research)	▪ Meet at a departmental team meeting. Present clear information why there is a change and how it impacts faculty. Link purpose to academic iMAAP/personal values. ▪ Ensure faculty hear the information directly from their Associate Dean and Dean (opinion leaders). ▪ Support faculty voice (mitigate early resistance).	▪ Face-to-face ▪ Supervisor/senior leaders ▪ Personal relevance ▪ Connecting with organizational values ▪ Opinion leaders.
	Key Informant/Experts and Guiding Coalition (CI leader, Union rep., Librarian, Manager, Institutional Research, Business Finance Manager, Faculty)	▪ Develop a guiding coalition to understand the problem. ▪ Planning and managing information and activity. ▪ Participate actively in the aim/goal of the change plan. ▪ Keeping abreast of information and aligning with values. ▪ Develop mutual goals/vision, objectives, and charter. ▪ Set up bi-weekly meeting (i.e., address activities). ▪ Address expectations regarding personal impact.	▪ Face-to-face ▪ Opinion Leaders ▪ Connecting with organizational values ▪ Supervisor/senior leaders ▪ Multi-media tools (key messages regarding process)
Changing: Set Aim & Evaluate Measure (Learning)			
Midstream change	Guiding coalition (NIC) Key Informant/Experts AITS Faculty	▪ Make available a detailed change implementation plan. ▪ Develop and implement clear formative and summative evaluation plans (i.e., interviews, surveys).	▪ Face-to-face (interviews) ▪ Multi-media tools (surveys) ▪ Supervisor/senior leaders
Refreezing: Learn & Collaborate (Changing)			
Confirming the change phase	Guiding coalition (NIC)	▪ Use of multi-mediums to celebrate success (i.e., milestones) ▪ Celebrate accomplishments (i.e., bring in cake and coffee) ▪ Confirm common language for applied research achieved. ▪ Clarifying personal impact (i.e., outputs/outcome measures). ▪ Reaffirmation of success in meeting change goal. ▪ Agreement of a common language for applied research.	▪ Multi-media tools ▪ Face-to-face (KPI's) ▪ Personal relevance ▪ Supervisor/senior leaders ▪ Connecting with values ▪ Effective line management