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8-11-2021

## Exploring the Impact of Performance-Based Funding Policy Reform: The Role of Institutional Research in Supporting Data-Driven Decision-Making

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## **Abstract**

The institutional pressures placed on the Ontario college system, exercised through funding model reform, brought forward organizational challenges difficult for even the most fiscally savvy to navigate. The enrollment corridor mechanism and the expansion of the proportions of the differentiation envelope to create a performance-based grant, implemented via the 2020-25 Strategic Mandate Agreement (SMA3), demonstrate the Provincial Government's calls for efficiencies and accountability and the alignment of institutional and provincial priorities. Remaining financially sustainable while moving from performance reporting to performance funding and weathering the impacts of the Covid-19 pandemic requires a solid understanding of not only enrollment challenges and opportunities but also data and information used to inform decisions. Institutional Research (IR) units are responsible for providing leaders with data and information for this work. However, access to data and information does not imply their effective use (Marsh et al., 2006), pointing to a gap in data literacy skills amongst higher education leaders (Mathies, 2018). The problem of practice that will be examined is the role of IR in supporting effective data-driven decision-making related to achievement of the College X enrollment and SMA3 priorities. This Organizational Improvement Plan proposes that an existing Strategic Enrollment Management governance structure be leveraged for development and implementation of a group-level capacity building strategy. The planned change is used to inform enhancements to existing data tools and resources responsive to stakeholder needs and mindful of organizational context. The Change Path Model (Cawsey et al., 2016) provides the framework to implement this solution using distributed and adaptive leadership approaches.

*Keywords:* adaptive leadership, cross-functional collaboration, data-driven decision-making, distributed leadership, strategic enrollment management.

## Executive Summary

This Organizational Improvement Plan (OIP) addresses a problem of practice (PoP) concerning the role of Institutional Research (IR) in supporting effective data-driven decision-making (DDDM) at a large public college located in Ontario, Canada.

Chapter 1 of this OIP provides an overview of the College X organizational context. Emphasis is placed on examining the external political, economic, social, and technological factors that contextualize the environment in which College X is situated. The need for change is established through examination of macro, meso, and micro enabling forces of relevance to the PoP. This analysis demonstrates that organizational decision-making, behaviors and actions are not independent of the environments they operate in, dominant trends, and surrounding factors. Highlighting the evidence of the funding policy reform and external pressures in the organizational context, structure, dynamics, approaches, and practices, I proceed to explain the alignment between my personal leadership philosophy, views, and agency related to the identified PoP.

An overview of distributed governance structure, in place to enable collaborative and cross-functional decision-making, is provided, as well as a discussion of the utility of distributed leadership approach. Adaptive leadership approach is introduced and identified as an empowering mechanism for implementing and facilitating responsive organizational change. Given the identified problem of practice, three guiding questions for this PoP emerge:

- How do organizational, group and individual stakeholder readiness for change influence the PoP?
- What leadership challenges could emerge from this PoP?
- What strategies could be employed to enable effective DDDM?

The chapter continues with articulation of desired organizational state aimed to empower stakeholders to engage in DDDM and support the achievement of the college's enrollment and SMA3 priorities, all while fostering the culture of collaboration and innovation. Finally, change

drivers and organizational readiness for change are examined to demonstrate that College X is ready for the proposed change.

Chapter 2 outlines the steps for planning and development of a solution to the problem of practice. This chapter begins with a discussion of opportunities for the distributed and adaptive leadership approaches to engage individual and group stakeholders in the problem analysis and inform flexible and collaborative approaches in the effort to address the identified PoP. I proceed to explain how distributed and adaptive leadership approaches, along with the Change Path Model by Cawsey et al. (2016), could help College X realize an effective, proactive, first-order DDDM focused change in response to the identified PoP. To complement this organizational-level change and the Change Path Model, aspects of Kotter's model - employing a prescriptive approach - are identified to be of relevance and incorporated as well.

Using the organizational change readiness findings from Chapter 1 and the Congruence Model by Nadler and Tushman (1980) to diagnose and analyze needed change, the gaps between the current and the desired organizational state are determined. This is proceeded by providing a critical organizational analyses summary, in the effort to identify priorities for a change plan. Three possible solutions to the PoP are identified a) a status quo, b) individual-level focused capacity building strategy, and c) group-focused capacity building strategy. All three solutions are assessed based on resources, benefits, and consequences involved. The group-level solution is deemed to be the preferred one. The chapter concludes with a thorough examination of the preferred solution and ethical considerations of relevance to the proposed change.

Chapter 3 outlines a detailed implementation plan to address the PoP. The plan lays out the path of the chosen solution and its two goals. The first goal is development and implementation of a group-level capacity building strategy, while the second goal is focused on enhancement of Tableau Server (TS) content and supporting resources. This first-order, organizational change is expected to support enhancement of DDDM of key stakeholders and decision-makers. Cawsey and colleagues' Change Path model, along with components from the

Kotter's eight-stage change process, helps guide development, implementation, monitoring, evaluation, and finally communication of the organizational change. Chapter 3 begins with a description of the implementation plan and timelines associated with the preferred solution, followed by an explanation of how distributed and adaptive leadership approaches will be used to lead the change initiative. A detailed monitoring and evaluation plan, and a communication plan are also provided to support implementation of the changes over the 18-month period. Finally, the chapter concludes with anticipated challenges and limitations based on the current strategy and leadership approaches to lead this organizational change and discussions of opportunities to scale up this change initiative across other College X functions.

It is my hope that successful implementation of this OIP will help a) build capacity for effective DDDM and b) make TS content and resources a trusted and effective mechanism for DDDM. Doing so would enhance stakeholder capacity for effective DDDM in support of achievement of enrollment planning and related SMA3 goals and priorities. Finally, the institutionalization and evolution of the solution should also help College X in achieving financial sustainability by enabling it to anticipate and proactively prepare for future challenges and opportunities.

## **Acknowledgments**

The completion of this Organizational Improvement Plan reflects three years of juggling multiple roles and responsibilities. At times, this felt like an impossible task. With the support and encouragement of many I encountered on this journey, I am proud and happy to be where I am today.

To our faculty team: thank you for this incredible learning journey! Special thanks to Dr. Beatte Planche for her unwareing guidance and invaluable contribution.

To my 2018 Higher Education Cohort: it has been a privilege being on this journey with you all! Special thanks to Chris, Jenn, Jennifer, Richelle, and my 9778-650 peers for their never wavered support, helpful advice and friendship. I hope the future brings us opportunities to connect, collaborate and cross paths again. I hope to see you all at convocation!

To Jason: thank you for your encouragement and support in pursing this program.

To Corrine: thank you for your practical suggestions, helpful advice and continued support.

To my amazing partner and spouse Sherif: thank you for your unconditional love and patience, willingness to read my papers, and being there to lift me up when things got hard – words can't adequately express my gratitude and appreciation. I love you!

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**Acronyms**

DDDM (Data-Driven Decision-Making)

IR (Institutional Research)

Institutional Planning and Analysis (IPA)

KPIs (Key Performance Indicators)

OIP (Organizational Improvement Plan)

PDCA (Plan, Do, Check, Act)

PoP (Problem of Practice)

PSIs (Post-secondary Institution)

SEM (Strategic Enrollment Management)

SMA (Strategic Mandate Agreement)

SMA1 (2014-17 Strategic Mandate Agreement)

SMA2 (2017-20 Strategic Mandate Agreement)

SMA3 (2020-25 Strategic Mandate Agreement)

SME (Subject Matter Expert)

Tableau Content (TC)

Tableau Server (TS)

## Chapter 1: Introduction and Problem

The environment in which Ontario's 24 colleges are currently operating is proving challenging for even the most fiscally savvy. The recently introduced enrollment corridor mechanism and the announcement of expansion of the proportions of the differentiation envelope to create a performance-based grant, to be implemented via the 2020-25 Strategic Mandate Agreement (SMA3), demonstrate a tightening of the Provincial government control over the post-secondary education sector concealed behind the calls for efficiencies and accountability and alignment of institutional and provincial priorities. Maintaining financial sustainability while anticipating the transition from performance reporting to performance funding and weathering the effects of the Covid-19 pandemic on higher education requires a thorough understanding of not just enrollment problems and opportunities, but also data and information used to guide organizational decisions. This necessitates participation in cross-functional, data-informed organizational dialogues in order to make decisions about the organization's future directions. As a Strategic Enrollment Management (SEM) leader in Canada, Black (2010) has suggested that higher education leaders should focus less on enrollment numbers and more on the capacity to produce enrollment results i.e., people.

Approaching change, aimed at empowering stakeholders within organizational structures toward effective use of data in decision-making, requires trust in the data and information provided. Howard et al. (2012) discuss the importance of trust in terms of the role of Institutional Research (IR) units in supporting educational leadership through "sharing of quality information and perspective" (p. 134). Marsh et al. (2006) caution about equating access to data to its effective use for organizational improvements. According to Mathies (2018), many decision-makers lack formal training or expertise with data, resulting in a growing gap within senior management. Marsh and Farrell (2015) build on this by stating that data and information need to be "combined with stakeholder understanding and expertise to become actionable knowledge" (p. 271). Providing trusted data and information in the manner that empowers and mobilizes the stakeholders and

decision-makers to use data to drive and inform decision-making is the main priority for me as an IR leader.

### **Organizational Context**

The organization at the heart of this Organizational Improvement Plan (OIP), College X, is a large public college. Established in the 1960s and located in Ontario, College X serves over 30,000 full-time students and 20,000 part-time and continuing education students. There are more than 200 programs, situated across six academic faculties. Located in a community where postsecondary attainment was historically 15% lower than that of the City of Toronto residents, College X is committed to being an access institution, serving its local communities and residents (Census, 2016). The college emphasizes hands-on, career-focused learning, offering a range of credentials including bachelor's degrees, diplomas, and certificates. Words like “leadership,” “innovation,” and “transformation” are interwoven throughout College X’s Strategic Plan and reflect the college and the leadership aspirations pursued both externally and internally.

In Ontario, the Strategic Mandate Agreements (SMA) between the Ministry of Colleges and Universities and the publicly-assisted colleges and universities are a key component of the government’s accountability framework for the post-secondary education system. The SMA3 cycle focuses on promoting accountability through transparency and a focus on performance outcomes. The evolution toward significant increase in the proportion of funding allocated to performance could be attributed to the neoliberalization of the Ontario post-secondary system that started with the accountability movement and introduction of performance indicators in the 1990’s. Brownlee (2015) explains that the performance indicators “began as a mechanism to help student-consumers make “market-relevant choices among programs and institutions” (p. 120). However, she argues that they are not about accountability and quality, but rather a managerial tool that shifts control “upward and outward, toward administrators, governments and the private sector” (Brownlee, 2015, p. 120). This neoliberal approach to managing the system has the potential to lead institutions to engage in market-like competition and administrators to govern as much as possible

by numbers (Busch, 2017) in the effort to ensure fiscal sustainability in the years to come. To this end, institutions are actively engaged in monitoring enrollment trends, matching them with changing regional and federal government agendas as they inform their strategic directions and priorities. This is becoming more critical as challenges from the global pandemic persist and institutions look to diversify their revenues.

Even though the provincial government remains committed to its objectives through the increase in the proportion of performance-based funding and the corresponding decrease in the proportion of the enrollment-based funding; there is potential that this could lead institutions to engage in practices that could erode the very purpose of the system. Busch (2017) warns that current trends influenced by neoliberalism focus on education in terms of the return on investment rather than “public good that enables the institutions of democratic life” (p. 26). McKinnon (2014) urges that “our society has to do better in educating its members about the critical importance of education, and the disadvantage incurred by those who eschew its benefits” (p. 47). For this reason, it is important for the writer of this OIP to keep front of mind any ethical implications of relevance to the identified PoP.

### **Organizational Vision and Mission**

College X aims to further polytechnic education through global polytechnic leadership (College X, 2018). Its mission, communicated in its five-year strategic plan, is to develop awareness of global citizenship and preparation for work and innovation. This mission is driven by the values of courage, innovation, equity, health and well-being, and sustainability (College X, 2018). The foundation of the College X Strategic Plan is its goal of becoming an exemplary 21st century organization by committing to 1) continuously improving academic and administrative processes, programs and services, 2) planning for a financially sustainable future, and 3) strategically investing in infrastructure (College X Strategic Plan, 2018-23). Given the commitment and emphasis placed on continuous improvement and planning for financial



sustainability, the significance of data and effective DDDM by individual and group stakeholders and College X toward achievement of its priorities and goals is evident.

### **Organizational Structures and Leadership Approaches**

The enrollment corridor mechanism introduced during the 2017-20 Strategic Mandate Agreement (SMA2) and the College X Strategic Plan implementation have brought a number of organizational changes to College X. These changes were intended to create or enhance structures and processes in an effort to support achievement of organizational and alignment with government priorities. In the post-secondary context, and at College X, predominant organizational models are bureaucratic and collegial management models.

Bureaucracy remains the way forward, via greater efficiency and effectiveness. Lumby (2019) explains that bureaucracy is the most enduring of organizational forms embedded in all institutions, noting that the reason for its persistence is its utility as support for their positive functioning. “Bureaucracies and collegiums have vastly different practices, goals, and priorities ... [; however,] although at odds, the uneasy coexistence of bureaucratic and collegial structures ... [allows] administrators to build organizations based on excellence and distinctive goals ... [and] faculty to conduct teaching and research” (Manning, 2018, p. 37). In my position, I have observed cross-functional governance structures successfully moderating between the two approaches. Manning (2018) explains that organizational models have evolved, “occurring simultaneously within the same college or university” (p. 36). Therefore, as a leader, I will aim to situate this OIP to ensure it complements balancing of these two management models.

College X exhibits hierarchical leadership structures where the authority and decision-making power are associated with positionality. The most prominent authority is the formal hierarchical authority (Woods, 2016) evident in the College X SEM structure design and composition (see Appendix A). According to Bolman and Deal (2013), structures in stable systems tend to be hierarchical and rules-oriented and faced with critical structural design problems like how to delegate work (differentiation) and how to organize disparate efforts after dividing

responsibilities (integration). College X, through a top-down leadership approach, put into place a distributed SEM governance structure focused on collaborative and collegial approaches and partnerships to decision-making pertaining to enrollment and student success planning. While distributed leadership does not flatten hierarchical structures, it coexists in the organizational context where both hierarchical and distributed structures are present (Leithwood et al., 2007). This organizational setting resonates with my observations of the College X governance where formal governance structures enable collaboration and enhance morale to get the work done (Bolman & Deal, 2013).

To understand the effect of College X's organizational structures and leadership approaches, complexity leadership theory (Burnes, 2008; Byrne, 1998), which redirects focus away from an individual leader, is considered. Originating from complexity science (Marion, 1999), this theory considers leadership within the framework of the idea of a complex adaptive system (Lichtenstein et al., 2006). What is unique about this theory is that relationships are not defined primarily hierarchically, as is the case in bureaucracies but rather by interactions between agents and agent networks (Mason, 2008). In the context of aggregate complexity, self-organization, dissipative behavior, and self-organized criticality, continuously change the internal structure and external environment of complex systems (Manson, 2001). This in turn repositioning of entities and relationships within a complex system supports the postmodern view of a plurality of decentralized, but networked, social and political discourses emphasizing the importance of relationships. Individuals and groups of individuals with shared interests, knowledge, and/or goals that are facilitated by their relationships are referred to as agents. As a leader in the aforementioned environment, this writer will strive to create circumstances that enable these types of interactions between agents and the change process to take place (Lichtenstein et al., 2006). In this OIP, the dynamic that can arise during agent interactions can be the catalyst for adaptive leadership, leading to innovative ways to address challenges relevant to this PoP context.

Bolman and Deal's (2013) Four Frames offer an understanding of the people and processes of an organization through structural, human resources, political, and symbolic frames. These frames help leaders understand how organizations work through the application of different perspectives. This brings to light organizational dynamics and connections that could otherwise be overlooked. Of most relevance to this OIP are the structural frame and human resources frame. The structural frame is concerned with the 'how' and examines rules, roles, goals, policies, technology, and environment and their alignment with organizational structures. The human resources frame is focused on people and examines needs, skills, and relationships and their alignment with organizational needs (Bolman & Deal, 2013). These two frames are key to this PoP and the College X organizational context.

Nevertheless, the alignment of organizational structures with external pressures has inadvertently created the need for realignment on the human resources end. This has highlighted the need for new skills and abilities and provision of learning and development opportunities for stakeholders within the SEM structure. Bolman and Deal (2013) claim that "progressive organizations give power to employees as well as invest in their development" explaining that empowerment includes keeping employees informed, encouraging participation, redesigning work, fostering teams, and infusing work with meaning (p. 147). Moreover, they caution about top down or controlling participation and mixed messaging as they can be problematic. Encouraging meaningful engagement and promoting collaboration are the most important aspects of this OIP.

Progressive organizations, according to Bolman and Deal (2013), use high-involvement techniques to improve human resource management. As a leader who hopes to empower others to be and do more than they thought they could, I need to be mindful of the complexity of the College X environment and develop strong cultural fluency to be able to identify and employ effective strategies, tailored for individual and group stakeholders. As Buller (2015) notes, "you can't change an organization without being changed yourself ... [; therefore,] looking inward before moving onward" is key (p. 91). This can be achieved through self-reflection and collective work with cross-

functional stakeholder groups in ways that are sensitive to their individual archetypes and institutional culture.

Understanding institutional culture, the core layer of meaning that forms change, and being able to align tactics and approaches to it, is, according to Kezar (2018), crucial for change agents to be effective. Although the top-down approach – consistent with a managerial culture based on priorities, responsibilities, and rules and values efficiency, supervisory capabilities, and fiscal responsibility – supports the need for change at College X, it is not suitable for change adoption given the collegial culture dominant among academic faculties and stakeholder groups affected (Kezar, 2018). As an IR unit, we are viewed as a source of data for a) generation of information and knowledge aligned with a collegial approach to decision-making and b) evidence for pursuing a particular decision aligned with a bureaucratic approach to decision-making. Yet, we strive to maintain an objective stance, paramount for the nature of our work, when it comes to the role we play in decision-making across the institution.

### **Leadership Position and Lens Statement**

Decision-making related to goals and priorities concerning response to pandemic uncertainty and associated with enrollment planning and adoption of the SMA3 are situated within senior leadership roles and governing bodies. Therefore, this writer's ability to steer decision-making of the College X vision and direction forward within the identified PoP needs to be considered. The aim of this section is to articulate leader's approach to leadership practice and organizational improvement within the scope of their role at College X. This section is critical because it identifies both my approach and my agency in leading the proposed organizational change.

### **Position Statement**

As an Associate Director, Institutional Research (IR) within the Institutional Planning and Analysis department, I have immediate responsibility for supporting the college's data needs and data-driven decision-making. While the work our unit performs could be perceived as transactional

at times, it guides and lends support for transformational objectives of the college leadership and governing bodies. The work involves a range of activities, including management of the college's enrollment projection model (used to inform enrollment and budget planning), overseeing and managing key institutional data assets, liaising with the ministry, and reporting on the college's performance metrics, including Key Performance Indicators (KPIs) and those identified within the college's SMA3. Due to the broad scope of the unit's work, my position grants me opportunities to collaborate across organizational functions, directly interacting with all levels of college leadership.

Over the last number of decades, IR professionals have emerged as recognized agents of change across higher education and administration literature and research. According to Terenzini (2013), the role of IR professionals has evolved from external accountability reporting to supporting leaders in making data-informed decisions toward achievement of organizational efficiency and effectiveness. Cubarrubia and Le (2019) explain that "IR - both as an organizational unit and as a function - is being asked to do more and to do things differently" (p. 20). In line with this, Terenzini (2013) identifies three tiers of organizational intelligence needed for effective IR practice including: 1) technical and analytical intelligence, 2) issues intelligence, and 3) content intelligence. The field requires IR leaders to draw from all three forms of intelligence to help chart a course to data-informed solutions (Turk & Taylor, 2019). Yukl and Mahsud (2010) explain that there is a growing interest in skills relevant to adaptive leadership, including cognitive complexity, system thinking, and social intelligence. These skills are also of particular significance for this writer as a leader given the PoP at hand. Organizational intelligence enables IR leaders to mitigate circumstances through the knowledge sense-making and adaptive leadership approaches.

IR leaders are cautioned about the amount of disruption occurring in the field, highlighting the importance of preparing their units for the future (Johnson & Simon, 2018). When speaking about "future-proofing", Johnson and Simon (2018) offer a theoretical model of IR response that allows IR leaders and units to actively reflect and prepare for what is to come. As an IR leader, this model has offered me an aspirational vision of how to be actively involved in pushing boundaries

and leading the change in IR approaches and techniques (Johnson & Simon, 2018). Being able to work collaboratively with others from across functional areas and leadership levels will also play an important role for this OIP. Therefore, the leadership approach to addressing the identified PoP will need to be flexible and adaptive to the needs and change readiness of organization and stakeholders.

As an Associate Director, IR, I assist with decision-making within the SEM structure and the Enrollment Planning Group, as well as liaising with a variety of decision-makers both within and outside of traditional organizational structures. This presents me, as an IR leader, with opportunities to be impatient advocate when it comes to future-proofing (Johnson & Simon, 2018) my unit's role within College X's current and future governance structures. Even though there are solid practices, processes, tools, and resources in place to provide key stakeholders and decision-makers with data and information, the effectiveness of how they are utilized needs to be enhanced. Support from the Director, Institutional Planning and Analysis (IPA) and SEM Team will be critical in moving forward with the efforts to achieve the desired organizational state and change outcomes.

I recognize that my leadership approach could come across as idealistic. The lens used to view the world within and around my organizational context, and to draw insights from those observations, is influenced by my organizational and SEM structure positionality and could come across as idealistic. However, as Kellerman (2014) states "because leadership makes a difference, sometimes even a big difference, those of us who desire to make the world a better place must do what Tutu did" (p. 14). Consequently, it is important for me as a leader to have my team's trust and be able to trust my own ability to navigate institutional and systemic politics to best support the unit's and college's needs, interests, and welfare.

### **Personal Change Agency**

In the context of this OIP, organizational change requires IR to play multiple roles. My positional power does not grant me the ability to change organizational structures or mandate

change, but it allows me to leverage my knowledge power to influence, implement and facilitate change. As a change initiator, I can share recommended solutions for improving the organization and SEM governance structure. Moving forward with proposed changes would require gaining endorsement from the Director, IPA and the SEM Team, who would act as change champions. As a change implementer, I will take action to make the change occur across and within the key stakeholder groups. Finally, as a change facilitator, I will engage other stakeholders involved in the change process, inviting their involvement in decision-making while also supporting the change and adaption within their contexts.

Prior to my current role, I was supporting planning, implementation, and evaluation of projects and work carried out by committees within this distributed governance structure. This allowed me to gain a deeper understanding and appreciation for the complexities surrounding academic and administrative collaborations. The eight years I have spent with this organization have helped me gain a solid understanding of a) organizational structures and systems and appropriate changes that need to take place, b) organizational networks and how to reach key members, and c) myself as a leader, including my influence within the organization and how I am perceived within my organization's leadership teams. Therefore, the leadership approach required to guide change in the context of this OIP will be twofold.

### **Leadership Approaches**

The leadership approaches chosen to support this OIP are adaptive leadership (Heifetz, 1994; Heifetz & Laurie, 1997; Heifetz & Linsky, 2002) and distributed leadership (Gronn, 2000; 2002). Adaptive leadership originated from contingency theories (Fiedler, 1964; Lawrence & Lorsch, 1967). These leadership theories describe how aspects of a given situation moderate the effects of leader behavior on the performance of an individual or group (Bass & Bass, 2008; Yukl, 2010). One of these early contingency theories is Situational Leadership Theory (Hersey & Blanchard, 1969, 1977, 1987; Blanchard et al., 1985, 2013). Developed by Hersey and Blanchard (1969, 1977, 1996), the theory evolved during the 1980s to address limitations identified by

several critics concerning the concept of maturity and its use in the early iterations. While these theories have lost some of their popularity, they remain relevant for adaptive leadership approaches. These theories provide insights into how to diagnose a situation, and they also identify forms of behavior likely to be effective for a leader (Yukl & Mahsud, 2010). These types of insights into situations and stakeholders are critical for a successful change process.

On the other hand, distributed leadership draws from distributed cognition (Hutchins, 1995) and Activity Theory (Vygotsky, 1978; Engestrom, 1987; Leontyev, 1981). Distributed cognition provides a framework for analyses of complex, socially distributed work activities (Rogers & Ellis, 1994), while cultural-historical activity theory, evolved over three generations of scholars, offers perspectives for understanding individual, collective, and networked behavior as contextualized in a situation (Roth & Lee, 2007). Jones et al. (2014) argue that distributed leadership is “difficult to define due to its basis in leadership as activity rather than as a formal role” (p. 606). Given this leader’s role and positionality and the governance structure at College X, I have come to regard these two approaches as most suitable for the organizational context and the leader’s role as a change initiator, implementer, and facilitator. An adaptive lens will offer an empowering platform to implement and facilitate organizational change, while a distributed lens will enable the leader to leverage existing governance structures and processes to gain endorsement, and to do so effectively.

### ***Adaptive Leadership Approach***

The approach of interest for assessing the situation and identifying appropriate behaviors and approaches to change, in the context of this OIP, is the Situational Leadership II (SLII) model (Blanchard et al., 1985, 2013). Developed by Blanchard (1985, 2013), this approach is based on the relationship between leaders and followers. It offers a framework for leaders to analyze each situation based on followers’ readiness and adapt their leadership styles based on the amount of relationship behavior and task behavior deemed needed to support follower needs and development. In a study that tested assumptions of the SLII model, Zigarmi and Roberts (2017)



found compelling evidence of the follower-reported fit between needed and received leadership style. The findings revealed scores that are more favorable on nine of the ten measured employee outcomes, as compared to follower-reported misfit. This finding lends support for the appropriateness of this leadership model, complemented by adaptive leadership approach, to this OIP.

Institutional decision-making is influenced by external factors. The major changes in the external environment faced by the post-secondary institutions (PSIs) in Ontario demonstrate the need for flexibility, adaptation, and innovation by leaders (Yukl & Mahsud, 2010). Successfully adapting requires collective learning and collaboration across the organization. Leading and following is a complex adaptive process comprised of multiple dimensions, including situational challenges, leader behaviors, and adaptive work (DeRue, 2011). Adaptive leadership is focused on the adaptations of people in response to changing environments where a leader's role is focused on mobilizing people to address challenges (Heifetz & Laurie, 1997). This leadership approach is fitting because it speaks to the need for College X's IR unit, and me as a leader, to adapt to the dominant leadership approaches and structural and situational factors.

Adaptive leadership has been defined as the practice of mobilizing people to overcome tough challenges and thrive (Heifetz et al., 2009). Consistent with complexity theory, adaptive leadership is about leader behaviors that encourage learning, creativity, and adaptation by followers in complex situations. Adaptive leaders engage in activities that mobilize, motivate, organize, orient, and focus the attention of others (Heifetz, 1994). The aim of adaptive leadership is to help and encourage others to change and learn new ways so that they can do better.

### ***Distributed Leadership Approach***

Gronn (2002) describes distributed leadership as a new architecture for leadership, one in which activity bridges agency and structure. A meta-analysis of 85 distributed leadership publications by Tian et al. (2016) revealed that 53 publications dealt with conceptualization of distributed leadership, while the remaining 32 presented best practices and prescriptions for this

work in the educational context. The identified studies on the application of distributed leadership revealed the significance of trust for distributed leadership; however, how trust is established was found to vary across different cultural settings.

The relationship between distributed leadership and decision-making power does not adhere to assumptions of power being distributed across organization to people who are able to independently make decisions and take initiative (Lumby, 2019). What is observed tends to resemble more closely formal and informal selection within a bureaucratic system. Woods et al. (2004) describe distributed leadership as encouraging the development of networks for knowledge sharing, rather than relying on traditional hierarchically structured decision-making and communication concepts. In the context of framing data use in practice, Spillane (2012) describes situated and distributed perspectives of cognition emphasizing interactions amongst stakeholders. This is where the Spillane (2012) and Gronn (2002) understandings of distributed leadership come together for this OIP.

According to Lumby (2019), “the unique selling point of distributed leadership appears to be its embrace of the possibilities and potentialities of emergent spontaneous leadership, alongside the deliberative leadership of those in formal and informal roles” (p. 10). A distributed leadership framework of interest to this PoP is institutionalized practice, where organizational structures are leveraged to facilitate collaboration between actors (Gronn, 2002). Bolden et al. (2009) note that “distributed leadership is well suited to a complex, changing and independent environment” (p. 260). However, the same authors caution about this approach being used as a tool to enhance organizational belonging and engagement, while concealing the true decision-making mechanisms. Given the context within which a distributed leadership approach would be used, I have found it to be a compatible leadership theory to conceptualize organizational structures governance in connection to this OIP. With the organizational problem articulated, I will now proceed to frame it by 1) examining relevant literature and research and 2) conducting an analysis of external factors within the context of this PoP.

### **Leadership Problem of Practice**

The growth in college and university enrollments reflects the demand for a highly skilled and educated labour force (Brownlee, 2015). Over the past decade, according to enrollment submissions obtained from the Ontario College Application Service (OCAS) Data Warehouse, the Ontario college system has seen a near 50% increase in full-time enrollments. This enrollment growth was vastly driven by international enrollments, which saw a fivefold increase. At the same time, despite the increased focus on accountability and performance reporting over the last several decades, the system has seen minimal positive changes to KPIs (Government of Ontario, 2021). Ontario's performance-based funding reform, implemented via SMA3, will tie 60% of the provincial operating grants to institutional performance on ten metrics, while reducing enrollment envelope funding to 20%. Following exponential and rewarded enrollment growth across the Greater Toronto Area postsecondary institutions, transitioning to an enrollment corridor mechanism, which constrains growth, and a mechanism of performance metrics that financially rewards or penalizes based on compliance and performance, necessitates adjustments to planning practices not only for administrators, but also for other organizational stakeholders.

The PoP that will be examined is the role of the IR unit in supporting effective DDDM related to achievement of College X's enrollment and SMA3 priorities. The college's ability to meet its enrollment targets and perform within the agreed upon SMA directive could be jeopardized if the organizational efforts are not grounded in coordinated and effective DDDM. Webber and Zheng (2020) recognize the critical importance of "the availability and access to up-to-date and user-oriented data management and reporting tools" for enabling DDDM (p. 14). While there has been a significant effort to make institutional data accessible to decision-makers and stakeholders within existing governance structures, research suggests that access to data does not in itself equate to the ability to use data effectively, or lead to improvements (Marsh et al., 2006). Due to these factors, data experts such as those in institutional research are needed to

provide context-based information in ways that can be meaningfully interpreted and used (Webber & Zheng, 2020). Thus, the role of IR is expected to be of importance not only for ensuring availability of data and information but also for providing interpretation and analysis, at least until other users establish skills and confidence in doing it themselves.

An analysis of 252 conference papers and journal articles on analytics in higher education published between 2012 and 2018 indicates that little evidence supports improvements in student outcomes, learning and teaching, widespread adoption of learning analytics, or ethical use of data (Viberg et al., 2018). Existing research exploring the use of data to guide decisions and actions in the educational sector points to limitations in the knowledge and ability to enact DDDM in an efficient and productive manner (Knapp et al., 2006; Mandinach, 2012; Mandinach & Grummer, 2013; Mathies, 2018; Ransbotham et al., 2015; Shen & Cooley, 2008). This gap could be mitigated through organizational efforts to transition from being data-rich to being information-rich and knowledge-rich (Ridsdale et al., 2015). Ridsdale et al. (2015) argue that such “work requires both data scientists and people capable of working effectively with data” (p.3). Supporting this argument, Hossler and Bontrager (2014) note that the partnership between institutional research areas and SEM is critical in meeting the needs and demands of “the data-dependent enrollment management process” (p. 40). The work of Marsh and Farrell (2015) provides further support, as they explain that data and information need to be “combined with stakeholder understanding and expertise to become actionable knowledge” (p. 271). The key role of IR units is to support knowledge transfer through “sharing of quality information and perspective” with institutional leadership (Howard et al., 2012, p. 134). Therefore, widespread adoption of data reporting and visualization tools for sharing data insights is required to inform decision-making (Webber & Zheng, 2020). This highlights the significance of effective strategies and solutions for DDDM in this OIP context.

Initiating, influencing, and facilitating change, specifically change that is aimed at empowering and mobilizing organizational structures and individual stakeholders toward

effective use of data in decision-making, is the main priority for me as an IR leader. Therefore, the question this PoP aims to address is: *What mechanisms and processes can a college IR unit leverage to support effective data-driven decision-making related to strategic enrollment planning and management and achievement of SMA3 targets?* With the problem articulated, the next section will aim to frame it by examining relevant literature and research and conducting an analysis of external factors within the context of the PoP.

### **Framing the Problem of Practice**

Framing the PoP is instrumental in providing comprehensive perspectives on the problem at hand. This OIP relies on the relevant literature and research to provide perspective on the problem, the analysis of political, economic, social, and technological factors to identify, explain and examine how the external environment is shaping the identified PoP, and the exploration of macro, meso and micro discourses that further shape the need for change.

### **Analysis of Literature to Support the PoP**

The accountability movement dates to the 1970s and 1980s. This period saw steady increases in pressure across all provinces for performance-related information to be included in plans and budgets and in reporting on effectiveness and efficiencies (Cutt et al., 1993). During this period, PSIs in Canada experienced an approximately 30% decrease in provincial government grants, as inflation and student enrollments grew (George & McAllister, 1993). Furthermore, this tension between PSIs and government brought to light a dichotomy between the public's satisfaction with quality of education and the calls for PSIs to be more accountable for their use of public funds (George & McAllister, 1993). The accountability movement that followed in the 1990s was characterized by a power struggle between institutional autonomy and accountability through performance reporting and, more recently, performance-based funding.

The shift to greater accountability in higher education management is seen in the linking of budget allocations to performance indicators (Brownlee, 2015). Performance-based policies, which link institutional performance to accountability measures, have received considerable attention in

policy research in recent years. However, a recent systematic review and analysis of these policies in the U.S., Canada, Australia, and a number of European countries conducted by Ziskin et al. (2014) produced little evidence to show that performance-based funding led to desired institutional and student outcomes. Research related to the Ontario college context is limited, but points to similar conclusions (Hicks, 2015).

The most important results from the identified body of research on the impact of performance-based policies can be grouped into three major findings. First, the proportion of funding allocated towards performance tends to be too small to motivate institutions to focus on improving their performance indicators (Chan, 2015; Pakravan, 2006; Sanford & Hunter, 2011; Shin, 2010). Second, the use of self-reported data to measure institutional performance and allocate performance funding is not appropriate (Chen, 2011; Gonyea & Miller, 2011; Scott-Clayton & Minaya, 2016). Third, the ways performance-based policies are adopted and perceived by individual institutions greatly affects how they are enacted (Burke & Minassians, 2003; Shin, 2010; Volkwein & Tandberg, 2008). How the funding model reform impacts the College X vision and direction forward and the strategic and operational priorities will have direct implications for this OIP. However, it is important to acknowledge not only the role of leadership but also the role of stakeholders, within the SEM structure, to this change. Higher education leaders view effective “data-driven” or “evidence-based” approaches to organizational decision making as a vehicle to achieving institutional priorities (Browne & Rayner, 2015). Therefore, the ability of the stakeholders to engage in effective DDDM related to this work is essential.

Data-driven and data-informed decision-making is receiving increased attention in education research. DDDM is defined as “the systematic collection, analysis, examination, and interpretation of data to inform practice and policy in educational settings” (Mandinach, 2012, p. 71). The key components for the implementation of DDDM in the educational setting are technological tools and human capacity around data or data literacy (Mandinach, 2012; Webber & Zheng, 2020). For available tools and resources to be effectively utilized, stakeholders must be able

to use data to inform decisions. Data literacy is defined as “the ability to understand and use data effectively to inform decisions” (Mandinach & Grummer, 2013, p. 30). In the context of the identified PoP, the need for data literacy is driven by both internal calls for DDDM and such external pressures as environmental forces. Available research in higher education is limited and conflicted when it comes to the relationship between DDDM and organizational performance (Cox et al., 2017; Dougherty et al., 2014; Dougherty et al., 2016; Mandinach 2012; Webber & Zheng, 2020). However, several recent studies suggest that when implemented appropriately, DDDM has the potential to lead to desired organizational outcomes (Mandinach, 2012; Webber & Zheng, 2020). Understanding the implications of the funding model reform and building capacity for effective DDDM capacity to support responsiveness to environmental pressures are two key goals that underscore the importance of this OIP to College X.

### **Political, Economic, Social and Technological (PEST) Factor Analysis**

Regarding the identified PoP, the need for change is driven by external political, economic, social, and technological factors that describe the environment in which College X operates. These factors also demonstrate the significance of the problem and this leader’s decision to focus the OIP on it. A PEST analysis follows:

#### ***Political factors***

Introduced in 2013, SMA is aimed at operationalizing Ontario government’s priorities for post-secondary education, as specified in the Differentiation Policy Framework. The 2014-17 Strategic Mandate Agreement (SMA1) introduced a more structured way for institutions to report on a greater number of system-wide and institution-specific metrics to be used in allocating \$16.4 million in performance-based funding across the system. SMA2 introduced an enrollment-based envelope with a new corridor mechanism, differentiation envelope (performance on 38 metrics and targets) and special purpose grants. The 2019 Ontario Budget announced an increase in a portion of operating grant funding to be based on performance against outcomes on ten metrics. This reform, implemented via SMA3, entails a shift in funding

allocation from enrollment envelope to performance envelope by 2024-25, which could translate to between 15% and 20% of College X's revenues. The objectives of this reform are centered around striking a balance between accountability and reporting while encouraging institutions to align with labour market outcomes, focus on improving performance outcomes, and direct resources to initiatives that lead to positive economic outcomes. Consequently, this OIP anticipates a political reality where College X leadership places greater importance on DDDM related to forecasting future enrollments and performance outcomes.

### ***Economic factors***

The economic factors at play are closely related to political factors. As discussed earlier, Ontario's provincial government reiterated the commitment to the enrollment corridor mechanism in SMA3 and outlined how the system would move from 1.2% of operating grant funding based on performance in 2018-19 to 60% by 2024-25. This is to be achieved while constraining domestic enrollment growth and reducing the enrollment envelope to 20% through reduction of weighted-funding unit value by a factor of four. The extension of a one-year tuition fee freeze announced in April 2021, along with the shift in the proportion of funding generated via a performance envelope, rather than an enrollment envelope, could have significant financial implications for many colleges. These could stem not only from failure to meet the performance targets but also from reputational and brand implications. While the Covid-19 pandemic has postponed the SMA3 activation from 2020-21 to 2022-23, the financial uncertainty the pandemic has brought to the postsecondary system is undeniable. These factors are putting pressure on the colleges across the province. These institutions already face economic pressures due to such factors as global economic unpredictability, enrollment targets, and particularly, international student enrollment targets. Activation of the SMA3 metric targets is placing further strain on administrators and decision-making related to preservation of financial stability. Therefore, enrollment modeling and planning need to be closely aligned with the areas



of interest for administrators and sensitive to the current environment, including drivers that impact enrollment and revenue outcomes.

### ***Social factors***

Major shifts are taking place both within the post-secondary system and within the broader society. As noted on the ministry website, part of this province's vision for post-secondary education is to "support student success and access to high-quality Ontario postsecondary education" (Ontario Ministry of Colleges and Universities, n.d.). While the traditional social and welfare goals of the education system remain today, how these constructs play out is different (Apple, 2004). Browne and Rayner (2015) note that although there are benefits for greater social justice via monitoring access to post-secondary education, there are also concerns with how this data is used by the government to enact its own priorities. By focusing on accessibility, quality, accountability and sustainability, College X remains committed to serving its local communities and continuing to contribute to the province's economic and social goals. The communities surrounding College X are comprised of traditionally underrepresented populations, including first-generation students, Indigenous students, Black students, and students from socio-economically disadvantaged backgrounds. One of the priorities of College X pertains to continuing to be an access institution committed to supporting the academic and professional success of all learners. Therefore, this writer anticipates that the college leadership would be attentive to enrollment planning, mindful of its commitments to serving local communities as well as its strategic and SMA priorities.

### ***Technological factors***

PSIs are not immune to pressures from technological factors. Brownlee (2015) explains that colleges and universities across Canada are grappling with the impacts of new technologies on varying aspects of post-secondary education, as we know it. Webber and Zheng (2020) explain that HE, like the business community, is faced with pressures from the data analytics movement. They explain that technology, in the form of availability and access to

up-to-date data and data management and reporting tools, is critical for DDDM. The last decade has seen an increase of data and analytics software available to institutions to aid in DDDM efforts including enrollment management (Calderon, 2015), while the last several years have seen technological advances in the form of enterprise data warehouse (EDW) move from on-premise to the cloud-based platforms (Webber & Zheng, 2020). These trends are transforming technology infrastructure of PSIs and building a strong base for DDDM. According to Mathies (2018), “new technologies and analytics have allowed greater insight into student and institutional behavior” (p. 90). Technological tools are one of the key components for supporting data-driven decisions and building organizational data culture (Mandinach, 2012; Webber & Zheng, 2020). As Ontario institutions navigate through the pressures imposed by funding reform and the external environment, technology is expected to play an increasingly important role in the College X strategic and operational decision-making. For this reason, this OIP anticipates technological factors to be critical in connection with the identified PoP and corresponding solutions and future considerations.

### **Macro, Meso and Micro Factors Shaping the Problem of Practice**

A number of macro, meso and micro enabling and restraining forces shape the need for change. This section will focus on those of most relevance to the identified PoP.

#### ***Macro level factors***

Macro level factors influencing the PoP pertain to the funding policy reform driving the need for change. Here, the policy discourse relates to thinking that neoliberal practices would reduce the influence of government (Busch, 2017). During the SMA3 negotiations and weeks before the agreements were to be signed, it became clear that the funding reform had the potential to initiate significant changes across the system. However, due to the global pandemic the ministry made the decision to delay the activation of the performance-based funding for two years. The uncertainty around what the post-pandemic world will look like and, more specifically, what the impacts of the pandemic will be on institutions have presented themselves

as barriers to this change. Therefore, the sense of urgency from the policy reform perspective has seemingly lessened. On the other hand, the sense of urgency from the financial stability perspective has become paramount.

### ***Meso level factors***

At the meso level, factors at play tend to originate from the competing strategic and operational priorities. Understanding institutional culture, the central layer of context that shapes change, and being able to align strategies and approaches to it is critical for change agents if they want to be successful (Kezar, 2018). On one hand, in its Strategic Plan College X has emphasized achievement of financial sustainability through enrollment planning responsive to changing domestic and international demand. On the other hand, College X has had to navigate through several major organizational changes in the past year, including a range of structural, fiscal, and technological changes. Therefore, the capacity to take on additional change could be limited. What is more, the uncertainty stemming from the impact of the pandemic on enrollments could intensify competing managerial and professional logics (Lepori, 2016). Acknowledging that organizations and people “do not operate from the logic of theorists and administrators”, Baldrige and Deal (1983) explain the significance of environment in inflicting change through “the interplay between rational, political and symbolic needs” (pp. 7, 9). For this reason, viewing an organization through human resources and structural frames allows for better understanding of stakeholder readiness for change, including participation and engagement. This requires a collaborative leadership approach to engage stakeholders with varying and, at times, divergent priorities for planning to be successful implemented.

### ***Micro level factors***

The factors at the micro level relate to participation and engagement by key individuals within the SEM structure. Commitment by the SEM Team to a coordinated approach to enrollment and student success planning and decision-making is evident in the efforts to engage in a two-way dialogue and planning. This commitment is expected to act as an enabling force for

this OIP. While the change vision and direction established by the SEM Team could be communicated through the existing SEM governance structures, the extent to which the stakeholders will adopt these changes is uncertain. Resistance could occur due to varying levels of readiness and interpretation of the vision and direction of change. To address this, repeated interactions with the stakeholders would be expected to lead to the emergence of group-level leadership supportive of the change (DeRue, 2011). Given the functionalist nature of College X, as a complex system whose parts work together to promote solidarity and stability in achievement of organizational priorities (Morgan, 1980), meaningful and ongoing top-down communications from the SEM Team throughout the change process would be essential for a successful change implementation. Consequently, this writer anticipates the need to be particularly attuned and responsive to individual and group change readiness. The emerging questions that follow will not only help to understand the problem better but also inform development of potential solutions best suited to the organizational context.

### **Guiding Questions Emerging from the Problem of Practice**

Even though the existing research is pessimistic when it comes to the impact of performance reporting and funding on institutional performance (Hicks, 2015; Conner & Rabovsky, 2011; D'Amico et al., 2014; Rutherford & Rabovsky, 2014), pointing out the gap in data literacy skills and abilities (Knapp et al., 2006; Marsh et al., 2006; Mathies, 2018; Shen & Cooley, 2008), a study by Mandinach (2012) suggests that effective DDDM has the potential to lead to desired organizational outcomes. Given the identified PoP, the three guiding questions emerging are:

- How does organizational, group and individual stakeholder readiness for change influence the PoP?
- What leadership challenges could emerge from this PoP?
- What strategies could be employed to support effective DDDM?

### **The Influence of Readiness**

Although the global pandemic has postponed the activation of performance-based funding, the uncertainty around international enrollments and, ultimately, the implications for college financial stability is concerning. This has the potential to alter the timeline for the proposed change. Given the unknowns of the world after the Covid-19 pandemic, challenges related to the organizational, group and individual change readiness are to be anticipated. Therefore, assessing and understanding stakeholder readiness for change will be critical for this OIP. The relevant sub-questions emerging from this inquiry include: What are the impacts of the Covid-19 pandemic on organizational, group, and individual readiness for change? What strategies and actions could support change readiness and enable change adoption?

### **The Leadership Challenges**

The leadership challenges related to the PoP concern establishment of shared priorities and adoption of practices identified to lead the organization from the current toward the desired state. While the priority setting power would lie with the SEM team, for it to work, the approach to change implementation would need to be distributed. Jones et al. (2012) explain that a participative and collaborative approach is needed to build sustainable leadership. Therefore, the approaches to leading the change would need to be mindful of existing governance structures and responsive to stakeholder needs and readiness. The relevant sub-questions that emerge from this inquiry include: How could the existing governance mechanisms be leveraged to support the change? What role would change sponsors and the SEM Team need to assume to demonstrate the need for shared responsibility for the move from current to desired state? What strategies and actions will this leader need to employ to ensure the voices of key stakeholders are heard?

### **Strategies for Effective DDDM**

This change leader, with input from the SEM Team, needs to be wary of one-size-fits-all strategies for effective DDDM (Webber & Zheng, 2020). The last several decades have seen a

shift in the role of IR units. IR work evolved from requiring expertise in the gathering and analysis of information and producing reports for internal decision-making and external reporting purposes (Volkwein, 1999) to focusing on coaching others to access, interpret, and use data; maintaining vast institutional data holdings and managing ever-increasing demand for data and information (Rouse, 2018). With the increased use and significance of data and analytics in higher education, Webber and Zheng (2020) point out that issues such as data governance, appropriate use of predictive analytics, and institutional policies on data distribution need to be addressed. While the College X IR unit is integrated in the institution's SEM efforts, it is evident that there are opportunities to improve how the unit and its tools, resources, and efforts support DDDM. The sub-questions that emerge from this inquiry include: What barriers exist to accessing, interpreting, and using available data tools and resources? What strategies and actions could support effective DDDM? How can the effectiveness of change efforts be measured?

### **Leadership Focused Vision for Change**

This section of the OIP articulates how the desired organizational state would be achieved by using relevant theory and research. The College X Strategic Plan identifies planning for a financially sustainable future and improving processes, programs, and services as its foundations for success. Identified strategies of relevance for this OIP include a) review and optimization of the existing structures and processes, b) coordinated and improved planning across all levels, and c) development and implementation of viable enrollment plans responsive to changing domestic and international demand. College X Strategic Plan foundations and corresponding strategies have only become more relevant in the wake of the external pressures and changing post-secondary environment imposed not only by the funding model reform but also by the Covid-19 pandemic.

The gap is observed to be between the current and the envisioned future state pertaining to DDDM at College X across individual and group stakeholders. This OIP advocates for a positive

approach to framing the need for change. Armenakis and colleagues (1993) defined readiness as the cognitive precursor of the behaviors of resistance to or support for organizational change. My vision for addressing the PoP is to empower stakeholders to effectively engage in DDDM and support the achievement of the college's enrollment and SMA3 priorities while fostering a culture of collaboration and innovation. While the performance metrics and what needs to be done to ensure full funding are clear, there is a lack of clarity regarding SEM directions or short-term plans, as the existing plan is not responsive to the current organizational context. Moreover, technical and adaptive situational challenges are anticipated, since this PoP has both a technical and an adaptive dimension. This means that challenges may be clearly defined; however, solutions may not be straightforward.

As an adaptive leader, supporting the future vision and DDDM efforts in this context, this writer will need to provide stakeholders with opportunities to “learn new ways of dealing with the inevitable changes in assumptions, perceptions, beliefs, attitudes, and behaviors that they are likely to encounter in addressing problems brought about by the environment in which they operate” (Northhouse, 2018, p. 258). Recognizing that an “environment is always changing by virtue of the adaptive orientation of other agents, and hence is unknowable,” as Mason stated (2008, p. 44), leaders who can encourage and facilitate these processes successfully are critical. For this reason, the responsibility for an effective solution would be shared between leaders who can act as resources, supporting individual and group stakeholders, who will need to change and adapt.

### **Current State**

To help navigate complex environmental changes over the last decade, College X established a robust, shared governance structure in 2014, to support institution-wide decision-making related to enrollment management alongside the executive team. The SEM governance structure is sponsored by VP, Strategic and Institutional Planning and Senior VP, Academic and led by the SEM Team that also includes Associate VP, Academic, Associate VP, Enrollment Management, Director, IPA, Director, Financial Planning, and Dean, International. The SEM

work is operationalized by four committees: 1) Core SEM Team, 2) Marketing, Recruitment and Conversion Committee, 3) Student Success and Retention Committee and 4) Pathways Committee, each leading operationalization of different SEM priorities. To ensure voices of both academic and non-academic leaders are heard, all operating committees are co-chaired by a senior academic and a senior administrative leader and have leadership representation from academic and non-academic areas (see Appendix A).

Following the announcement of the enrollment corridor mechanism in 2017-18, the Enrollment Planning Group, comprised of four members of SEM Team and Dean, Program Planning, Development and Renewal, was formed. The group operates within the SEM governance context by leading the enrollment planning process used to inform the college's budget planning. This is done in close collaboration with Deans, Associate Deans and operational faculty leads. The annual enrollment planning process is intended to be mindful of the college's strategic and SMA priorities and involve examination of enrollment projections split by domestic and international enrollments, along with a review of program-level performance indicators. While this approach to enrollment and budget planning is well-organized, the need for existing tools, resources, and processes to be further streamlined and optimized better and more consistently is acknowledged within the identified PoP.

### **Future State**

A gap therefore exists between the desired engagement with and understanding of available tools and resources to support effective DDDM. Leadership vision for change, in the context of the identified PoP, is for the stakeholders to 1) understand the corridor-funding model introduced during SMA2 and performance-based funding implemented via SMA3, 2) have a shared understanding of the college vision and direction forward, and 3) be able to access, interpret and use the data and information available to inform strategies and activities aimed at achieving College X priorities. According to Hernes (2008), organizations are stable only for a period before their environments change again and they need to respond by changing



themselves. To help conceptualize the difference between the two states assumed to be stable between the changes, Hernes (2008) offers an analytical framework. Using this approach to explore the organizational state before and after funding model reform could shed light on relationships between the states and evolution of the organization and also on structures and agents involved in bringing about the organizational change.

The path from the current to the desired state would need to be informed by the SEM Team but executed in a collaborative manner by key stakeholders within the SEM structure. According to Yukl and Mahsud (2010), senior college leaders “have the primary responsibility for providing such leadership, but middle or lower-level managers are often in a better position to see the first signs of serious problems that will require an unconventional response” (p. 90). Therefore, the SEM Team will need to establish the vision and strategy, with support from the SEM committees and feedback from other college stakeholders. Individual and group stakeholders impacted by this change will need to be actively engaged in informing enhancements to available IR tools and resources as well as engagement activities aimed at information sharing and capacity building. While organizational data literacy, as related to enrollment planning and SMA3 targets, is a desired long term goal, it may take years before the impact can be observed and measured. For this reason, development and implementation of a strategy to support organizational data literacy efforts in the context of the identified PoP would be an appropriate goal and focus for this OIP.

### **Change Drivers**

Change initiatives tend to be complex and challenging for organizations to plan and implement. An incremental change is the optimal way to respond to factors and practices shaping this PoP, and their anticipated future impacts. This approach calls for internal alignment with the implementation of the proposed change initiative. For this reason, better understanding of the organizational contexts, structures, and stakeholder dynamics could support change planning and implementation. Whelan-Berry and Somerville (2010) explain

change drivers as “events, activities, or behaviors that facilitate the implementation of change,” and note that there are two ways in which change drivers are used (p. 176). One is to facilitate the implementation and adoption of change, and the other is to identify the need for change. Moreover, Whelan-Berry and Somerville (2010) claim that organizational change happens at multiple levels of the organization and that eventually most organizational change initiatives require change at the individual level. While a change intended to support DDDM could be perceived as a minor, incremental change, its potential impacts suggest broader and more complex implications.

In the context of this OIP, the need for change is driven by forces outside the organization. Based on my observations, these drivers include 1) implementation of the corridor mechanism in 2019-20 and the performance-based funding model introduced via SMA3 and 2) changes across the global, national, and provincial HE landscapes. These drivers are expected to be instrumental during the awakening and mobilization stages of the change process.

Henderson (2004), as referenced by Black (2010), explains that research and data help 1) build institutional understanding of the drivers underlying change, 2) shape institutional directions and aspirations, and 3) demonstrate the need for shared responsibility for desired outcomes. Therefore, this OIP focuses on the drivers for change implementation and adoption.

First, acceptance of change vision and direction by the SEM governance structure and key stakeholders is essential. This means that to ensure the success of the proposed organizational change initiative all stakeholders need to have a shared understanding of the vision and direction forward. In an organization with distributed governance, a vision and direction that originate from collaborative efforts are key for success. Second, change-related communications are instrumental in facilitating understanding, participation, and engagement across individual and group stakeholders. What is more, given the leader’s positionality and the positionality of the stakeholders, including change sponsors within SEM Team, formalized, ongoing, top-down communications are important. Third, core stakeholders' engagement in

change-related activities, including promotion of the change vision and short-term outcomes to cross-functional stakeholders, is critical. According to Leithwood (2006), effective leadership distribution includes those who have the knowledge and expertise to carry out leadership activities and well-coordinated change initiatives. Finally, change-related training, designed to provide stakeholders with new knowledge, skills and processes, is instrumental in sustaining the momentum of the planned change. If successful, it would be desirable to have the change fully incorporated into the annual planning process. This would require the change to be institutionalized within the process itself, which is beyond the scope of this OIP.

### **Organizational Change Readiness**

Successful organizational improvement initiatives are dependent on the organizational change readiness. Organizational change readiness is a multi-level construct present at the individual, group, and departmental level (Weiner, 2009). Observations made by Gartner (2009) suggest that organizations lose major opportunities due to their lack of readiness to innovate effectively. Holt et al. (2007) explain that “readiness occurs when the environment, structure, and organizational members’ attitudes are such that employees are receptive to a forthcoming change” (p. 290). The change readiness “depends on previous organizational experiences, managerial support, the organization’s openness to change, its exposure to disquieting information about the status quo, and the systems promoting or blocking change in the organization” (Cawsey et al., 2016, p. 111). Taking these perspectives on organizational readiness into consideration, change is a complex construct.

Before initiating change, it is important to consider the conditions that affect change. This can be done by assessing organizational change readiness. Assessing organizational change readiness for DDDM at College X involved the completion of a tool, adapted from Stewart (1994), Holt (2002) and Judge and Douglas, (2009), by Cawsey et al. (2016). The tool assessment scores can range from a minimum score of -25 to a maximum score of + 50, with scores of 10 and below suggesting that the organization is not ready for change. My responses,

based on my organizational and SEM structure positionality, to the 36 items distributed across six dimensions of change readiness resulted in a total score of 28. While my assessment of College X's organizational readiness indicates that the institution is ready to make the transition from the current to the desired state, it also reveals opportunities in where resources could be directed to help prepare the organization for change vision development and implementation.

The assessment tool used consists of the following dimensions of change readiness: previous change experiences, executive support, credible leadership and change champions, openness to change, rewards for change and measures for change, and accountability (Cawsey et al., 2016). The tool completion unveiled gaps in two dimensions. First, the total score for previous change experiences was only one out of a maximum of four points. This finding is significant because College X has had several challenging experiences with change in the past few years. This could have a negative impact on change readiness. Weiner (2009) argues that “many organizations fail to generate sufficient organizational readiness and, consequently, experience problems or outright failure when implementing complex organizational change” (p. 3). Cynicism about organizational change, a concept introduced by Wanous et al. (1994), is argued to reflect a) pessimism about future organizational change being successful and b) negative attitudes about those believed to be responsible for failures (Wanous et al., 2004). Studies have found that negative attitudes about organizational change are impacted by failed change initiatives (Andrew, 2017) and directly impact stakeholders' resistant and support behaviors (Armenakis & Harris, 2002). Therefore, seeking opportunities and pursuing actions to address this would be important for the success of this OIP.

Second, the organization's total score on openness to change was just eight out of a maximum of 22. Openness to change is perceived as willingness to support the change and feeling positive about the potential consequences of the change (Devos et al., 2007; Miller et al., 1994). A successful history of change was found to impact openness to change within an organization (Wanberg et al., 2000). However, employee openness to change is also impacted by

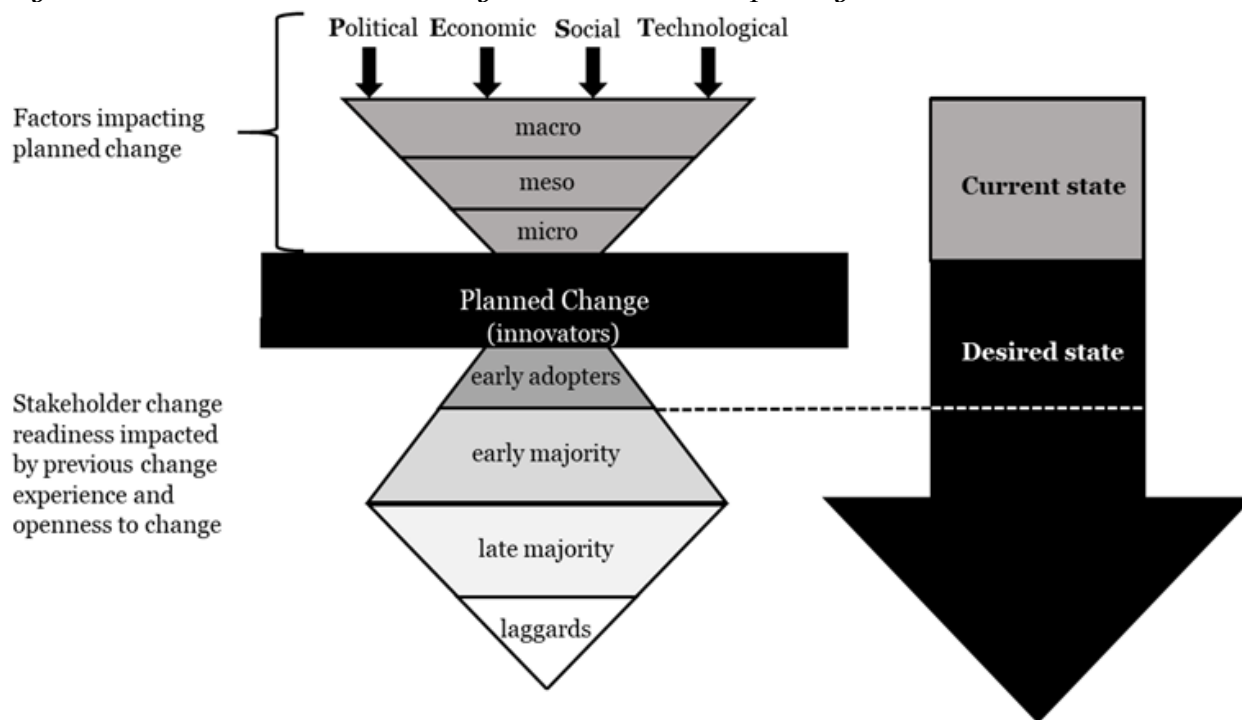
information received about the change, ability to cope with the change, and acceptance of change (Wanberg et al., 2000). This points to the significance of influencing the views about the change appropriateness for the organization, supporting the belief that those affected can undertake the change, and ensuring the availability of resources to effectively support the change. These could be mediated by adequate change-related communications and opportunities for those affected by change to actively participate in the process before the change is initiated (McKay et al., 2013). For this reason, understanding the role of those impacted by change is key for supporting organizational change readiness.

A paper by Armenakis and Harris (2009), titled “Reflection: our Journey in Organizational Change Research and Practice”, shifts attention from a leader-centric to a follower-centric path toward supporting organizational change readiness. This is done in an effort to better understand “what change recipients consider when making their decision to embrace and support a change effort or reject and resist it” (Armenakis & Harris, 2009, p. 128). The authors isolate six themes from the contributions to change management theory, research, and practice. Of those, change recipients' involvement and participation stands out as especially relevant to supporting change readiness at College X in the context of the two identified readiness dimensions.

Preparing an organization for change requires strategies focused on those affected by change. Change recipients' active participation needs to be a fundamental aspect of the organizational change efforts and process to increase the likelihood of sustainable change (Armenakis & Harris, 2009). These efforts could involve participative decision-making related to the development and implementation of change vision (Armenakis et al., 1999). Participative decision-making has been shown to be closely related to organizational commitment (Hulpia et al., 2009). Napier et al. (2017) stress the importance of assessing organizational change readiness to better understand how to engage employees in the change process and efforts. The significance of this lies in the potential for different views pertaining to organizational readiness

between leadership levels within the organization (Lokuge et al., 2019). Readyng employees through effective communications about the change process and expectations with respect to the change efforts and process is one of the most effective strategies leaders could employ (Andrew, 2017). Smith (2005) emphasizes the importance of devoting resources in developing change readiness for individuals, as it is one of the key success factors of change. As a result, a thorough understanding of individual readiness for change is essential for a thorough understanding of the overall organizational readiness for change.

From structural and human resources perspectives, innovation plays an important role in planned organizational change initiatives. A study by Lokuge et al. (2019), speaks to the potential of innovation using digital technologies, as well as the dangers of not innovating in competitive markets. This study is considered one of the first to assess organizational readiness for digital innovation (Lokuge et al., 2019). Facilitating the adoption of digital technologies for innovation requires willingness and ability to act toward complex changes (Weiner, 2009). Participative decision-making on behalf of those impacted during the change process is essential. Organizational change readiness assessment, along with individual readiness for adoption of technologies, will inform effective strategies for readyng the organization and stakeholders for planned change at College X. Figure 1 illustrates factors impacting the need for change, along with stakeholder change readiness informed by the completion of the organizational assessment tool. Assuming the change adoption follows the normal distribution, as supported by many empirical cases, the change adopters fall into the following five categories: Innovators (2.5%), Early Adopters (13.5%), Early Majority (34%), Late Majority (34%), and Laggards (16%) (Rogers, 1962).

**Figure 1***Organizational and Individual Change Readiness and Impacting Factors*

*Note:* Adapted from Cawsey et al. (2016) and Rogers (1962)

In the context of this OIP, planned change is impacted by political, economic, social and technological factors, along with macro, meso, and micro factors. Recognizing the complex and incremental nature of the change, this OIP would involve Innovators, Early Adopters, and Early Majority in the change process. Involvement of Late Majority and Laggards is considered outside the scope of this OIP and would be part of the institutionalization of the change, addressed in the Next Steps and Future Considerations section.

The significance of change readiness to complex organizational change is undeniable. According to readiness theory, and consistent with the proposed views, readiness for change is a precursor to the successful implementation of complex changes (Lokuge et al., 2019). Holt et al. (2007) define readiness for change as:

a comprehensive attitude that is influenced by the content (i.e., what is being changed), the process (i.e., how the change is occurring), the context (i.e., circumstances under

which the change is occurring), and the individuals (i.e., characteristics of those being asked to change) involved and collectively reflects the extent to which an individual or a collection of individuals is cognitively and emotionally inclined to accept, embrace, and adopt a particular plan to purposefully alter the status quo. (p. 326)

Therefore, the readiness efforts would need to involve change sponsors and strategies aimed at heightening awareness of the need for change and building momentum to undertake the change by focusing on individual and group stakeholders and their engagement with the change process.

### **Chapter 1 Conclusion**

This first chapter highlights how the external pressures and the funding model reform are evident in the organizational context, structure, dynamics, approaches, and practices at College X. The main observation is that organizational decision-making, behaviors, and actions are not independent of the environment they operate in, dominant trends, and factors that surround it. Distributed SEM governance structure could be leveraged to help drive College X strategic and SMA3 priorities related to enrollment planning in a data-informed manner with involvement from individual and group stakeholders. The college leadership and the IR unit share responsibility for organizational change aimed at empowering and mobilizing organizational processes and stakeholders for effective DDDM.



## **Chapter 2: Planning and Development**

Chapter 1 examined the impact of the external forces and environment on the organizational context related to the identified PoP and the leadership approaches that align with this writer's personal leadership philosophy and views. In addition, the PoP highlighted the need for effective DDDM in the wake of growing external pressures and changing environment and internal motivation to maintain or grow revenues and market share. Chapter 2 continues this work by describing the ways that chosen leadership approaches and change models can help College X realize change in response to the identified PoP. This is followed by critical organizational analyses to identify the goals for a change plan. I conclude the chapter by offering a viable solution to address the PoP and ethical considerations involved.

### **Leadership Approaches to Change**

The leadership approaches chosen to propel change intend to leverage principles associated with distributed and adaptive leadership. In the context of this OIP, and more specifically, Chapter 2, these approaches are intended to empower stakeholders within the SEM structure and processes, while also providing more meaning through participation and teaming. Given this writer's organizational and SEM structure positionality, shared leadership is a more appropriate form of team leadership than hierarchical leadership, represented by the solo leader (Brown & Gioia, 2002; Day et al., 2004; Yukl, 2010). Moreover, support for the efficacy of shared leadership and team outcomes was found in a meta-analysis of shared leadership by Wu et al. (2020). The shaping of identities and relationships across all directions, forming and enabling new group leadership structures are products of a social interaction process of repeated leading-following interactions (DeRue, 2011). This aligns with the idea that social authority is generated through the continual creation of power-with or power-over via practice and social interactions (Woods, 2016). The chosen leadership approaches are seen as complementary given the organizational context and dominant principles and practices at College X, and they can be effectively applied to the identified PoP.

Despite hierarchical approaches to governance and leadership at College X, team-centric leadership approaches are evident in the cross-functional SEM structure. However, there are challenges with this governance structure. Leading cross-functional teams, according to Parker (2008), is the most complex form of leadership. This is because it requires leading by influence rather than authority, coping with competing agendas, coordinating with both senior and functional leadership, and many other challenges. Effective team leadership requires communication of a vision, the creation of a clear mission and the development of goals, objectives, and action plans (Parker, 2008). Moreover, team leaders are characterized as being collaborative, integrative, diplomatic, non-malevolent, and administratively competent (Northouse, 2018). These practices and behaviors align with my own observations regarding how academic and administrative leaders work together at College X and within the SEM governance structure.

Team leadership functions, according to Northouse (2018), can be fulfilled by the formal team leader and/or shared by team members; however, for teams to excel, the organizational context must promote involvement. The growth and performance-oriented College X culture looks to the SEM structure as a team-focused governance vehicle aimed at informing, developing, and implementing decisions related to organizational priorities. The benefits of effective organizational teams include many desirable outcomes, such as greater productivity and performance, more effective use of resources, better decisions and problem solving, better-quality products and services, and greater innovation and creativity (Bergman et al., 2012; Ensley et al., 2006; Hoch, 2013; Parker, 2008). Wu et al. (2020) found that the positive relationship between shared leadership and team performance had two substantive moderators – intragroup trust and task interdependence. This finding suggests that the relationship is more positive when interdependence and trust are higher. The most effective organizational teams tend to have a balance of team player styles that allows them to use different styles as necessary.

Without a doubt, these are the outcomes and culture that the growth and performance driven College X is striving to achieve via its SEM framework structure.

### **Distributed Approaches Complemented by Adaptive Approach**

Given the complex and dynamic nature of PSIs, organizational change, according to Manning (2018), must be viewed in the context of the organizational model and reflect on the context in which the change is taking place. From an organizational perspective, change development and implementation needs to be sensitive to the College X organizational context. The change also needs to make use of existing organizational structures and processes to support effective DDDM within the SEM context.

While the SEM framework and structure have been in place for over five years, informing decisions ranging from future program offerings to student retention strategies and marketing and recruitment efforts, reliance on data to drive and inform those decisions appears to have subsided. Meaningful engagement and participation in DDDM via strategies tailored to fit College X's dominant bureaucratic and managerial culture and archetypes have the potential to resurrect engagement with data within the SEM structure. In writing about organizational cultures, Cacciattolo (2014) explains that there are two views on such cultures -- interpretative and structural. She describes the structural view, which focuses on how relationships are structured, as being grounded in the works of Weber and Marx, as explained by Levine et al. (2006), which comes from a functionalist school of thought. College X fits this view. Therefore, my efforts will focus on fostering relationships within the SEM governance structure aimed at supporting organizational priorities. Gosling et al. (2009) explain that one needs to "appreciate [that] the function of a distributed perspective on leadership requires recognition of the social, political and power relations within organizations" (p. 300). By distributing the power to inform the path forward for stakeholders within the SEM structure and related functional areas, this OIP will not only seek buy-in for the change but also support eventual institutionalization of the practices and activities that would emerge from this highly collaborative change initiative.

From the individual perspective, situational and adaptive leadership approaches will inform how the proposed change is both planned and implemented for individual and group stakeholders. This will be done in a manner that is mindful of the existing governance as well as individual and organizational change readiness. The situational approach argues that “leadership is composed of both a directive and a supportive dimension, and that each has to be applied appropriately in a given situation” (Northouse, 2018, p. 93). Based on this evaluation, the leader adjusts their directive or supportive style to suit the evolving needs of followers, adjusting their style to the followers' competence and commitment. According to Blanchard (1985, 2013), development level is the degree of competence and commitment necessary to accomplish a given goal or activity. The development levels describe combinations of commitment and competence on a given goal and are goal specific rather than follower specific. Therefore, to be effective as a leader, this writer needs to be able to assess individual and organizational competence and commitment to a specific goal and adapt her style to the demands of different situations.

Carew et al. (1986) suggest that groups go through development stages that are similar to those of individuals. For this reason, leaders should strive to match their leadership styles to a group's development level. Northouse (2018) stresses that more research is required “to explain how leaders can adapt their styles simultaneously to the development levels of individual group members and to the group as a whole” (p.102). Leadership approaches, in this OIP, aim to empower stakeholders by providing more significance through participation and teaming. Groups often have more knowledge, diverse perspectives, and collective energy than individuals working alone, as suggested by Buller (2015). This tends to result in improved communication and increased acceptance of ideas within a collective. Strategies and methods for leading change consider not only the institutional culture and dominant archetypes at College X but also individual and group developmental levels, in order to ensure uptake by individual and group

stakeholders. For that reason, this approach is perceived as adequate for the identified PoP and this OIP.

To effectively implement the chosen approach in the College X context, this OIP draws from two approaches to team development applied in the higher education context. The first is Jones et al.'s (2012) application and examination of an Action Self Enabling Reflective Tool (ASERT). They recommend the use of ASERT in facilitating collaboration between cross-functional and cross-hierarchical actors and for building organizational leadership capacity. Moreover, they propose a “distributed approach to leadership that, while acknowledging traditional leadership focus on the traits, skills and behaviors of individual leaders, encompasses the need to take account of contexts, situations, environments and contingencies in which leadership occurs” (Jones et al., 2012, p. 68). The second approach is the Tuckman's five-stage model (1965, 1977). This is one of the most well-known and well-researched approaches to team development (Bonebright, 2010). The model concerns a group life cycle comprised of forming, storming, norming, performing, and adjourning that are focused on development of interpersonal relationships and task activity (Tuckman, 1965; Tuckman & Jensen, 1977). In addition to ASERT, principles from Tuckman's model would be used in this OIP to inform how stakeholders are supported and developed as they build capacity for effective DDDM. In her empirical review of distributed leadership studies, Harris (2008) found a positive relationship between distributed leadership and organizational change. However, she notes that the ways distribution patterns have been established has an impact on outcomes of organizational change and performance. Being able to successfully apply these leadership approaches within the College X context is critical.

Given the functionalist nature of College X, it is important for the change leadership to engage with the stakeholder within the SEM structure in meaningful top-down conversations and seek performance strategies while also readying stakeholders for change. Yukl and Mahsud (2010) explain that there is a growing interest in skills of relevance to adaptive leadership,

including cognitive complexity, system thinking, and social intelligence. These skills are of particular significance for this writer, as a leader, in the context of this OIP and, more specifically, in leading the change process.

### **Framework for Leading the Change Process**

The purpose of this section is to identify appropriate theoretical underpinnings and tools in an effort to design a conceptual framework for leading the planned change process. Therefore, the section requires awareness and understanding of theories, tools, and practices relevant to the identified PoP that can be effectively brought together to complement the leader's style and organizational context, while being mindful of change drivers. Buller (2015) argues that distributed organizational culture, dominant in the higher education context, 1) makes the common models of change management ineffective in this setting, 2) requires deeper understanding of the rationale for the change process and consideration of multiple perspectives to a problem and 3) calls for non-traditional change models to be considered. For this reason, I consider a conceptual change for leading change more suitable.

### **Organizational Theories Informing Leading the Change Process**

Evolutionary and institutional theories serve as the context-setting theories for understanding the interplay between environment and institutions in the leading change process. According to Kezar (2018), evolutionary theories suggest that resistance and obstacles to change emerge because many change initiatives originate outside the organization and may violate existing norms and practices. The aim of institutional theory is to understand how cultural, political, social, and environmental influences shape organizations. DiMaggio and Powell (1983) identified three external institutional forces that replicate structures: authoritarian, normative, and mimetic. Political science is at the heart of institutional theory, the idea being that institutions are shaped by wider cultural, political, social, and environmental factors (Manning, 2018). In the context of higher education, institutional theory focuses on the organization and functioning of PSIs.

Understanding how PSIs are organized and how they function is essential for leading the change process. Institutional theory has the potential to provide deeper understanding into how external factors shape not only College X but also the leading change process (Lepori, 2016; Manning, 2018). From an institutional theory perspective, the pressures from the funding model reform could lead to tensions between managerial and professional logics (Lepori, 2016; Manning, 2018). Institutional logics, a concept within institutional theory, are argued to be determinant of organizational change and, more specifically, the “fit” between logic and situation (Thornton et al., 2012). According to Thornton and Ocasio (1999), logics are “the socially constructed, historical patterns of material practices, assumptions, values, beliefs, and rules by which individuals produce and reproduce their material subsistence, organize time and space, and provide meaning to their social reality” (p. 804). They provide “a more nuanced framework ... [for actors to] be strategic and creative in responding to conflicting pressure of managerial and academic logics beyond the simple choice between adoption and resistance” (Lepori, 2016, p. 253). Organizations evolve and grow as actors make decisions within the context of the organizations in which they are embedded (Manning, 2018). The concept of hybridity explains that PSIs are pressured by both managerial and professional logics, and how these are managed and absorbed into their identities varies (Lepori, 2016). This emphasizes the importance of human agency in the leading change process.

Institutional theory provides a lens for understanding institutions and processes, whereas contingency theory provides a lens for understanding organizations and how to improve them. Greenwood et al. (2014) argue that institutional theory does not provide a sufficient understanding of how organizations are structured and managed, and that principles from contingency theories can fill that gap. In line with this, Van de Ven et al. (2013) describe the fit between an organization’s structures and systems and its organizational and environmental contexts, cautioning about context-specific logics at play. For this reason, the

traditional top-down approach, associated with managerial culture, is not sufficient on its own for leading organizational changes.

While the top-down methodology associated with the managerial culture values performance, supervisory skills, and fiscal responsibility, it is not appropriate for change development and implementation due to the collegial culture prevalent within faculties and other stakeholder groups (Kezar, 2018). Collegial culture encourages diverse perspectives and autonomy in one's work. It is characterized by informal, non-hierarchical, and long-term relationships and by leadership that emerges from committee and group activities or autonomous academic activities (Bergquist & Pawlak, 2008). On the other hand, managerial culture finds meaning in the organization, implementation and evaluation of work directed toward specified goals and purposes. It values fiscal responsibility, efficiency and managerial skills and is characterized by a formal, hierarchical structure (Bergquist & Pawlak, 2008). Bergquist and Pawlak (2008) stipulate against striving for a unified organizational culture, explaining that, even though they can be at odds, all cultures need to be brought into a dialogue to create an optimal organizational state. Bringing these organizational theories' concepts together would be significant to how they inform the practices chosen to guide change in response to the identified PoP.

### **Defining and Understanding Organizational Change**

Understanding organizational change is essential before one can inform and develop a framework for leading change. Buller (2015) identifies three types of change: reactive, proactive, and interactive. Reactive change is motivated by a significant perceived threat that is outside of an organization's control; it therefore sees change as having been forced upon it. Proactive change refers to preparing for change that will eventually be forced upon an organization. The organization can prepare for what is to come by identifying the source of a threat, mapping a course of action, and adjusting direction to successfully face the change. Interactive change involves changes needed due to internal rather than external forces. Interactive types of changes are thought to be the most



difficult to lead (Buller, 2015). The identified PoP is driven by external pressures, including implementation of the enrollment corridor mechanism and performance-based funding. A metaphor, provided by Morgan (2006), of an organization as a living organism trying to adapt and survive in a changing environment resonates within the context in which College X operates. For this reason, proactive change involving the SEM Team and SEM governance structure is needed to address this gap in practice.

Proactive changes tend to have fewer time constraints than reactive changes, which means they allow for more innovative solutions (Buller, 2015). However, these changes also require more time to implement. The implications of the funding model reform and, more specifically, achievement of the SMA3 targets, do not pose an imminent threat to College X's fiscal sustainability. However, this "reinforces the notion that change leadership in higher education requires a commitment to creating cultures of innovation, that is, an environment in which new ideas flow from many sources simultaneously and alternative perspectives are valued and rewarded" (Buller, 2015, p. 193). College X is currently in reactive mode due to the Covid-19 pandemic; however, decisions made today will have long-term implications. Therefore, the relevant type of organizational change is proactive in nature, focused on process, organizational scale and, in the short term, first-order changes, with potential to lead to second-order, long-term change.

The aim of these first-order changes is to support decision-making focusing on first order skill sets. Now more than ever, PSIs need to engage in thoughtful cross-functional conversations to navigate through the new realities imposed by environmental pressures. Kezar (2018) offers a rationale for why HE needs to change and how HE leaders can direct change while bearing in mind their unique organizational context. Kezar's perspective, that the environment is fluid due to the pressure of external forces, validates my observations of how data and information could be corporatized to achieve the ministry directive toward an outcome-driven college system. Melguizo et al. (2017) have explored productive efficiency,

defined as community colleges' production of student outcomes at a given level of expenditures, to better understand relationships between equity and efficiency in community college funding. Their findings revealed the major influence of inter- and intra-institutional differences (Melguizo et al., 2017) that risk creating institutions that act to produce desired outputs rather than to produce graduates who are contributing members of their communities (Busch, 2017; Dougherty et al., 2016). This in turn affects the type of changes that can flourish, compared to those that are more difficult to pursue because they do not align with organizational values (Kezar, 2018). Making the necessary changes to support a new undertaking, while being wary about misinterpretation regarding how culture and context influence strategy selection, calls for the use of methods that complement the culture of the organization they are trying to improve (Kezar, 2018). Thus, approaches to leading this organizational change will be sensitive to the College X organization context, including culture.

While College X has ample experience with developing and implementing complex organizational changes, this does not imply that the stakeholders are more receptive to change. In explaining features of PSIs and distributed organizations, Buller (2015) emphasizes shared governance. Like other PSIs, shared governance mechanisms have emerged at College X. While looked upon favorably, a distributed approach to governance brings to light "less immediately visible factors, like power relationships, politics, beliefs, biases, and perceptions" (Buller, 2015, p.5). Buller's (2015) example of the IKEA effect and rationale for how change is enacted through distributed governance, composed of promoters and hidden opponents who pursue the status quo, resonates with the College X context. Consequently, the approach to bringing about change through distributed governance mechanisms requires change agents who see through these less visible factors and have a solid understanding of the environment and dynamics within.

### **Frameworks for Leading Change**

The framing theories identified to be appropriate here, based on the scale, degree, and type of change, include Kotter's Eight-Stage Change Process (1996) and Cawsey and colleagues' Change-

Path Model (2016). Both models are focused on organizational-level change, with Kotter's model employing a more prescriptive approach and Cawsey and colleagues' model a combination of descriptive and prescriptive approaches. Lewin's Model (1951), focused on developing and implementing change through a three-step process of unfreezing, changing, and refreezing, was also considered. After deeper examination, the descriptive and system-level change approach of the model was found to be overly simplistic for the complex change required at College X. The Eight-Stage Process (Kotter, 1996) and the Change Path Model (Cawsey et al., 2016) are more suitable, given the nature and organizational context for this change. In the effort to identify which one of the two is more suitable for this OIP, the following sections explore both models in relation to the identified PoP.

### ***Kotter's Model***

Kotter's Change Model consists of eight stages corresponding to the eight common mistakes that the author argues impact the change process (Kotter, 1996). The stages are: establishing a sense of urgency, creating the guiding coalition, developing a vision and strategy, communicating the change vision, empowering a broad base of people to take action, generating short-term wins, consolidating gains to produce even more change, and institutionalizing new approaches in the culture (Kotter, 1996). In broad strokes, the first four stages are aimed at challenging the status quo, while stages five through seven are intended to introduce new practices. Stage eight is intended to institutionalize the changes across the organization. These eight stages resemble Lewin's model; however, they tend to be more prescriptive in nature.

Kotter (2012) cautions change agents from jumping immediately into introducing changes via stages five through seven without previously dedicating appropriate attention to the first four stages of the process. What stands out is the importance of the model sequence in ensuring the momentum needed to drive the change. Progressing well through stage one by establishing a sense of urgency through identification and discussion of potential crises and opportunities before moving forward with the other stages is key (Kotter, 1996, 2012). The model allows flexibility for

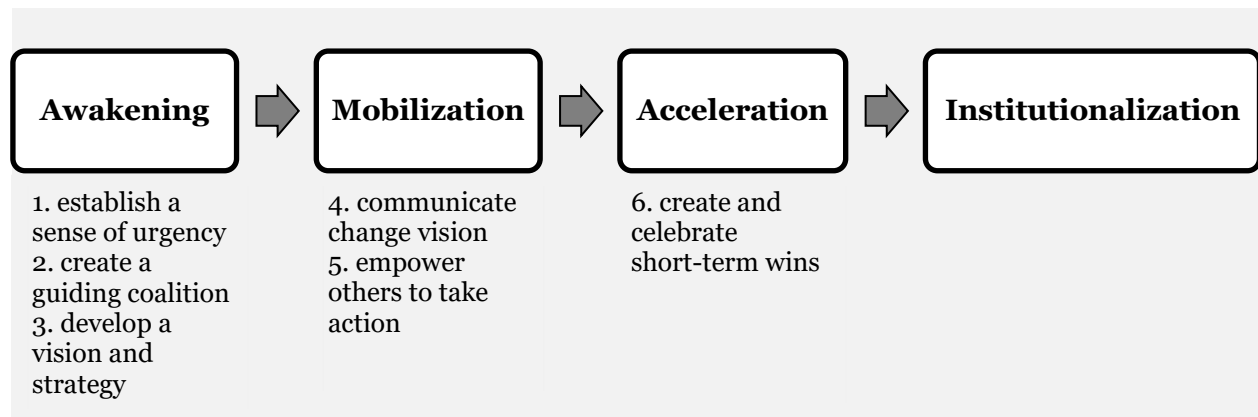
working through multiple stages simultaneously, but it requires following the prescribed sequence. According to Lichtenstein and Plowman (2009), agents acting in complex adaptive systems continuously make meaning of interactions and adjust their behaviors in response. Doing so changes the system through organizational transformation. Acknowledging that most complex changes are multiple smaller scale changes, executed as part of the bigger change initiative, Kotter's model allows for nested smaller change initiatives within the bigger change initiatives.

### ***The Change Path Model***

Cawsey and colleagues' (2016) model for leading organizational change "combines process and prescription" (p. 51). As illustrated in figure 2, the model consists of four steps: awakening, mobilization, acceleration, and institutionalization. During the first step of the process, awakening, the need for change is articulated. The emphasis is placed on "identifying and clarifying the need for change, assessing the organization's readiness for change, and developing the vision for change" (Cawsey et al., 2016, p. 51). In the second step, mobilization, what needs to change is articulated and the vision is finalized by involving others in the change process (Cawsey et al., 2016). In the third step, acceleration, the focus is on planning and implementation for moving from current to desired organizational state (Cawsey et al., 2016). In the fourth step of the Change Path Model process, institutionalization, transition to the desired state is made (Cawsey et al., 2016). This stage also involves tracking the change through multiple measures to help assess what is needed, gauge progress, and make modifications (Cawsey et al., 2016). Figure 1 also displays how the select steps from Kotter's 8-Stage Change Process are to be incorporated with the Change Path Model. Doing so will allow for an added layer of prescription to the smaller changes involved in this complex change process.

**Figure 2**

*The Change Path Model Complemented by Select Steps of the 8-Stage Change Process*



*Note:* Adapted from Cawsey et al. (2016) and Kotter (1996, 2012)

The two models are used in this way for several reasons. Kotter's Model is too linear for the College X organizational context and complex nature of the change process. Cawsey and colleagues' Change Path Model involves fewer stages and offers more flexibility. This framework is suitable since it can be applied to and used with other models and approaches. Moreover, this descriptive and prescriptive model can be effectively applied to the type of change this OIP aims for. What drew me to combining these two models is the potential to complement the simplicity and flexibility of the Change Path Model approach with the prescriptive steps and aspects of the Kotter's Change Model (1996, 2012).

Recognizing my positionality within the organization and the fact that many of the stakeholders I would be working with hold as much, and in many cases more, power than I do, this will be first-order change. This type of change is appropriate, as there may be barriers and resistance to change that would be best addressed through collaborative approaches, including a) developing and understanding vision and direction and b) mobilizing efforts for the change initiative that include participation and involvement in the change process. Through stakeholder interactions, the proposed change could provide "the potential for specifying the construction process of collective action, and thus collective actors" (Lichtenstein et al., 2006, p. 5). As

already discussed, the chosen leadership approaches along with the context-setting organizational theories were found to be compatible with the Change Path Model (Cawsey et al., 2016). The following section will engage in critical organizational analyses, using Nadler and Tushman's (1980) Congruence Model (Figure 3).

### **Critical Organizational Analysis**

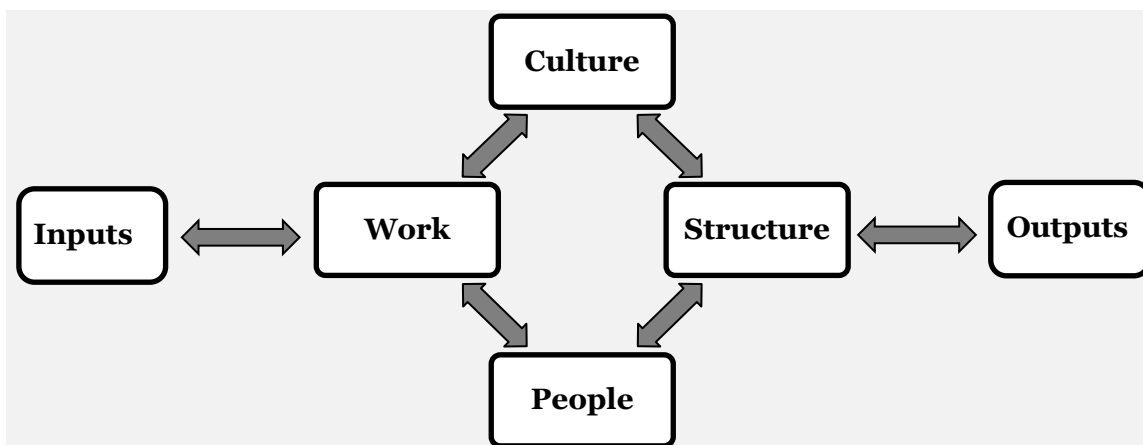
The environment in which the 24 Ontario public colleges operate is changing due to the introduction of SMAs, the corridor funding model, and performance-based funding, and this is impacting both the systemic and institutional levels of governance. As Capano (2011), explains, changes in systemic and institutional governance are a product of governments' responses to changes in their respective environments. Therefore, it is not surprising to see that neoliberal reforms can bring about major changes that lead to a reassessment of existing trust relationships, not only between institutions and government but also within institutions themselves (Austin & Jones, 2016). Understanding organizations and, more specifically, organizational behavior can help inform the changes required to weather these challenges. Organizational behavior refers to "a field of study that investigates three interdependent systems -- the individual, the group, and the overall organizational context -- to develop better understanding of the workplace, especially when managing people" (Kinicki & Fugate, 2012, p. 3). Assessing organizations in terms of how effectively and efficiently they gather input from the external environment and transform these into outputs that the external environment values is examined (Cawsey et al., 2016). To do so well in the College X context, detailed examination and solid understanding of the context of the identified PoP is needed. The following section critically assesses the organization using the former organizational change readiness findings within a diagnostic framework to determine the gaps between the current and the desired organizational states.

### Diagnosis and Analysis of Needed Changes Using the Congruence Model

This analysis provides insights into gaps and also furthers understanding of the dynamics within the organization. The Congruence Model (Nadler & Tushman, 1980), “balances the complexity needed for organizational analysis, and the simplicity needed for action planning and communication” (Cawsey et al., 2016, p. 68). The model assumes that organizations are dynamic, open systems in a large environment where organizational behavior occurs at the individual, group, and system levels (Sabir, 2018). Interactions occur between the individual, group, and system levels (Sabir, 2018). As illustrated in figure 3, the model consists of four elements: a) work, b) people, c) formal organization, including structure and systems, and d) informal organization including culture. Performance and outcomes are tied to the compatibility of these four elements. The higher their compatibility and the more aligned they are with the external factors and organizational strategy, the better the performance and outcomes (Cawsey et al., 2016). According to Nadler and Tushman (1980), an open system is one that communicates with its environment and is made up of a collection of interconnected elements, forming a mechanism that takes input from the environment, transforms it, and produces output.

**Figure 3**

*The Congruence Model*



*Note:* Adapted from Nadler and Tushman (1980)

## ***Inputs***

The need for change is driven by external political, economic, social, and technological factors, which influence the environment surrounding College X. The PEST analysis from Chapter 1 revealed a political reality where DDDM is of critical importance to College X, as the organization readies for a) funding policy reform via the SMA3 and b) navigating the gloomy global economic outlook concerning international enrollments, which colleges and universities across the country have become increasingly dependent on for balancing budgets (Brownlee, 2015). Technological tools such as Tableau and associated content and resources play a key role in this OIP. They will need to be flexible in their configuration to account for adjustments to metrics of interests with the shift to performance-based funding. Recognized within the system as a high-performing organization, College X's overarching strategy continues to focus on a commitment to continuous improvement and planning for fiscal sustainability.

As they cope with the current external climate and attempt to match their resources with the plan to achieve the desired results, organizational leaders must consider their organization's past and consider the effects and constraints, according to Cawsey et al. (2016). The change strategy for this OIP focuses on effective DDDM informed by tools and resources produced by the IR unit. In the short-term, this OIP will aim to develop and implement a plan to support data literacy efforts specific to available tools and resources. In the long-term, this effort is expected to aid desired outcomes pertaining to achievement of enrollment and relevant SMA3 performance targets.

## ***Transformation Process***

The Congruence Model places the greatest emphasis on the transformation process consisting of work, structure, culture, and people and often illuminates the gap areas, as per the analysis.

**Work.** This component of the model concerns the types of skills and knowledge demands the work involves and the constraints on performance demands inherent in the work,



considering the change strategy (Nadler & Tushman, 1980). In the beginning, the SEM governance structure at College X included a formal Data Committee. The committee had three primary functions: 1) to provide data to other SEM committees and working groups in a format that was user-appropriate, 2) to review and evaluate requests for data, and 3) to guide data-related priorities and working groups. The Director, Institutional Planning and Analysis acted as a co-chair, while departmental staff were embedded across the working groups to support the work alongside colleagues from academic, administrative, and relevant service areas. A number of tools and resources, managed by the department, have emerged from the work of the SEM structure and Data Committee. Since the committee dissolved, the remaining committees were tasked with informing future data needs, and the responsibility of meeting their data needs has largely become the responsibility of Institutional Planning and Analysis.

The assessment of organizational change readiness from Chapter 1 suggests that the organization is in the position to undertake the change toward enhancing the capacity for DDDM within the SEM governance structure. During the awakening and mobilizing stages, emphasis will be placed on making sense of the vision for change from the current to the desired state, by involving other individual and group stakeholders in the process (Cawsey et al., 2016). In the context of the PoP, direction and endorsement will be sought from the SEM team. Having the SEM Team as change champions will be of significant value for the proposed change, given their positional power and authority to set the direction with respect to enrollment planning and SMA3 priorities.

To make sense of the change, the existing SEM governance structure will be leveraged. Academic, administrative, and relevant service leadership will be consulted and invited to participate in the proposed change. Cawsey et al. (2016) explain that “approval and acceptance are generally enhanced when people are involved in the discussions and feel that they have been heard” (p. 169). The acceleration stage will involve development and implementation of a detailed plan for leading change. Learnings from the awakening and mobilization stages will

also be considered. Thinking First Strategy, by Mintzberg and Westley (2001), will provide guidance on the establishment of approaches sensitive to overreliance on a one-size-fits-all solution.

**Structure.** Structure represents formal organizational arrangements consisting of structures, processes, and methods in place to get individuals to perform their work (Nadler & Tushman, 1980). The structure in relation to this PoP concerns existing organizational design and, more specifically, groupings of functions and governance bodies within the SEM structure itself (Nadler & Tushman, 1980). The SEM Data Committee and four of its working groups were in operation for about two years (see Appendix B). The SEM governance model lost the momentum that insights into data produced in the early days of SEM at College X. As the work of the Data Committee and its working groups has concluded, the remaining SEM committees are driving the identification and communication of their data needs. The IR unit within the Institutional Planning and Analysis department, along with other data holders within the organization, continue to provide support through provision of data; however, this approach alone is not proving sufficient to ignite the buy-in and momentum SEM committees require to drive their strategic work forward. This could be attributed to the limited capacity within the SEM structure to engage with data in ways that the former structure allowed.

Higher education has become an increasingly complex environment, with complicated, web-like governance models made up of stakeholder groups with often competing interests. Competing values make leadership more difficult and, to be effective, leaders need to find a balance (Yukl & Mahsud, 2010). Integrated models are known for their inclusive nature and ability to drive change by enabling people to understand higher level institutional priorities (Whitchurch & Gordon, 2013). Unfortunately, in the context of College X, an integrated governance approach has the potential to contribute to the spread of the status quo mentality. Koenig (2012) describes the status quo as a tendency for “people not to want to change things” (p. 72). My observation of College X is that the complexity of its governance approach, coupled

with changing government priorities and the political climate has the potential to perpetuate the status quo. For these reasons, during the awakening and mobilizing stages, emphasis will be placed on clarifying the need for change and developing the vision for change. These efforts need to be driven by the SEM Team, with the goal of readying the SEM governance structure for the proposed change.

**Culture.** Culture represents informal organization consisting of emerging arrangements such as structures, processes, and relationships (Nadler & Tushman, 1980). Northouse (2018) explains culture as “learned beliefs, values, rules, norms, symbols, and traditions that are common to a group of people” (p. 428). He explains that Anglo-cultures are seen as high in performance orientation and low in in-group collectivism. The restructuring of PSIs over the last four decades has undermined collegiality and promoted hierarchy and managerial control in the name of efficiency in public funds use (Busch, 2017). In her discussions about the movement of PSIs toward a managerial culture, Sporn (2007) is thoughtful about describing the increasingly significant role managerial professionals play in institutional performance. Manning (2018) describes how colleges and universities are evolving, changing, and beginning to look like one another. She notes that this change is influenced by efforts to increase efficiency, reduce uncertainty, achieve institutional goals, and raise their status through actors’ identity-based, cultural, and formed by habit actions and choices. At the foundation of the College X Strategic Plan is the commitment to be a twenty-first century organization focused on continuous improvement, financial sustainability, and strategic investment.

Kotter (2012) engages in a critical examination of differences between twentieth- and twenty-first century organizations, considering their structures, systems, and cultures. According to Kotter’s analysis, being a twenty-first century organization involves moving away from bureaucratic organizational structures managed by leadership using data from a few performance information systems toward those led by management and managed by employees who have access to and receive training and support with performance data from many

performance information systems. The most notable differences lie between the cultures of the two; while twentieth century organizations tend to be centralized, inward focused, risk averse, and slow to make decisions, twenty-first century organizations are externally focused and strive to be empowering, more risk tolerant, and quicker at making decisions.

College X demonstrates many of the characteristics of managerial culture described here. Efforts to change this are evident in the establishment of cross-functional collaborative governance structures like SEM. Changing organizational culture, in the context of this OIP, would mean impacting organizational level data literacy and DDDM, which involves second-order change. The institutionalization stage of the Change Path Model would concern this type of change. However, institutionalization will not be the focus of this OIP. Enhancement of organizational level DDDM and data literacy would be an aspirational long-term goal for this change leader.

**People.** Despite the efforts by Institutional Planning and Analysis, and its IR unit, to be proactive about engaging the stakeholders with data tools and resources, constraints like competing priorities and limited capacity have contributed to their underutilization. Kotter (2012) claims that “without sufficient empowerment, critical information about quality sits unused in workers’ minds and energy to implement changes lies dormant” (p. 166). By not having a governing body in place tasked with SEM-related DDDM or an organizational data literacy strategy, it is unclear how well College X is prepared to face the complex external and internal environment it is finding itself in due to the Covid-19 pandemic and the shift to performance-based funding. Therefore, by not delegating more effectively, College X and the department could be contributing to the pro-status quo bias.

Engaging people in the change process is critical. As Kotter (2012) states, “the hearts and minds of all members of the workforce are needed to cope with the fast-shifting realities of the business climate” (p. 166). Trust, supported by positive relationships and effective communication, has been shown to have the potential to enable successful governance within

large, complex system and institution networks (Koenig, 2012). For this reason, the awakening and mobilization stages would focus on addressing the *what's in it for me/us* issue while also bolstering stakeholder confidence and trust that the proposed change is both needed and the right change (Cawsey et al., 2016). In addition, the mobilization stage would need to address the gap between what change leaders know and what others know. Cawsey et al. (2016) caution that “as uncertainty increases, the amount of information that needs to be processed between the decision-makers during the transformation process increases” (p. 155). In line with this, they note that there is often a gap between what change leaders know because of their exploration of the problem and what others in the organization know. Understanding individual and group attitudes toward change could provide insight into this gap. Therefore, it is important to understand individual and group attitudes toward change in relation to their placement on the change adoption continuum.

The change adoption continuum placement will inform effective strategies, based on stakeholder placement, and monitor their progress along the continuum, from knowledge of the issues to involvement in the change to desiring action, and finally to taking action relevant to the change. To support group and individual stakeholders effectively, this writer as a leader will need to be flexible and adaptive to group and individual stakeholder needs. Recognizing that change is not linear, change leaders must be able to learn and adjust their understanding of the situation and what may be required as they go (Nadler & Tushman, 1980). For this reason, stakeholder reactions and engagement will be monitored and leadership approaches adjusted accordingly.

### ***Outputs***

Outputs are “what the organization produces, how it performs, and how effective it is” (Nadler & Tushman, 1980). Three factors need to be considered when evaluating organizational performance: goal attainment, resource utilization and adaptability. According to Nadler and Tushman (1980), “for a system to survive it must maintain a favorable balance of input or

output transactions with the environment or it will run down” (p. 38). The consequences of not adapting are seen when once successful organizations do not respond to changes in the environment. In the context of the identified PoP, organization level outputs include enhancements to existing tools and resources to support SEM-related decision-making toward achievement of desired enrollments and performance on the SMA3 metrics. Individual and group level outputs pertain to enhancement in skills and abilities needed for effective DDDM, as well as empowerment for bottom-up influence. Therefore, it is key for College X to balance inputs and outputs as it aims to move from the current to the desired state.

The organization, according to Nadler and Tushman (1980), is viewed as a system or transformation mechanism that takes inputs and transforms them into outputs. The critical dynamic is the fit or congruence among the components. Congruence, a measure of how well pairs of components fit together, is used to explore fit across all combinations of the four components in the College X organizational sense. Nadler (1981) explains that organizational change is successfully managed when an organization is successfully moved from the current to the desired state, the desired state works as intended, and the move is accomplished without unexpected costs to the organization or the people doing the work. With respect to the components of the organizational model, Nadler identifies the three most common problems as 1) the power problem related to organizational culture, 2) the control problem related to organizational structure, and 3) the resistance problem related to people. In the context of the PoP, this OIP anticipates the power problem. Power relations, aside from environments they are observed in, are influenced by mechanisms and tools stakeholder groups use to acquire power (Botas & Huisman, 2012). Consequently, ways of dealing with power dynamics would need to be considered as the solutions of the identified PoP are explored.

In moving the organization from the current state to the desired state, this OIP focuses on the awakening, mobilization, and acceleration stages of the Change Path Model (Cawsey et al., 2016). They describe five ways of stimulating awareness of a need for change. Among them

are, identifying shared goals and working out ways to achieve them and using data and information to raise awareness of the need for change. More specifically, they suggest focusing on “the risks of not taking action ... [instead of] what might be lost” (Cawsey et al., 2016, p. 119). Stakeholders could create change momentum by considering their long-term interests and higher-order priorities, which can be a powerful motivator for engagement and mobilization. During the acceleration stage, the leader would need to keep an eye on whether the planned change is being carried out correctly. Measurement and control systems integrated into change programs, according to Cawsey et al. (2016), can explain anticipated results, improve transparency, and provide change leaders with useful resources. They call for change leaders to employ these tools throughout the change process to help a) clarify expectations, b) assess progress and adjust as needed, c) assess the extent to which change has been institutionalized, d) assess achievements, and e) set stages for future change initiatives.

### **Critical Organizational Analysis Summary**

Following is the organizational analysis of combined organizational context and challenges with respect to DDDM within the SEM governance structure. This is followed by diagnoses and analyses of needed changes using the Change Path Model (Cawsey et al., 2016) along with the Congruence Model (Nadler & Tushman, 1980). The insights demonstrate the need to consider individual, group, and organization level solutions. Furthermore, analyses of the relationships between the elements revealed that changes are needed between the following combinations of elements:

First, Structure and People need attention to ensure that people can work effectively together. Second, Work and Structure would benefit from better alignment in terms of how organizational SEM structure is informing organizational data and information needs and utilizing available tools and resources in DDDM. Third, Structure and Culture, characterized by distributed structure and managerial and collegial cultures, need to be aligned to ensure they complement each other rather than competing.

The proposed solutions that follow assume that there is flexibility to how the SMA3 priorities will be implemented and operationalized at College X. Having the new accountability framework grounded in organizational practices will be vital (Shin, 2010). Nevertheless, organizational leadership needs to be mindful of direction, vision, and goals that exacerbate strategies and initiatives aimed at achieving pre-pandemic enrollments and SMA3 targets. This can be achieved through the development of blending and compromising solutions at the practical level that aim to balance the conflict between managerial and professional logics (Lepori, 2016). The proposed solutions will engage the SEM structure to effectively distribute accountability for effective DDDM to key individual and group stakeholders.

### **Possible Solutions to Address the Problem of Practice**

Recognizing that DDDM is a developing field in the education context, existing research and literature is limited (Mandinach, 2012). Nevertheless, several theoretical and conceptual frameworks for DDDM have emerged as the field continues to grow and evolve (Cech et al., 2018; Ikemoto & Marsh, 2007; Mandinach et al., 2008). These frameworks aim to enable better integration of data into decision-making processes, which has the potential to lead to positive organizational and system outcomes. Worth pointing out is that most of these frameworks were developed for and informed by secondary and primary education leaders. As far as I am aware, there is no framework developed specifically for the Anglo higher education context.

As Ontario PSIs manage the impacts of the Covid-19 pandemic and ready themselves for the activation of SMA3, the ability of leaders to effectively use data to inform decisions will be important for the success of their organizations. If leaders are ineffective in their use of data, available data tools and resources will not lead to effective DDDM. This OIP proposes adapting an existing framework to the contextual realities of College X in order to support enhancement of available tools and resources and building capacity for DDDM. Several viable solutions are discussed in the following section and examined for feasibility, consequences, benefits, and resources needed for implementation. The section concludes with a discussion of ethical



considerations and a rationale of support for a single solution, the one most appropriate given the realities of this leader and College X.

### **Solution A: Maintaining the Status Quo**

Sustaining the current state is the solution that likely requires the least resources and effort. Senior and mid-level academic, administrative and services leaders have access to Tableau Server (TS) and available Tableau Content (TC) and resources and are represented across the SEM governance structure. This approach allows all areas of the college to have a representative on each committee, ensuring their voices are heard and their interests represented. The aim of this approach is to inform, develop, and engage in pan-institutional initiatives that support strategic priorities, goals, and objectives. The SEM governance structure has served as a cross-functional venue for collaboration between academic, administrative, and services areas for years, aiding in College X's distributed leadership efforts.

### ***Resources***

As previously discussed in the Organizational Critical Analyses section, College X maintains its commitment to DDDM. Through the SEM governance structure, the senior leadership continues to call for the increased use of data to inform decision-making and resource allocation. However, competing internal and external priorities, as well as limited stakeholder capacity, are hindering effective engagement with available TS content and resources. The SEM operating committees meet once a month, with many academic, administrative, and services leaders attending two meetings or even all three. This is in addition to operational and strategic committees outside the SEM structure. These committees can consume significant resources and effort. On the other hand, the IR team has gone through reorganization and staffing changes, resulting in growing human and technological capacity to support effective organizational DDDM.

### ***Benefits and Consequences***

The SEM structure is intended to serve as a platform for data-driven discussions of proactive pan-institutional strategies and initiatives aimed to support organizational priorities and respond to changing environmental and government priorities. However, due to operational pressures and priorities, the committees often dedicate significant efforts to more reactive types of work. This takes away from a time needed for proactive work of a pan-institutional nature, which has far more potential to impact organizational performance and outcomes. The IR unit invests effort to help guide and support both reactive and proactive work with the use of available data. However, between operational and organizational commitments, members of these committees can be overtasked at times. This leaves them with limited capacity to take on additional proactive work and responsibilities. Despite the best intentions, the gap between intention and behavior is apparent.

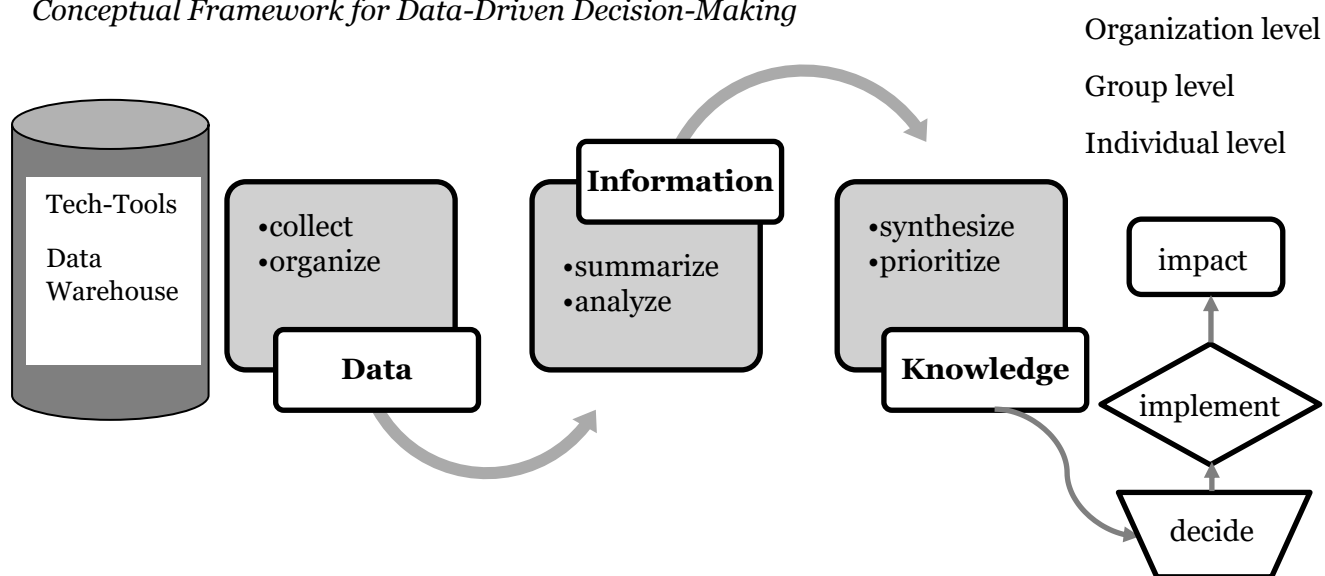
### **Capacity Building Solutions**

The following two solutions rely on existing governance structures to share accountability for informing strategy and work toward effective DDDM across individual and group stakeholders. This PoP has both a technological and an adaptive component. This means that while problems are often well-defined, answers are not always easy (Busch, 2017). These solutions will use an adapted conceptual framework developed by Mandinach and colleagues (2008, 2012) layered with concepts from the Data Skills Framework (Open Data Institute, 2020) and Tableau Blueprint (Tableau, n.d.) to inform the chosen solution and the corresponding two goals. Despite being based on research on practitioners and a cognitive analysis of the results of that research, the framework “has the advantage of drilling down to and outlining the cognitive skills that are hypothesized to be involved in DDDM” (Mandinach, 2012, p. 77). Data can be used in summative ways -- to determine whether things are ‘working’ -- and in formative ways -- to inform how things can be improved. Mandinach (2012) explains that “data are seen to exist in a raw state without meaning; they are just numbers. Information is

data given meaning within a particular context. Knowledge is a collection of information deemed useful to guide action” (p. 77). Therefore, the responsibility for an effective solution will be shared between a leader, who can act as a resource and provide support, and others who will need to change and adapt. Figure 4 depicts key components of the framework, grounded in the principle that data can be transformed into information and ultimately knowledge.

**Figure 4**

*Conceptual Framework for Data-Driven Decision-Making*



*Note:* Adapted from Mandinach (2012)

The paradigm shift in how data is to be used is emerging. Data is no longer solely about accountability; they are increasingly being used to inform continuous improvement. Mandinach (2012) identifies a lack of human capacity and an operationalization for data literacy as one of the main challenges to data use. Spillane (2012) perceives organizational and social structures to be viewed both as a medium and an outcome of data use in practice. This has direct implications for practice and higher education leaders. IR leaders and professionals are encouraged to keep their communities of users front of mind as the institutional research skills needed by higher education leaders evolve. The main inquiries for the proposed solutions relate to enhancing, with input from cross-functional individual and group stakeholders, tools and resources available to support SEM-related DDDM and “offering interactive, in-person or online training

resources for the institution to understand data for decision-making” (Johnson & Simon, 2018, p. 18). Three solutions focused on TS content and resources enhancements and capacity building were considered, informed by the conceptual framework developed by Mandinach and colleagues (2008, 2012) and supported with concepts from the Data Skills Framework (Open Data Institute, 2020) and Tableau Blueprint (Tableau, n.d.), involving organizational, group and individual approaches. The selection of the preferred solution considered human, time, financial, and technological resources as well as associate benefits and consequences. While broader organizational level implementation would be of merit, it is considered to involve second-order change, require significant resources, and involve work outside of the scope of this OIP. Therefore, organizational level capacity building change, while important, will not be considered in this OIP. The two capacity building solutions that follow consider implementation of the adapted DDDM framework at the individual and group levels.

### **Solution B: Individual-Level Focused Capacity Building Strategy**

Existing research and literature points to a gap in data literacy skills amongst senior leaders (Knapp et al., 2006; Mandinach, 2012; Mandinach & Grummer, 2013; Mathies, 2018; Shen & Cooley, 2008). Therefore, this individual-focused, capacity building solution is focused on enhancing leadership engagement with and understanding of available data tools and resources. Monaghan (2017) surveyed 220 senior leaders from 15 community colleges to determine their views on their institution's data reporting processes and the culture and practice related to institutional conversations about data, decision making, and student success. The study found significant differences between how decentralized organizations operate in terms of data communication and institutional culture when using data to inform decisions. A key finding was that

decentralized organizations, where information is shared, felt as if they had a better understanding of how data was used across the institution, and they felt as if their organization was putting resources where needed behind the use of data when making

decisions. (Monaghan, 2017, p. 61)

Solution B proposes applying the adapted DDDM framework to focus on senior leadership, in an effort to enhance DDDM skills and abilities and ultimately improve organizational performance and outcomes.

The proposed model invites Early Adopters and Early Majority from the senior leadership team to participate in a one-on-one workshop series developed and facilitated by the IR unit. The workshop series would combine interactive one-on-one training components, staying mindful of individual readiness for change and change adoption continuum placement (Cawsey et al., 2016; Rogers, 1962). The content would focus on exploration of SMA3 metrics including performance targets and corresponding TS content and resources. Among the most important would be dashboards with projected organizational performance and an overview of the college's projection model, and a corresponding tool with scenario building capacities. Additional IR developed, dynamic tools and supporting resources would also be considered for inclusion. This highly customizable workshop series is a solid solution to enhancing DDDM across the senior leadership.

### ***Resources***

As discussed in the Organizational Critical Analyses section, senior leadership is committed to DDDM. In the context of the identified PoP and this OIP, members of the senior leadership from academic, administrative, and relevant service areas can access content and resources available via TS. Since the senior leaders have access to the TS site, this solution has minimal technological implications. Time constraints and capacity to engage with TS content pose the greatest challenge for implementation.

Human resources and the time commitment required of the IR team would be significant. This solution would require a detailed plan, including proposed content for the one-on-one training sessions, before the solution could be endorsed. Additionally, this writer and the IR team would need to facilitate the workshop series. From the perspective of participants 12

weeks would be required to complete the series. Despite significant human and time resource implications, the IR team has grown and begun developing internal capacity to lead this type of work. However, further consideration would need to be given to other logistics, including but not limited to scheduling, infrastructure to store and access the workshop series materials, and resources to engage subject-matter experts (SMEs) from relevant functional areas.

### ***Benefits and Consequences***

The most significant benefit of this solution would be its potential impact on the senior leadership team. The senior leadership would be proficient with institutional data assets and effective DDDM to support direction and vision setting related to future strategic priorities. While these benefits would be of significance for proactively readying College X for environmental pressures during and after the Covid-19 pandemic and the activation of SMA3, the feasibility of this solution being implemented in a manner that would move College X to the desired state is uncertain. This OIP anticipates challenges to the implementation of this solution, beyond the stakeholder power-over change initiator and facilitator, to be rate of uptake and completion within the set time period. Moreover, these challenges have the potential to not only jeopardize the proposed change implementation but also to prolong the status quo.

### **Solution C: Group-Level Focused Capacity Building Strategy**

Given the organizational context and already stretched resources, reactivating the SEM Data Committee would not be advisable at the moment. When it comes to serving as a powerful guiding coalition, Kotter (2012) explains that weak committees are not effective in occupying this role. Since the committee option is not reasonable given the organizational realities, the proposed solution involves the establishment of a guiding coalition, comprised of representatives from academic, administrative, and services portfolios. Along with the SEM Team and TS users, this coalition would inform enhancements to TS content and resources, development and implementation of a Data Fellow program, and other data engagement and

training opportunities. These opportunities would build capacity for DDDM within the SEM structure, in support of the identified strategic and SMA3 priorities.

The proposed model would enlist Early Adopters and Early Majority from the SEM governance structure, ensuring representative academic, administrative, and relevant services membership. The program would take on a cohort model approach. Over the course of 12 weeks, the work would involve an intensive examination of TS content and resources available. The placement of stakeholders in the program would be based on their readiness for change. Approaches to supporting and developing their DDDM skills and abilities would be mindful of individual readiness assessment and change continuum placement (Cawsey et al., 2016; Rogers 1962). The program would combine interactive group and online training components. These components would be geared toward building skills and abilities to access data, convert data to information, and convert information to knowledge, in the effort to build group capacity for effective SEM-related DDDM. Upon completion of the program, stakeholders would not only bring their DDDM skills and abilities back to their respective areas but also to their SEM committee(s). Similar team-based communities of practice, distributed across organizational initiatives, have been successfully initiated at several PSIs in the United States. Therefore, this is a sound solution to address the identified PoP.

### ***Resources***

This solution would have minor resource implications for the stakeholders who would be part of the fellow program. Most members of the SEM governance structure from academic, administrative, and relevant service areas already have access to the TS site. Therefore, this solution would have minimal technological implications. Informing enhancements of TS content and resources is expected to require cyclical involvement from TS users and the guiding coalition via established two-way communication mechanisms, for example feedback forms and one-on-one and group consultations. Time constraints and individual capacity to engage with data and partake in the process present greater challenges for implementation. Human

resources and time commitment on behalf of the IR team would also be significant. Like the individual-focused solution, the group-focused solution would require a detailed plan along with proposed program content before the solution could be endorsed. In addition, consultations with colleagues, SMEs, the Centre for Teaching and Learning, Organizational Effectiveness, and Human Resources would be required to ensure best practices are used to inform a program development approach. Ideally, the cohort would complete the pilot program within 12 weeks. Similarly, enhancements to TS content and resources would need to be sequenced with the Data Fellow pilot program's development and implementation. Although there are significant human and time resource implications, the organizational capacity to deliver this solution is already in place.

### ***Benefits and Consequences***

The model would be beneficial to the SEM governance structure as well as several other functional areas at College X. Kezar (2018) argues for the importance of forming groups or teams to engage with data in the context of organizational learning. However, she cautions about expectations that a group or team alone is enough, highlighting the need for careful selection, orientation, and socialization of members. This will encourage an organizational environment that develops trust and encourages openness and personal interactions. Austin and Jones (2016) explain the importance of process-based trust through positive interactions between stakeholders. Trust, supported by positive relationships and effective communications, is shown to enable successful governance within large, complex system and institutional networks (Koenig, 2012). Building stronger relationships within the SEM governance structure through a DDDM capacity building program could enhance overall experience and outcomes of the SEM and related planning processes.

### **Preferred Solution: Group-Level Capacity Building Strategy**

Considering feasibility, consequences, benefits, and resources needed for implementation of the three previously discussed solutions, this OIP intends to move forward



with the group-focused capacity building solution. Given the external pressures and SMA3 implications, maintaining the status quo is not a viable option. Without enhancing organizational data literacy, College X risks entering a period of anticipated change underprepared to adequately manage the scope of changes needed to maintain its system positionality. While individual-focused capacity building solution has the potential to lead to enhancements in DDDM among the senior leadership, it requires considerable human resources and time from the IR unit. Given the lack of certainty that this solution would be implemented in a timely matter, this solution is not practical. Another reason the senior leadership-focused solution is inadequate is the gap it leaves in the capacity of the broader SEM governance structure. Therefore, group-focused capacity building solutions are the most appropriate, given the organizational context and the nature of change.

Koenig (2012) notes that analysts can have a significant impact on the value of an organization because of their influence on decision-makers. “Positional leaders cannot be everywhere to make the required important decisions, nor do they often understand the technical work currently being performed by individuals at other levels of the organization and with particular technical or functional skills” (Kezar, 2012, p. 731). Empowering Early Adopters and Early Majority within the SEM governance structure to play a leadership role is important for organizational functioning and success. My research revealed that similar programs have been established and successfully implemented at some PSIs in the United States.

### **Plan, Do, Check, Act (PDCA) Cycle and Group-Level Capacity Building Strategy**

Frameworks discussed by Langley et al. (2009) offer researched approaches to successfully implement organizational change and ultimately bring about desired change. Despite appearing simple, reflecting on previous approaches to individual and group change and improvement at this writer’s organization, several opportunities for supporting the success of this change stand out. Since there is no standardized and broadly communicated framework for

improvement at College X, the five principles of improvement identified in the Model for Improvement framework like the PDCA cycle will be employed in this OIP.

Given the uncertainty and complexity of the environment in which College X and its IR unit operate, it is of the utmost importance for this OIP to ensure alignment between people and processes toward a common purpose. Langley et al. (2009) remind us that organizations are made up of departments, people, equipment, facilities, and functions, and suggest that, “if each part of a system, considered separately, decides to operate as efficiently as possible, then the system as a whole will not operate to maximum effectiveness” (p. 77). The human side of change discussion has been particularly insightful in terms of the guidance it offered for integrating changes in the social system. For College X, it will be essential to attract people to change through building commitment. This will be achieved through involvement in decision-making and ensuring understanding of the benefits of change to both the organization and themselves (Langley et al., 2009). In short, frameworks are helpful but integration of changes within the social system is critical.

Effective change implementation requires an understanding of the tools that allow or constrain activities at the organizational and practical levels. This OIP will use the PDCA cycle to develop, test, implement, and spread improvements that result in progress, to track the process, and to constrain challenges. This framework is useful because it can point out when the solution is not working as intended. This is essential for change leaders, who must identify adjustments that need to be made or determine whether the solution should be terminated.

### **Leadership Ethics and Organizational Change**

In the context of leadership, ethics concerns “what leaders do and who leaders are” including the nature of their behavior, virtue, choices they make, and how they respond in each situation (Northouse, 2018, p. 330). Given that the dominant theoretical paradigm at my institution is functionalist, it is not surprising that performance is at the core of this organizational change. According to Morgan (1980), the functionalist paradigm assumes that

society has a concrete, real existence and a systematic character to create an ordered and regulated environment. In the college system, this translates to meeting public goals while remaining financially sustainable in an environment that is sensitive to changing government policy and priorities. Governance structures and processes need to rapidly respond to change while remaining attentive to institutional interests and ensuring that appropriate consultations and considerations are conducted (Whitchurch & Gordon, 2013). Therefore, the first ethical consideration relates to whose interests are served by the proposed change.

In discussions about whose interests are being served when new changes are introduced, Kezar (2018) claims that “students’ interests should be the ultimate interest served through any change initiative because they are the primary beneficiaries and main focus of educational institutions” (p. 29). Student-centric change initiatives that also serve the interests of managers need to be balanced with the impact on other organizational stakeholders. Kezar (2018) argues that “change agents need to be vigilant about identifying ethical situations so they can make choices that support the greater good” (p. 23). When discussing what moral educational leadership exemplifies, Starratt (2004) suggests that many educational leaders lack preparation for the moral challenges with which their schools are confronted. Focusing on the locus of responsibilities, Starratt (2004) discusses “virtue ethics” and the variety of stakeholders educational leaders are responsible to, including students. Starratt (2004) emphasizes responsibility to students as learners, noting that the “primary justification for all educational resource allocation should be its contribution to the learning of all students” (p. 53). In line with this argument, College X needs to be mindful of learners by ensuring ethical decision-making. For building organizational ethical capacity, Kezar (2018) identifies the following five strategies:

1. stakeholder participation and input,
2. broad information sharing,
3. disclosure of direction and vision, trust, and open communication,
4. acknowledgment of differing values and interests, and

5. co-creation through ongoing dialogue, transformational not charismatic leadership, and organizational justice.

These ethically sound approaches to putting the desired solution into action will be consistent with the organization's mission, vision, and values.

The second ethical consideration relates to conflict that may arise due to competing managerial and professional logics. The definition of leadership “as a process whereby an individual influences a group of individuals to achieve a common goal” has ethical implications for change leaders (Northouse, 2018, p. 346). The leaders need to consider their own motivations and those of their followers in order to identify priorities and goals that are aligned. Connecting this back to the chosen solution, this OIP needs to be mindful of the College X’s sensitivity to institutional logics (Manning, 2018). Lepori (2016) argues that organizations can be strategic and selective in their compliance to external pressures. Given the organizational and environmental circumstances, College X may prioritize indicators it chooses to focus on or study areas it chooses to focus enrollment growth on. In terms of the adaptive leadership approach that this OIP would necessitate, conflict that could arise during agent interactions could become the major driver behind adaptive leadership, resulting in new managerial strategies to address the challenges of this PoP (Lichtenstein et al., 2006). The third ethical consideration concerns the role of the IR leader in ensuring ethical data use. IR units and professionals need to be especially mindful of ethics in the context of how data is used to support student success and organizational effectiveness. In addition to ensuring that data, analysis, and information provided for decision-making is “accurate, timely, and relevant, IR leaders have an obligation to facilitate the appropriate use of such data, analysis, and information” (Cubarrubia & Le, 2019, p. 18). This topic is currently receiving considerable attention within the IR community, as the need for data grows and strong DDDM commitments are made. Mandinach et al. (2015) discuss the significance of data literacy concerning how faculty use student data in practice, while Willis

et al. (2016) conduct analyses of different ethical approaches for use and application of student data generated through learning analytics tools.

Using data ethically requires careful consideration of many nuances (Ekowo & Palmer, 2017). IR professionals need to take on a proactive role when it comes to ethical use of data. Cubarrubia and Le (2019) argue that this is because “it is the profession’s moral obligation to do so, but also because IR professionals are best equipped to facilitate the effective use of data in greater support of student success and institutional effectiveness” (p. 21). Some specific strategies for enhancing culture around ethical data use include centralized data collection and use, formal articulation of commitments to the ethical use of data, and capacity building related to ethical data use by stakeholders in support of student success and organizational effectiveness. In their effort to do this work, IR leaders need to be skillful at navigating challenges within their organizational culture and context. As stakeholders become more confident data-driven decision-makers, ongoing discussions and professional development opportunities concerning ethical use of data need to be encouraged.

Ethical leadership theories tend to focus on perceptions of what ethical leadership looks like and how ethical leaders behave (Liu, 2015). When choosing and designing change initiatives and strategies, leaders need to be attentive to pertinent ethical considerations, including how they are perceived by others within an organization. According to Liu (2015), ethical leadership theories assume that “leaders via hierarchical control, rationally enact ethical behaviors, objectively enforce reward and discipline, and willfully shape the ethical behaviour of all organizational members via a linear causal relationship” (p. 346). A social constructivist lens allows for examination of power dynamics involved in the process of sense-making during the change process. What the proposed solution and this change leader must keep in mind are nuances and complexities behind sense making related to data and data use. “What data are noticed, and what they are noticed for, are negotiated in the interactions among the people,” explains Spillane (2012, p. 126). It is less about individuals and more about interactions between

individuals as they use and make sense of data to inform their decision-making. By ensuring that the context for data and its implications is provided in a clear and transparent manner, the change leader will assist in the ethical use of data.

### **Chapter 2 Conclusion**

In summary, Chapter 2 discussed opportunities for distributed and adaptive leadership approaches to engage individual and group stakeholders in problem analysis and in the formation of flexible and collaborative approaches to address the identified PoP. These approaches will allow for effective proactive, first-order DDDM-focused change. The insights generated and opportunities identified using the Congruence Model and the awakening, mobilization, and acceleration stages of the Change Path Model were also presented. Three proposed solutions were examined and the rationale for selecting group-focused change to support effective DDDM was elaborated on. The chapter ended with an examination of the ethical concerns of relevance for the proposed solution.

### **Chapter 3: Implementation, Evaluation, and Communication**

Chapter 3 outlines a detailed implementation plan to address the PoP. The plan lays out the path of the chosen solution and its two goals. The first goal is development and implementation of a group-level capacity building strategy; the second goal is enhancement of TS content and resources. This first-order organizational change is expected to support enhancement of DDDM by key stakeholders and decision-makers. Cawsey and colleagues' Change Path model, along with components from the Kotter's eight-stage change process, helps guide development, implementation, monitoring and evaluation, and finally communication of the organizational change. Chapter 3 begins with a description of the implementation plan and timelines associated with the preferred solution. This is followed by an explanation of how distributed and adaptive leadership approaches will be used to lead the change initiative. A detailed monitoring and evaluation plan, and a communication plan are also provided to support implementation of the change over the 18-month period. The chapter concludes with anticipated challenges and limitations based on the current strategy, leadership approaches to lead the change process, and discussions of opportunities to scale up this change initiative across other college functions.

#### **Change Implementation Plan**

In its Strategic Plan, College X makes strong commitments to supporting an innovative and collaborative culture and continuous improvement and planning for financial sustainability. The planned change aimed to support effective DDDM fits within this organizational mission and vision. The changes to the Ontario college funding-model, intensified by the global pandemic, are further reinforcing the need for the planned change. The need for change and sense of urgency are further signified by external and internal environmental pressures. The focus of this process for planned change is on the following two goals:

1. to build capacity by providing training, education, and engagement opportunities
2. to make TS content a trusted and effective mechanism for DDDM

These two goals will serve as priorities to address the identified PoP and achieve the desired state. It is important to note that Chapter 3 will identify short-term, medium-term, and long-term goals; however, only the short-term and medium-term goals will be addressed within the identified 18-month period discussed in the implementation plan.

This implementation plan was developed with the aim of enhancing DDDM abilities by ensuring that the existing IR managed tools and resources are meeting the evolving needs of stakeholders and that stakeholders are empowered to access, engage with, and use these tools and resources in their decision-making. If successful, this OIP has the potential to lead to positive student, employee, and organizational outcomes. While the work will be executed by the Institutional Planning and Analysis' IR unit, it will involve a collaborative approach to the preferred solution, with involvement from the SEM Team, the guiding coalition, and relevant stakeholders and resources.

The guiding coalition membership will seek to include representatives from academic, administrative, and services portfolios. From the academic portfolio, it would be ideal to have one or two Deans; two Associate Deans; two Associate Directors, Operation; one or two consultants from Program Planning, Development and Renewal; and a management representative from the Centre for Teaching and Learning. From the administrative and services portfolios, it would be ideal to have a Dean, International or management representative from the International Office; Director, IPA; Director, Finance; Deputy Registrar; and management representative, and one leadership and two or three management representatives from relevant areas within the services portfolio. This planned change will involve application of the adapted DDDM framework (Mandinach, 2012) as well as the Data Skills Framework (Open Data Institute, 2020) and Tableau Blueprint (Tableau, n.d.) to inform the work pertaining to the chosen solution and the corresponding two goals. The chosen solution will involve a group-level capacity building strategy and pilot, and enhancements to available tools and resources to ensure that they continue to meet the stakeholder needs and support community building.



## **Goal 1: Build capacity by providing training, education, and engagement opportunities**

This goal aims to build stakeholder capacity by providing training, education, and engagement opportunities for the College X TS user – community, starting with Early Adopters and Early Majority. The OIP identifies two approaches to achieving this goal. The first is development of a capacity building strategy, and the second is implementation of a pilot group capacity building program – the Data Fellows program. Building stakeholder capacity for SEM-related DDDM, in collaboration with relevant campus partners, is integral to achieving financial sustainability. The College X IR unit, with input from the guiding coalition, will lead this work.

The capacity building strategy, which in the long-term aims to support community building and organizational data literacy, will be developed with input from TS users and the guiding coalition, and in consultation with institutional SMEs. This will be done in the effort to improve user ability to engage with and use available TS content and resources. Efforts will also be placed on the development of learning plans and training materials for specific groups of stakeholders and TS users. In the medium-term, the goal will be to implement a pilot capacity building strategy via the Data Fellows program. It is expected that the program will be developed and piloted within an 8-month period or during months 2 through 10 of the OIP process activation.

The pilot will enlist Early Adopters and Early Majority within the SEM governance structure. This 12-week program will take on a cohort model approach, ensuring representative academic and administrative membership. The placement of stakeholders in the program and approaches to supporting and developing their DDDM skills will be informed by individual readiness assessment and change adoption continuum placement (Cawsey et al., 2016; Rogers 1962). If proven successful in achieving its intended goals and outcomes, the program will be used to evolve the TS community building strategy. In the longer-term, this broader strategy will look to engage new cohorts and continue to build advanced capacity of Data Fellows from the

first cohort. Data Fellows from the first cohort will act as champions, helping with building momentum for change and also with direct and indirect efforts for institutionalization of the change. Additional opportunities to engage stakeholders will include lunch n' learn meetings to build new skills, a forum for cross-functional collaboration, and Data Days to celebrate successes.

### ***Additional Support and Resources***

Beyond the human, technological, and time resources identified in Chapter 2, as a leader I anticipate that additional human resources and supports will be needed from internal SMEs. These resources and supports will aid in professional development and learning program design and development. SMEs would include representatives from Human Resources and Organizational Effectiveness (HROE) and the Centre for Teaching and Learning (CTL). The two SMEs from these departments would be engaged in two-way communication and consultation to inform design of the Data Fellows program. These individuals are well positioned to guide this work. Their input will be essential to ensure the training program follows the established best practices.

### **Goal 2: Make TS content a trusted and effective mechanism for DDDM**

This goal aims to establish TS content a trusted and effective mechanism for SEM-related DDDM. The short-term and medium-term priorities associated with this goal are expected to start in month three of the change process and be completed within a 12-month period (month 15). Three approaches to achieving short-term and medium-term priorities associated with this goal have been identified and informed by the Tableau Blueprint methodology for building DDDM capacity.

First, the College X Data Governance Policy will be relied on to inform development and implementation of TS and TC Governance Framework. The aim is to ensure timely access to the right data and content by the right stakeholders, and to support their understanding of roles, responsibilities and accountabilities related to TS content. TS is an institutional data holding;

therefore, formalizing and institutionalizing existing procedures and processes will be important as its user base and its significance for institutional decision-making grows. The work will also involve enhancements to existing onboarding processes, including redesign of training and educational materials, and supporting documentation such as definitions of data and data sources. As data stewards the Associate Director, IR and the IR unit hold immediate responsibility and accountability for this strategy, while the SEM Team and guiding coalition will be consulted and informed. This work is expected to be completed over a 4-month period and just in time for the launch of the Data Fellows program pilot.

Second, stakeholders, including but not limited to the Tableau User Group (TUG) and the guiding coalition, will be engaged in two-way communication to ensure that the available TS content meets the needs of decision-makers and users. The aim of this strategy is to enhance TS content and resources. The tactics will involve 1) a survey of TS users designed to assess their needs and satisfaction with the content, as well as perceptions of their DDDM abilities, 2) consultation with the SEM Team and guiding coalition, 3) a review of survey findings and consultation notes to determine gaps and opportunities for enhancements, and 4) prioritization of enhancements and updates to TS content and resources. In consultations with the guiding coalition, the IR unit will leverage the input generated to prioritize next steps. The change sponsors will be kept informed to make sure the proposed changes align with the broader institutional goals and priorities. This strategy will support the mobilization stage of the planned change process. This writer anticipates that this work will be carried over side-by-side with TS and TC Governance Framework activities, allowing for insights generated from the two-way communication to inform work related to the first objective. It is estimated that this work will be completed by month 6 of the change process.

Third, barriers to accessing, engaging with, and using TC and supporting resources will be identified and addressed. This strategy is intended to increase the number of users of available tools and resources, while reducing ad hoc data and information requests, and

ensuring the interface is user-friendly. There will be several tactics involved in pursuing these objectives. To assure the interface is user-friendly, the IR unit will leverage insights from the TS user survey, baselines of direct and indirect engagement measures, and reviews of best practices. This will help address next steps pertaining to enhancements and updates to TC identified to be priorities for this change. To reduce ad hoc requests, an inventory of tools and resources and types of inquiries they can address will be developed and made available to TS users and other stakeholders. To support access, engagement, and use of TS content, how-to resources will include updated step-by-step guides, fact sheets, and training modules to help with 1) logging in and navigating TS institutional site, 2) interacting with content and features, and 3) understanding available content and data. To consolidate these resources and enable two-way communication, a centralized location for all-things TS and TC will be created in the form of an intranet.

According to Bootazzo (2005), an intranet is an indispensable tool for supporting organizational change efforts. It functions as a repository and a tool for enabling two-way communication. With input from the guiding coalition, the IR unit will aim to address the identified priorities for TC and supporting resources enhancements and updates. The SEM Team and guiding coalition will be kept informed about progress. This strategy will further support the mobilization stage of the change process and aid in the acceleration stage. It is anticipated that this work will be completed during the month 16.

### ***Additional Support and Resources***

In addition to the human, technological, and time resources and supports discussed in Chapter 2, this OIP and leader expect to need a time commitment from the guiding coalition to actively engage in all three stages of this change implementation process. The membership is expected to include several senior leaders, whose participation and guidance will be instrumental for establishing buy-in, maintaining momentum, and guiding and approving refinement of the change process as needed. This is expected to be particularly important when

it comes to supporting TS content and resources in becoming a trusted and effective mechanism for SEM-related DDDM. The reason for this is that the guiding coalition will need to be well-versed and up to date on the progress made to effectively endorse this work throughout all three stages of the change implementation process. The Associate Director, IR, as a change facilitator and implementer, will need to establish a rapport with senior members of the guiding coalition to prevent any risks to change implementation that may be caused by time constraints.

### **The Implementation Plan Steps**

The purpose of this section is to outline the steps in the proposed change implementation process, which are aligned with the leading change framework chosen for this OIP. The section relies on the Change Path Model to frame the approach responsive to organizational and stakeholder readiness for implementing the preferred solution goals and activities.

#### ***Awakening***

In the first step of the process, awakening, the need for change will be articulated. I will look to gain endorsement from the SEM Team first, followed by the Enrollment Planning Group. These stakeholders possess positional power and authority to set the direction with respect to enrollment planning and related SMA3 goals and priorities. What is more, they will be endorsing the vision for change. In this step, strategies for readying the organization for change will also be considered. This will start with the readiness assessment of individuals within the key stakeholder groups intended to be included in the organizational change. Assessing stakeholder readiness to act will provide insights into how to prioritize stakeholder groups and adapt leadership styles and approaches to implementing change. The previous change experience and openness to change dimension discussed in Chapter 2 (pg. 31) will be relied on to help ready stakeholders for the change process. Taking the time to ready stakeholders is expected to better position the planned change initiative for successful implementation. The

awakening stage is expected to last 2-months. This stage will seek to involve the guiding coalition and broader individual and group stakeholders impacted by the change.

### ***Mobilization***

Mobilization, the second step of the change process, includes the important work of making sense of the change. Here, I will look to gather input from individual and group stakeholders on what our group-capacity building solution needs to look like in order to meet the needs and address gaps identified through organizational and stakeholder analyses. In addition, this will also serve as an opportunity to consult on enhancements to the existing TC and supporting resources. To do this, I will leverage the existing SEM governance structure to generate input via surveys and consultations and seek commitment to move ahead with the planned change. Given that the planned change will be coming from Institutional Planning and Analysis, with endorsement from the SEM Team, it is expected to generate the desired levels of participation and engagement from the Early Adopters and Early Majority.

As noted in the organizational analysis in Chapter 2 (pg. 56), there is often a gap between what change leaders know and what others in the organization know. Therefore, this stage will be concerned with mobilizing efforts for the change initiative, including participation and involvement in capacity building training. Information will also be provided regarding ongoing enhancements of TS content, which will continue to meet the needs of stakeholders and their responses to external pressures and internal priorities. This work will continue during the acceleration stage.

### ***Acceleration***

In the third step of the change process implementation, acceleration, the focus will be on planning and implementation for moving from the current to the desired state. Insights generated from the first and second stages will be used to refine the path forward. To support this work, the insights gathered through diagnosis and analysis of needed changes during the critical organizational analyses, using the Congruence Model (Nadler & Tushman, 1980), will be

used to adjust change implementation processes and activities. More specifically, acceleration efforts will rely on monitoring and evaluation activities embedded throughout the change process. These are discussed in the Monitoring and Evaluation section of this chapter and will ensure ongoing compatibility between elements and alignment with the change strategy. Table 1 depicts the timelines associated with the short-term and medium-term objectives of the chosen solution and its two goals.

**Table 1**

*Timelines for the Implementation of Two Main Priorities Using the Change Path Model*

Preferred Solution Goals	The Change Path Model Stages and Duration		
	Awakening	Mobilization	Acceleration
Develop and Implement Capacity Building Strategy – pilot Data Fellows program	0 – 2 months	3 – 5 months	6 – 10 months
Enhance TS content and advance the existing model	0 – 2 months	3 – 10 months	11 – 18 months

*Note.* For more detailed breakdown of the implementation process, please refer to Appendix C.

### **Managing the Transition from the Current to the Desired State**

Transition from the current to the desired state is the core purpose of this OIP. This section will be instrumental in the successful implementation of the preferred solution. This OIP identifies two core transition components and explores potential implementation issues before acknowledging the limitations and challenges of the preferred solution.

### ***Understanding Stakeholder Reactions to Change***

During the change implementation process, change agents need to be attuned to the reactions of the stakeholders involved. The importance of stability as a foundation for growth must be recognized by change agents. Westover (2010) argues that “respect for structural mechanisms and roles that promote stability must be maintained, even while one is trying to alter radically the existing system” (p. 47). Therefore, this change process will aim to maintain existing stability, while introducing change aimed to enable effective DDDM. For example, Early

Adopters and Early Majority will be engaged in a pilot capacity building program using the available TS content and resources, rather than being sequenced with their enhancements and updates. Their reactions to the program will be monitored by tracking attendance, monitoring engagement, conducting observations, and gathering feedback about their experiences with change and the content of the change.

Understanding stakeholder reactions to the collaborative efforts to make TS content a trusted and effective mechanism for DDDM will require a multi-pronged approach. For example, baselines related to direct and indirect engagement with TS content and resources, and a survey of TS users will be used to establish a starting point for understanding the current situation. Stakeholder engagement with the change and TS content and resources will lend insight into how well the change is accepted and how enhancements are resonating with individual and group stakeholders. In the final month of the change process, a survey of stakeholders will be conducted to hear about their perceptions of the change process and outcomes, and to assess readiness for the institutionalization of this change.

### ***Selecting Personnel to Engage and Empower Others***

Given the current HE environment, including complexity of decisions and the pace at which they need to be made, a new decision-making process needs to be guided by a powerful coalition that can act as a team (Kotter, 2012). As Kotter (2012) explains, “only teams with the right composition and sufficient trust among members can be highly effective under these new circumstances” (p. 55). Guiding coalitions, composed of powerful individuals who are informed and committed to change, operate as effective teams that can process more information and implement innovative approaches more quickly. Kotter (1996, 2012) argues that position power, expertise, credibility, and leadership are essential for establishing effective guiding coalitions.

The guiding coalition will need to strike a balance of leaders and managers for the change to be implemented successfully. If leadership representation is insufficient, the approach to change process could become more about controlling change recipients than empowering



them. With support from a functionally and hierarchically diverse guiding coalition, the leader of this planned change anticipates messaging and buy in for the change to proceed as intended and the implementation process to be successful. Therefore, for this OIP to be implemented effectively, a mix of functional and hierarchical leaders and managers from academic, administrative, and services portfolios is important.

Recognizing the composition of the guiding coalition, this group will be instrumental for the success of the change initiative, in addition to the SEM Team. In the awakening stage of the change implementation process, the guiding coalition will support buy in and unified messaging about the need for change. During the mobilization stage, this group will be essential for communicating the change vision and desired state. And finally, during the acceleration stage, this group will support the implementation process by acknowledging and celebrating short-term wins and helping refine the change efforts, to ensure they continue to meet College X needs and priorities. The role of the guiding coalition will be critical to successful implementation of the change process; however, much of the work will be carried out by the IR unit with support from SMEs from relevant administrative and service areas.

### ***Potential Implementation Issues***

This OIP anticipates two potential implementation issues. These are stakeholder involvement and implementation of the change within the set period.

**Stakeholder Involvement.** The degree to which employees embrace participation, according to Benson et al. (2013), is directly linked to the complexities of implementing employee involvement management practices. Moreover, the authors argue that the success of employee involvement practices “depends a great deal on how they are implemented and how the change process is implemented” (p. 238). This will be essential to both the pilot group capacity building solution and the enhancement of the TS content and resources available to support SEM-related DDDM. A sense of urgency underpinning the need for change will be critical to ensure stakeholder involvement.

**Time.** Even if the stakeholder buy-in is strong, the time needed from a range of stakeholders to implement this change is another potential implementation issue. This OIP assumes that SMEs needed to be engaged in the development and implementation of the Data Fellows pilot program will be able to dedicate needed time for consultations during the identified periods. Early and transparent communications will be critical to ensure the set timelines are met or adjusted within an acceptable timeframe without jeopardizing the pilot implementation. The 12-week timeframe required of the program participants could also prove challenging for some stakeholders. The Associate Director, IR and the guiding coalition will be mindful of competing operational and strategic priorities when scheduling program activities.

When it comes to supporting TS content and resources in becoming a trusted and effective mechanism for DDDM, potential implementation issues are expected to relate to the capacity of the IR unit to deliver intended outputs within the scheduled timeframe. Two-way communication to inform refinement of the implementation process will be critical. This potential issue is anticipated due to overlap with the deadline for the final SMA3 adjustments to the metrics weightings. Therefore, this OIP anticipates additional related operational priorities that could coincide with this change and interfere with the timelines identified. This can be addressed by reprioritizing the changes that need to take place and/or resequencing some of the work pertaining to this change.

### ***Acknowledging Limitations and Challenges***

Anticipated limitations and challenges pertaining to human resources and time have already been addressed in the potential implementation issues section; however, the scope of change and changing priorities are expected to pose additional challenges. As with many organizational changes, scope creep could prove to be a challenge for this OIP. To help mitigate associated risks, this organizational change will start with the end in mind. A TS and TC Governance Framework will be developed and implemented before the launch of the Data Fellows pilot program and prior to stakeholder engagement in providing input for

enhancements to TS content and resources. This will help prevent inadequate engagement with and use of tools and resources as the organization readies itself for greater stakeholder engagement.

The Covid-19 pandemic also creates a great deal of uncertainty around this organizational change. While the activation of the SMA3 performance metrics has been postponed to 2022-23, making room for this change to be implemented, the economic impact of the pandemic and the need to diversify revenue streams are of concern to the College X leadership. This has the potential to alter the timeline for the proposed change.

### **Change Process Monitoring and Evaluation**

The aim of this first-order change is to support DDDM in focusing on first order skill set development (Bartunek & Moch, 1987). Now more than ever, PSIs need to engage in thoughtful cross-functional conversations to navigate through the new realities imposed by environmental pressures to change. The IR maintained SEM-related TS content and resources were developed nearly four years ago, when College X's internal and external environments looked considerably different. While ad hoc enhancements and refinements were made over time to address gaps, the broad questions these tools were aimed to address have remained unchanged. Therefore, the chosen solution seeks to engage a broad, cross-functional group of stakeholders in needs assessment related to select TS content and resources, followed by consultations with the members of the guiding coalition. This would be done in an effort to enhance these tools and resources by repositioning them to be proactive to the emerging data and information demands, recognizing current internal and external pressures. Enhancement of the TS content and resources would be followed by the adoption of a group-level capacity building strategy, aimed at supporting effective DDDM. To ensure uptake by the key stakeholders for whom this change initiative is intended, the strategy will need to fit into College X's institutional culture and dominant archetypes (Kezar, 2018). Though this writer, as change leader, may not have the positional power to mandate change, as an Associate Director, IR I do have the knowledge power to influence, implement, and facilitate

the proposed change initiative. This can be done by recommending and gaining endorsement for the preferred solution, implementing change initiatives across and within key stakeholder groups, and building capacity for effective and sustainable DDDM.

This section of the OIP focuses on framing the monitoring and evaluation practices involved in the change process. Monitoring and evaluation are interlinked but are fundamentally distinct activities. While the focus of monitoring is on tracking implementation and progress, including activities and processes, outputs produced, and initial outcomes achieved, the focus of evaluation is on formulating conclusions and recommendations for the future, based on performance (Moen & Norman, 2009). For this reason, the OIP distinguishes between monitoring and evaluation practices and the activities employed for each.

### **Monitoring Plan**

The Monitoring Plan will be developed for internal use to inform ongoing monitoring processes (Markiewicz & Patrick, 2016). In the context of this OIP, those would be activities and outputs, short-term outcomes, reactions and engagement of stakeholders, and any implementation issues experienced along the way. For the redesign and redeployment of the TS content and resources, data and information collected will include measures of direct and indirect engagement with the TS site and content, needs assessments, surveys, and feedback from stakeholders. For the group-capacity building solution development and implementation, data and information collected will include an environmental scan, observations, workshop assessments, and feedback from participants and stakeholders. This information will then be analyzed and synthesized into reports by the IR team and Associate Director IR, with input from the SEM Team and guiding coalition. These periodic reports are intended to provide the change initiative sponsors and guiding coalition with updates on implementation plan progress.

### **Evaluation Plan**

The Evaluation Plan will be developed to inform periodic evaluation processes (Markiewicz & Patrick, 2016). These evaluation processes will involve the use of the results of

monitoring, in combination with other forms of data and information. The goal will be to derive evaluative conclusions about how appropriate, effective, efficient, impactful, and sustainable the change is (Markiewicz & Patrick, 2016). In the long-term, the impact of participation in the Data Fellows program and engagement with the redesigned tools and resources on enhancing DDDM and SMA3 performance metrics will also be examined. A recent publication by Beerkens (2018) exploring the impact of monitoring quality assurance mechanisms on performance metrics found encouraging positive effects. Despite these findings, Beerkens (2018) wonders if positive effects may be stronger in earlier years as they initiate ‘quality culture’ through discussions that were not had in the past. Such discussions can be expected to subside in later years. Thus, it would be of value for this OIP to seek to understand longer-term impacts of this change initiative.

### **Monitoring and Evaluation of Change Implementation Using the PDCA Cycle**

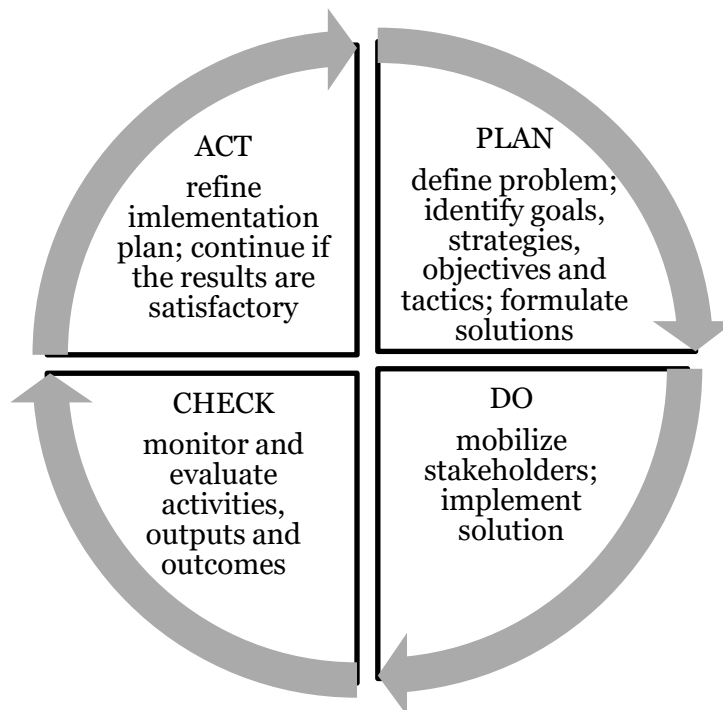
The Implementation Plan will apply the PDCA cycle to monitor and evaluate the proposed organizational change. The PDCA cycle is a method for continuous improvement that emerged from Dr. Edwards Deming’s modifications to the Shewart Cycle (Shewhart, 1939) at a lecture in Japan in 1950 (Kolesar, 1994; Moen & Norman, 2009, 2010). The Deming Wheel then evolved to become the PDCA cycle through the work of several Japanese scholars in 1951 (Imai, 1986; Kolesar, 1994; Moen & Norman, 2009, 2010). The PDCA cycle advanced via application across a range of contexts, and it became recognized as one of the most broadly applied quality improvement methodologies (Moen & Norman, 2009, 2010; Sokovic et al., 2010). As explained by Moen and Norman (2010), the PDCA cycle involves the following four-step process, also highlighted in Figure 5:

1. Plan: define a problem, determine goals and targets, formulate methods, and hypothesize plausible causes and solutions
2. Do: implement a solution and training / education
3. Check: monitor and evaluate the result

4. Act: return to the plan step if the results are unsatisfactory or standardize the solution if the results are satisfactory.

**Figure 5**

*PDCA Cycle Application*



*Note:* Adapted from Moen and Norman (2009, 2010)

Initiating, influencing, and facilitating change, aimed at putting in place structures and resources, then empowering and mobilizing stakeholders to access, engage with, and use those resources toward effective use of data in decision-making, is the main priority for this solution. To address the PoP, a distributed leadership approach will enable the leader to leverage existing governance structures and processes to gain endorsement for the change, while also empowering stakeholders to engage with the change process. On the other hand, an adaptive leadership approach will be relied on to help this writer as a leader establish an empowering platform to implement and facilitate change, while being mindful of organizational and stakeholder readiness. Actively involving change recipients in the diagnostic process can support change readiness and buy-in for organizational change.

The PDCA cycle will play a vital role in the monitoring and evaluation efforts concerning goals, strategies, objectives, and tactics associated with the preferred solution and the corresponding implementation plan. The PDCA cycle, according to Moen and Norman (2009), is useful for designing, testing, implementing, and spreading improvements. Similarly, the PDCA cycle could be useful as a framework for a strategic management and learning process (Pietrzak & Paliszkiwicz, 2015). Embedded in the identified goals associated with the preferred solution, the PDCA cycle will allow the change agent to engage stakeholders throughout the 18-month long organizational change process, in an effort to ensure continuous improvement and achievement of the desired state.

### **Plan**

The planning stage starts with understanding the change needing to take place, along with its expected outputs and outcomes and proposed methods for monitoring and evaluation. The implementation plan aims to empower stakeholders and give them more significance through participation and teaming. Cawsey et al. (2016) outline five methods for raising awareness of the need for change. They include taking time to define common goals and priorities, devising strategies for achieving them, and using data and information to raise awareness of the need for change. With the involvement of change participants in the organizational change processes, the likelihood of change being sustainable is increased (Armenakis & Harris, 2009). Planning will therefore be very important for the guiding coalition, to build the sense of urgency and for formulating and endorsing the vision for change. What is more, engaging key stakeholders in the planning process of the redesign of TS content and resources will be essential to successfully implementing this change initiative.

### **Do**

The doing stage entails putting the solution into action, and also providing adequate training and education. According to Armenakis and Harris (2009), allowing organisational participants to engage in communicating discrepancies, increased their understanding of

discrepancies, and made it more likely that necessary improvements were chosen. It was noted in Chapter 2 that SEM governance structure would play an integral part in supporting the implementation of this change initiative. This approach will require the members of the guiding coalition to understand their roles in endorsing the vision and direction through the awakening and mobilization stages, as well as their roles in monitoring the change initiative. While the College X IR unit will take on a large share of the work and responsibility for this change, its success will depend on the engagement of stakeholders and decision-makers within the SEM-governance structure, TUG, and colleagues in HROE and CTL. Westover (2010) claims that “a critical variable of organizational success is a leader’s ability to stabilize and maintain the setting after the initially enthusiastic phase of new creation has subsided” (p. 47). Therefore, this OIP and, more specifically, the implementation plan need to be sensitive to both engagement and alignment between people and processes throughout the transformation process and toward the achievement of the desired state.

### **Check**

The checking stage focuses on monitoring and evaluating activities, outputs, and outcomes. This stage of the process is of utmost importance for success of this OIP. Reflecting on the Organizational State Analyses from Chapter 2 and insights generated from the application of Nadler and Tushman’s Organizational Congruence Model (1980), used to assess College X’s readiness for change, the role of regular monitoring through ongoing data collection throughout the change process will be critical. The higher the compatibility among work, structure, culture, and people, and the more aligned they are with external factors and organizational strategy, the better the performance (Cawsey et al., 20016). Organizations, note Langley et al. (2009), are made up of departments, people, equipment, facilities, and functions. If each component tries to run as effectively as possible on its own, the whole system will not be as effective as it could be. In the context of this change initiative, it will be integral to attract



stakeholders and decision makers to change by building a commitment via involvement in decision-making and understanding of the benefits of change to themselves and organization.

A range of tools and mechanisms will be embedded and closely monitored throughout the awakening, mobilization, and acceleration stages of the Change Path process and the corresponding activities. According to Cawsey et al. (2016), the risk of several interventions unwittingly misleading change leaders about what is required for a good change is much lower than if they depend on a single indicator. To maintain a watchful eye on the proposed change initiative, direct and indirect engagement logs, surveys, discussion forums and interviews will be used across the tools and resources change process. Similarly, development and implementation of the group-level capacity building solution will involve a comprehensive literature review, a best practices scan, and subject-matter expertise and feedback from colleagues in HROE and CTL. All of these will be of importance, not only for planning but also for implementation aspects of the change initiative.

### **Act**

The acting stage aims to inform refinement of the implementation efforts and decisions on whether to continue with the change, given the results. A balanced scorecard, with short-term and medium-term goals, objectives, and indicators focused on the two change implementation plan priorities will be used to track the change process outputs and outcomes. Regular monitoring efforts will allow for successes and issues related to alignments of various aspects of the implementation plan to be identified through ongoing tracking, feedback, and reflection. Doing this will help keep the momentum going through celebrations of achievement of short-term successes (small wins) as well as refinement of the implementation plan and change processes. When this is done well, leaders can set up their change initiative for success and, rather than resisting, change recipients will view it as an opportunity.

The final stage will involve two phases that recognize the potential effects of this organizational change on the College X enrollment and SMA3 priorities and performance

targets. Phase one will involve assessment, monitoring, and evaluation of the implementation and adoption of the proposed changes by Early Adopters and Early Majority, within the identified 18-month period. In this phase, we can expect to see an increase in utilization of available tools and resources, better preparedness for annual enrollment planning meetings, and enhanced ability for DDDM among early change adopters and early majority. Phase two will be discussed in more detail in the Next Steps and Future Considerations section.

### **Plan to Communicate the Need for Change and Change Process**

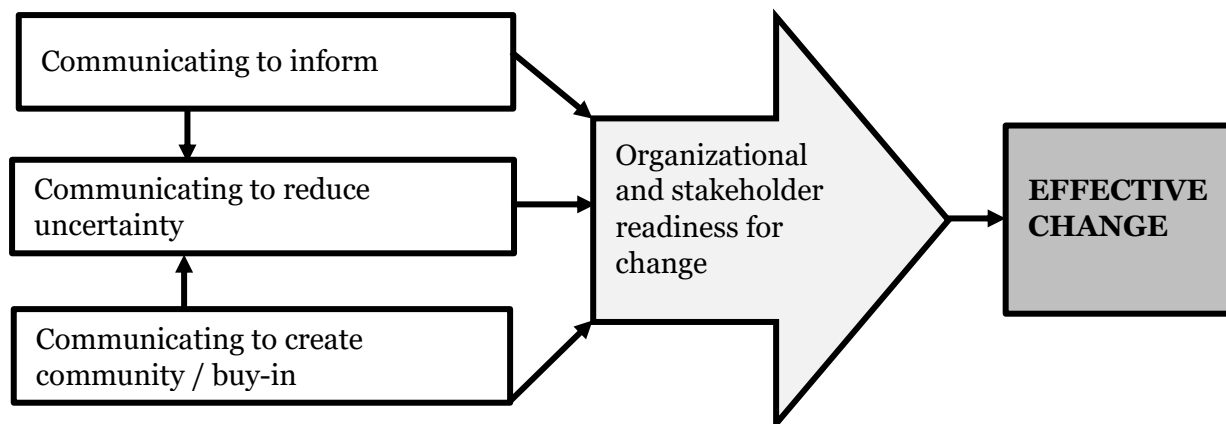
The primary goals of the communication plan are to communicate key messages to stakeholders and to help this writer as a key change influencer successfully implement this change initiative. This will be part of the effort to gain support for piloting a group-level capacity building Data Fellows program that, along with an enhancement of TS content and resources, aims to support effective DDDM at College X within the SEM governance structure. The change initiative is closely aligned with College X strategic priorities regarding it becoming a 21st century institution. Recognizing the hierarchical and functional diversity of stakeholders involved in this change process, communications will need to be tailored but consistent throughout the change process (Klein, 1996). As Klein (1996) explains, a well-planned communication process is key for successful implementation of the change process. To achieve this goal, this OIP relies on the adapted Conceptual Model of Communication during Organizational Change (Elving, 2005), informed by the works of Klein (1996) and Heide (2008, 2018). This conceptual model will serve as both a tool and a process for managing communications related to the organizational change. The following section outlines how communication efforts will be distributed across the change process and stakeholders to help enhance change readiness and successfully implement the change process.

### **Conceptual Model of Communication during Organizational Change**

Numerous scholars speak to the role of communication in organizational change processes and, more specifically, its role in successful change implementation. Putnam and

Pacanowsky (1983) identifies three perspectives on organizational communication: functional, interpretative, and critical. Given the functionalist nature of College X and its reliance on organizational structures and systems to disseminate messages, the perspective most relevant to this OIP is the functionalist perspective. It assumes that the content and meaning of messages is in the message, so it places emphasis on distributing communication messaging across functionally and hierarchically diverse stakeholder groups and individuals. During this organizational change process, communication will be a key tool for informing, generating understanding, and influencing attitude and behavior change (Heide, 2008). According to Beatty (2015), the “why”, “what”, and “how” of the change need to be clear for communication efforts to be effective. Successful leaders set and communicate direction, while also having vision and creating a positive organizational climate (Bryman, 2007).

The Conceptual Communication Model developed by Elving (2005), was identified as appropriate for the organizational context and the approach for implementation of this change. The Elving model has two goals: 1) to prevent resistance to change and 2) to reduce uncertainty through communication. The model stipulates that information about the change, feelings of community, and uncertainty all impact readiness for change (Elving, 2005). Specifically, Elving (2005) argues that uncertainty is reduced by communicating to inform stakeholders and by communicating to create community and ensure buy-in. Together, these communication efforts positively affect organizational and stakeholder readiness for change by building trust and community around the change and successful change implementation. Figure 6 depicts Elving’s Conceptual Communication Model and the direction of relationships between the concepts discussed.

**Figure 6***Conceptual Communication Model*

*Note:* Adapted from Elving (2005)

During the change implementation process, communication efforts should be frequent and delivered by credible sources through various communication platforms and channels. With support from the change sponsors and the guiding coalition, I will employ face-to-face and electronic means to: 1) share a vision for change, 2) tell a story that will help stakeholders envision the move from the current to the desired state, 3) ensure stakeholders see themselves as leading this change aimed to positively impact College X, and 4) help pave the path for others by celebrating successes.

### **Awakening: Communicating to Inform, Build Urgency and Generate Buy-in**

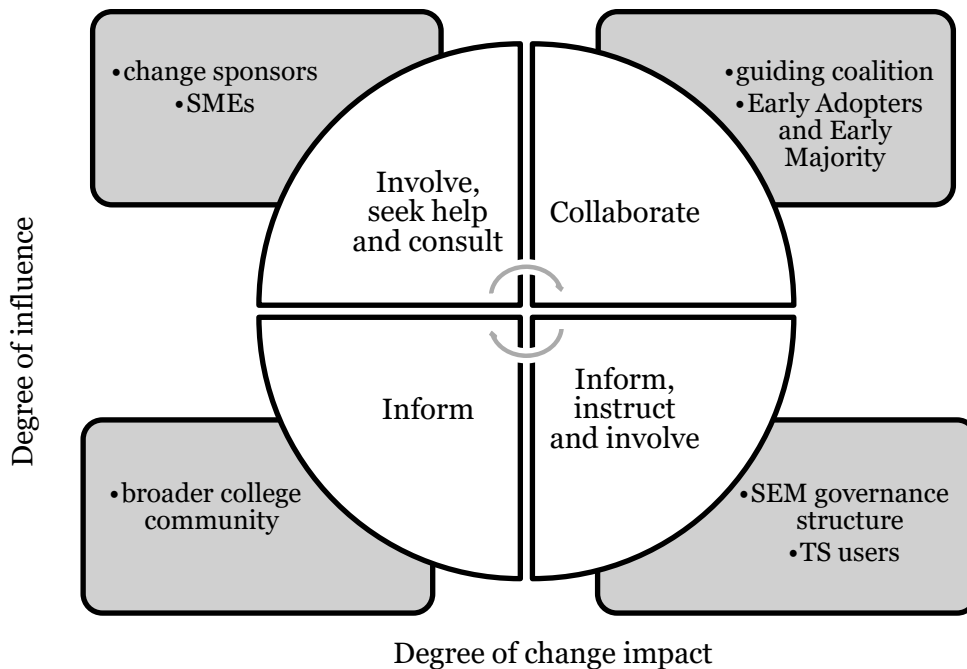
Given my positionality and that of the stakeholders engaged in the implementation of this change, formalized, ongoing, top-down communications will be important in the awakening and mobilization stages of the change process. With endorsement from the change sponsors and reinforcement from the guiding coalition, the need for change and the desired organizational state will be communicated through the SEM governance structure. The Associate Director, IR, in partnership with the change sponsors, will lead presentations. Leadership power that the change sponsors possess will be relied on for a top-down approach to communicate the sense of urgency and gain further buy-in for the need for change. These presentations will aim to increase understanding and implications of the corridor-funding mechanism and SMA3

performance-based funding and targets across the SEM governance structure. The main objectives of these communications concern challenging the status quo, demonstrating the need for change, gaining buy-in, and readying the organization and stakeholders for change.

Recognizing the functional diversity of the SEM structure, the messages will be tailored to the needs and interests of members of each of the committees. Following the face-to-face presentations, email communications from the change sponsors will be sent as a follow-up to restate key messages. Recognizing the hierarchical culture of College X, we will attempt to gain endorsement from positional leaders and leverage existing governance structures to build a sense of urgency and demonstrate the need for change.

### **Mobilization: Communicating to Ready, Inform, and Build Momentum for Change**

Until now, communication efforts focused mostly on the stakeholders who need to endorse the change, and those who need to implement the change. The primary goal was informing stakeholders about the change rationale and urgency. During the mobilization stage, stakeholders implementing the change will be readied and empowered, while the guiding coalition will be informed regarding progress. Klein (1996) argues that during this stage, dealing with uncertainty, focusing on specifics, and reporting on progress through the established organizational structures and hierarchies are key for successful change implementation. With this mind, Figure 7 depicts an application of Beatty's (2015) stakeholder mapping technique based on degree of influence and impact on change. Such mapping is intended to help inform communication efforts during the mobilization stage.

**Figure 7***Stakeholder Mapping by Degree of Influence and Impact*

*Note:* Adapted from Beatty (2015)

Elving (2005) claims that the relationship between communication and the creation of readiness for change is a prerequisite for effective change. Here, it will be critically important for change-related communication to facilitate understanding, participation, and engagement among stakeholders with a high degree of influence and impact. Therefore, the efforts will focus on stakeholders impacted by and impacting the change, including the early adopters and the early majority, as well as the IR unit. The IR unit will play an integral role in this stage of the change process. During the mobilization stage, it will be important for me as a leader to ready these two groups of stakeholders for change and enable timely and transparent two-way communication. I will need to ensure constant and consistent alignment of communications with the vision and direction for the planned change. To successfully support the planned change, these two groups will need to 1) have a shared understanding of the vision and direction for change and 2) see themselves as playing an integral role in the change process.

Most organizational change initiatives fail due to lack of understanding of vision and direction (Kotter, 2008). In addition, resistance to change often originates from differing assessments of the need for change (Cawsey et al., 2016). To prevent this happening, face-to-face and electronic announcements and updates related to progress will be endorsed and reinforced by the guiding coalition members. These communications will target TS users, the SEM governance structure, and stakeholders involved in and impacted by change implementation. To ensure the effectiveness of these communications, redundancy of messaging and the use of varying mediums will be leveraged to ready, inform and build momentum for change.

### **Acceleration: Communicating to Track, Celebrate, and Sustain Momentum for Change**

During the acceleration stage of the change implementation process, the focus will be on tracking the implementation of the Data Fellows pilot program and progress toward making TS content a trusted and effective mechanism for DDDM. In this stage, refinements to either the change itself or the implementation process, informed by insights from monitoring and evaluation efforts, will be communicated to the relevant stakeholders. The Associate Director, IR and the guiding coalition will be responsible for communicating these course adjustments through whatever communication mediums are deemed appropriate. This stage will also involve acknowledgement and celebration of short-term wins related to the Data Fellows pilot program. The pilot cohort graduates will receive formal recognition for completing the program and aiding in effective organizational DDDM efforts. This recognition will include a letter from and signed by the change sponsors. In addition, opportunities to celebrate accomplishments related to TS content enhancements will be included in this stage. Examples could include invitations to profile the work to-date and discuss next steps at a College X community town hall meeting. Finding opportunities to celebrate stakeholders involved in the change process and their accomplishments to date will aid in sustaining momentum for the planned change.

The institutionalization stage of the chosen solution will be discussed in the Next Steps and Future Considerations section. The focus of future efforts will be on strategies to institutionalize change and build an effective DDDM culture at College X, while future-proofing the IR unit so that it can play a key role in this work.

### **Chapter 3 Conclusion**

In summary, Chapter 3 outlined and described an implementation plan for the proposed group-level capacity building strategy and enhancement of the TS content and resources. The Change Path Model (Cawsey et al., 2016) was applied for the implementation of the preferred solution before the components and corresponding limitations to the transition from the current to the desired organizational state were discussed. The insights generated were kept front of mind in development of the change process monitoring and evaluation plans, practices, and activities using the PDCA Cycle (Moen & Norman, 2009, 2010). The chapter concluded with a plan to communicate the need for change and the change process using the Change Path Model (Cawsey et al., 2016), overlaid with select steps from the eight stage Change Model (Kotter 1996), and the Conceptual Model of Communication (Elving, 2005).

### **Next Steps and Future Considerations**

The following section outlines next steps and future considerations beyond the scope and the 18-month timeframe of this OIP. Three areas are considered. First is the institutionalization of the chosen solution within the SEM structure and processes. The next steps related to institutionalization would encompass phase two of the Act stage of the PDCA Cycle, as indicated in the Monitoring and Evaluation section. In this stage, we would expect to see participation in the Data Fellows program institutionalized across the SEM structure, including Late Adopters and Laggards. An increase in direct and non-direct engagement with TS institutional site content and supporting resources would also be expected. Therefore, next steps involve 1) focus on the adoption of change by Late Adopters and Laggards and 2) assessment and evaluation of



the change, as related to the achievement of the identified enrollment and SMA3 priorities and targets.

In support of the institutionalization of the chosen solution, the focus of future communication would be on strategies to continue to build an effective DDDM culture within the SEM structural context. These strategies could include evolution of Tableau intranet functionalities and the TS model. TS and TC intranet could expand to include calendars of training, education and engagement events, two-way communication forums for enhancements of TC, and a newsfeed highlighting the work of Data Fellows and celebrating TS user engagement outcomes. Additional engagement opportunities for stakeholders would also be considered including lunch n' learn meetings to build new skills, a forum for cross-functional collaboration, and Data Days to celebrate successes.

The second area is consideration for a college-wide data analytics strategy. A decline in public support for PSIs has led HE leaders to consider other sources, including but not limited to tuition increases, private sector funding, and donations (Busch, 2017). This trend is observed in the College X context as well. The Ontario government has implemented a freeze on post-secondary tuition fees and the enrollment corridor mechanism, which constricts revenue generation through post-secondary enrollment growth. This has led College X to diversify its sources of revenue by looking to markets where the government has no control, such as non-post-secondary programming and corporate training. In addition, College X has faced new challenges because it lacked infrastructure and data in this context. In the past year, College X has invested resources in building information technology infrastructure to support non-post-secondary and corporate activity. This will result in the generation of new data sources and identification of future data needs. While challenging, this could provide opportunities for the IR unit. Informing strategy around these activities will require reliance on these and additional data sources, as well as collaboration between information technology and the institutional research and analytics communities.

The need to inform strategy and enrollment management in this new context supports the case for a college-wide analytics strategy, organized by strategic planning and supported by institutional research functions. Strategic analytics is a relatively new concept in HE, with a limited number of PSIs having access to a group of experts who are tasked with using data from multiple sources to support organizational strategy development and implementation (Marsh & Thairani, 2020). Recognizing that these functions reside with IPA, this presents the department with an opportunity to play a lead role in guiding development and implementation of the College X data analytics strategy. This OIP could demonstrate the ability of IPA to deliver on this type of work in a highly structured, yet collaborative manner aligned with organizational priorities.

The evolution of data analytics beyond the post-secondary context has implications for TS content. Providing insights into non-post-secondary enrollment and corporate training activities, and enabling DDDM in this context, would require development of new TS content and supporting resources. In addition, this would have implications for capacity building strategies and activities for a broader group of stakeholders. This OIP could therefore serve as a blueprint for how to inform, develop, and implement the College X data analytics strategy.

The third area concerns readying the IR unit for the evolving needs of College X. The core functions and roles of IR units include 1) identifying information needs, 2) collecting, analyzing, interpreting, and reporting data and information, 3) planning and evaluating, and 4) serving as stewards of data and information (Association for Institutional Research, 2017). These mirror the scope of College X IR unit work. However, the IR unit will need to extend its capabilities to support strategic analytics. This could involve work related to competitive intelligence, market research, program review, assessment and evaluation of organizational performance, and integrative analytics that combine data from multiple sources and functional areas within the institution (Marsh & Thairani, 2020). As the Associate Director, IR, I will need to consider ways to equip the unit with skills and abilities to support College X in becoming a

Tier 3 organization. According to Marsh and Thariani (2020), Tier 3 organizations demonstrate advanced use of strategic analytics by employing their data capability as a competitive strategy driver. Moreover, these are growth-oriented learning organizations that aim to become more agile through 1) leveraging the knowledge and experience provided by their data analytics capabilities and 2) their use in critical decision-making situations and tracking of outcomes of strategic and operational decisions. Thus, I will assume role of impatient advocate in pursuit of opportunities (Johnson & Simon, 2018), such as those identified above, that future-proof the role of the IR unit within College X's current and future governance structures and processes.

### **Conclusion**

The chosen OIP solution is intended to enhance the stakeholder capacity for effective DDDM in support of achievement of strategic and SMA priorities related to enrollment as well as SMA3 performance targets. By empowering stakeholders within SEM structure to be able to anticipate and proactively prepare for future challenges and opportunities through effective DDDM, institutionalization and evolution of the solution has the potential to positively impact College X efforts toward financial sustainability. Moreover, this OIP has the potential to build a case for broader organizational applications and strategies. In Chapter 6 of Webber and Zheng's book *Big Data on Campus: Data Analytics and Decision Making in Higher Education*, Glasgal and Nestor (2020) argue that building a data analytics culture that can "take root in an organization requires a network of people from across the institution to participate in elements of data governance and build a foundational layer for a data-enabled business" (p. 122). Doing so could position College X well for informing strategic work within uncertainty and complexity of HE context. Moreover, together these efforts support building of organizational DDDM culture. As Davies (2002) cites one US hospital group executive: "culture eats strategy for breakfast, every day, every time" (p. 142).

## References

- Andrew, A. (2017). Influence of Employee Attitude on Employee Readiness for Organizational Change. *Asian Journal of Economics, Business and Accounting*, 5(1), 1-11.  
<https://doi.org/10.9734/AJEBA/2017/37126>
- Apple, M. W. (2004). Creating Difference: Neo-Liberalism, Neo-Conservatism and the Politics of Educational Reform. *Educational Policy*, 18(1), 12–44.  
<https://doi.org/10.1177/0895904803260022>
- Armenakis, A. A., & Harris, S. G. (2002). Crafting a change message to create transformational readiness. *Journal of Organizational Change Management*, 15(2), 169–183.  
<https://doi.org/10.1108/09534810210423080>
- Armenakis, A. A., Harris, S. G., & Mossholder, K. W. (1993). Creating Readiness for Organizational Change. *Human Relations*, 46(6), 681–703.  
<https://doi.org/10.1177/001872679304600601>
- Armenakis, A. A., Harris, S. G., & Feild, H. S. (2000). Making change permanent A model for institutionalizing change interventions. In *Research in Organizational Change and Development* (Vol. 12, pp. 97–128). Emerald Group Publishing Limited.  
[https://doi.org/10.1016/S0897-3016\(99\)12005-6](https://doi.org/10.1016/S0897-3016(99)12005-6)
- Armenakis, A. A., & Harris, S. G. (2009). Reflections: Our journey in organizational change research and practice. *Journal of change management*, 9(2), 127-142.  
<https://doi.org/10.1080/14697010902879079>
- Austin, I., & Jones, G. A. (2016). *Governance of Higher Education: Global Perspectives, Theories, and Practices* (1st ed.). Routledge.
- Baldrige, J. V., & Deal, T. E. (1983). Organizational characteristics of colleges and universities. In J. V. Baldrige, T. E. Deal, & C. Inglos (Eds.), *The dynamics of organizational change in education* (pp. 38- 59). McCutchan Pub. Corp.

- Bartunek, J., & Moch, M. (1987). First-Order, Second-Order, and Third-Order Change and Organization Development Interventions: A Cognitive Approach. *The Journal of Applied Behavioral Science*, 23(4), 483–500. <https://doi.org/10.1177/002188638702300404>
- Bass, B., & Bass, R. (2008). *The Bass handbook of leadership: theory, research, and managerial applications* (4th ed.). Free Press.
- Beatty, C. A. (2015). Communicating during an organizational change. *Organization Studies*, 15(3), 337-352.
- Beerkens, M. (2018). Evidence-based policy and higher education quality assurance: progress, pitfalls and promise. *European Journal of Higher Education*, 8(3), 272-287. <https://doi.org/10.1080/21568235.2018.1475248>
- Benson, G. S., Kimmel, M., & Lawler, E. E. (2013). Adoption of employee involvement practices: Organizational change issues and insights. *Research in organizational change and development*. 21, 233-257. [https://doi.org/10.1108/So897-3016\(2013\)0000021011](https://doi.org/10.1108/So897-3016(2013)0000021011)
- Bergman, J., Rentsch, J., Small, E., Davenport, S., & Bergman, S. (2012). The Shared Leadership Process in Decision-Making Teams. *The Journal of Social Psychology*, 152(1), 17–42. <https://doi.org/10.1080/00224545.2010.538763>
- Bergquist, W. H., & Pawlak, K. (2008). *Engaging the six cultures of the academy*. San Francisco, CA: Jossey-Bass.
- Black, J. (2010). Strategic enrolment issues facing higher education leaders. In J. Black (Ed.), *Strategic Enrolment Intelligence* (pp. 15- 26). <http://eduvation.ca/wp-content/uploads/strategic-enrolment-intelligence.pdf>
- Blanchard, K.H., Zigarmi, P., & Zigarmi, D. (1985). *Leadership and the One Minute Manager*. William Morrow.
- Blanchard, K.H., Zigarmi, P. & Zigarmi, D. (2013). *Leadership and the One Minute Manager: Increasing Effectiveness through Situational Leadership® II*. HarperCollins Publishers.

- Bolden, R., Petrov, G., & Gosling, J. (2009). Distributed Leadership in Higher Education: Rhetoric and Reality. *Educational Management, Administration & Leadership*, 37(2), 257–277. <https://doi.org/10.1177/1741143208100301>
- Bolman, L. G., & Deal, T. E. (2013). *Reframing organizations : artistry, choice, and leadership* (5th ed.). Jossey-Bass.
- Bonebright, D. (2010). 40 years of storming: a historical review of Tuckman’s model of small group development. *Human Resource Development International*, 13(1), 111–120. <https://doi.org/10.1080/13678861003589099>
- Botas, P. C., & Huisman, J. (2012). (De)constructing power in higher education governance structures: an analysis of representation and roles in governing bodies. *European Journal of Higher Education*, 2(4), 370–388. <https://doi.org/10.1080/21568235.2012.746422>
- Bottazzo, V. (2005). Intranet: A medium of internal communication and training. *Information Services & Use*, 25(2), 77–85. <https://doi.org/10.3233/ISU-2005-25202>
- Brown, M. E., & Gioia, D. A. (2002). Making things click: Distributive leadership in an online division of an offline organization. *The Leadership Quarterly*, 13(4), 397–419. [https://doi.org/10.1016/S1048-9843\(02\)00123-6](https://doi.org/10.1016/S1048-9843(02)00123-6)
- Browne, L., & Rayner, S. (2015). Managing leadership in university reform: Data-led decision-making, the cost of learning and déjà vu? *Educational Management Administration and Leadership*, 43(2), 290–307. <https://doi.org/10.1177/1741143213494890>
- Brownlee, J. (2015). *Academia, Inc.: how corporatization is transforming Canadian universities*. Fernwood Publishing.
- Bryman, A. (2007). Effective leadership in higher education: a literature review. *Studies in Higher Education*, 32(6), 693–710. <https://doi.org/10.1080/03075070701685114>
- Buller, J. L. (2015). *Change leadership in higher education: A practical guide to academic Transformation*. Jossey-Bass.

- Burke, J., & Minassians, H. (2002). Measuring down and up: The missing link. *New Directions for Institutional Research*, 2002(116), 97–114. <https://doi.org/10.1002/ir.62>.
- Burnes, B. (2005). Complexity theories and organizational change. *International Journal of Management Reviews*, 7(2), 73–90. <https://doi.org/10.1111/j.1468-2370.2005.00107.x>
- Busch, L. (2017). *Knowledge for Sale: The neoliberal takeover of higher education*. MIT Press.
- Byrne, D. S. (1998). *Complexity theory and the social sciences: an introduction* (1st ed.). Routledge. <https://doi.org/10.4324/9780203003916>
- Cacciattolo, K. (2014). Understanding organisational cultures. *European scientific journal*, 2(1), 1-7. <https://eujournal.org/index.php/esj/article/view/4782>
- Capano, G. (2011). Government continues to do its job. A comparative study of governance shifts in the higher education sector. *Public Administration*, 89(4), 1622-1642. <https://doi.org/10.1111/j.1467-9299.2011.01936.x>
- Carew, D., Parisi-Carew, E., & Blanchard, K. (1986). Group development and situational leadership: A model for managing groups. *Training and Development Journal*, 40(6), 46-60.
- Cawsey, T. F., Deszca, G. & Ingols, C. (2016). *Organizational change: An action-oriented toolkit* (3rd ed.). Sage.
- Cech, T., Spaulding, T., & Cazier, J. (2018). Data competence maturity: developing data-driven decision making. *Journal of Research in Innovative Teaching & Learning*, 11(2), 139–158. <https://doi.org/10.1108/JRIT-03-2018-0007>
- Chan, V. (2015). The efficacy of key performance indicators in Ontario universities as perceived by key informants. *Canadian Journal of Higher Education*, 45(4), 440–456. <https://doi:10.1080/1360080X.2014.991531>
- Chen, P. S. D. (2011). Finding Quality Responses: The Problem of Low-Quality Survey Responses and Its Impact on Accountability Measures. *Research in Higher Education*, 52(7), 659–674. <https://doi.org/10.1007/s11162-011-9217-4>

- Conner, T., & Rabovsky, T. (2011). Accountability, Affordability, Access: A Review of the Recent Trends in Higher Education Policy Research. *Policy Studies Journal*, 39(s1), 93–112. [https://doi.org/10.1111/j.1541-0072.2010.00389\\_7.x](https://doi.org/10.1111/j.1541-0072.2010.00389_7.x)
- College X. (2018). Strategic Plan. [Citation withheld for anonymization purposes].
- Cubarrubia, A., & Le, M. (2019). Navigating Institutional Culture in Ensuring the Ethical Use of Data in Support of Student Success and Institutional Effectiveness. *New Directions for Institutional Research*, 2019(183), 17–26. <https://doi.org/10.1002/ir.20309>
- Cutt, J., Trotter, L., & Lee, C. E. (1993). Performance measurement and accountability in Canadian universities: making a start in the area of teaching. *Financial Accountability & Management*, 9(4), 255–266. <https://doi.org/10.1111/j.1468-0408.1993.tb00377.x>
- D’Amico, M., Friedel, J., Katsinas, S., & Thornton, Z. (2014). Current Developments in Community College Performance Funding. *Community College Journal of Research and Practice*, 38(2-3), 231–241. <https://doi.org/10.1080/10668926.2014.851971>
- Davies, H. T. O. (2002). Understanding organizational culture in reforming the National Health Service. *Journal of the Royal Society of Medicine*, 95(3), 140–142. <https://doi.org/10.1258/jrsm.95.3.140>
- Day, D. V., Gronn, P., & Salas, E. (2004). Leadership capacity in teams. *The Leadership Quarterly*, 15(6), 857–880. <https://doi.org/10.1016/j.leaqua.2004.09.001>
- DeRue, D. S. (2011). Adaptive leadership theory: Leading and following as a complex adaptive process. *Research in Organizational Behavior*, 31, 125–150. <https://doi.org/10.1016/j.riob.2011.09.007>
- Devos, G., Buelens, M., & Bouckennooghe, D. (2007). Contribution of Content, Context, and Process to Understanding Openness to Organizational Change: Two Experimental Simulation Studies. *The Journal of Social Psychology*, 147(6), 607–630. <https://doi.org/10.3200/SOCP.147.6.607-630>



- DiMaggio, P. J., & Powell, W. W. (1983). The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields. *American Sociological Review*, 48(2), 147–160. <https://doi.org/10.2307/2095101>
- Dougherty, K. J., Jones, S. M., Lahr, H., Natow, R. S., Pheatt, L., & Reddy, V. (2014). Performance Funding for Higher Education: Forms, Origins, Impacts, and Futures. *The ANNALS of the American Academy of Political and Social Science*, 655(1), 163–184. <https://doi.org/10.1177/0002716214541042>
- Dougherty, K. J., Jones, S. M., Lahr, H., Natow, R. S., Pheatt, L., & Reddy, V. (2016). Looking Inside the Black Box of Performance Funding for Higher Education: Policy Instruments, Organizational Obstacles, and Intended and Unintended Impacts. *RSF: Russell Sage Foundation Journal of the Social Sciences*, 2(1), 147–173. <https://doi.org/10.7758/rsf.2016.2.1.07>
- Ehrich, L.C., Harris, J., Klenowski, V., Smeed, J., & Spina, N. (2015). The centrality of ethical leadership. *Journal of Educational Administration*, 53(2), 197-214. <https://doi.org/10.1108/JEA-10-2013-0110>
- Ekowo, M., & Palmer, I. (2016). *The Promise and Peril of Predictive Analytics in Higher Education: A Landscape Analysis*. Educational Policy Paper. New America. <https://files.eric.ed.gov/fulltext/ED570869.pdf>
- Elving, W. (2005). The role of communication in organisational change. *Corporate Communications*, 10(2), 129–138. <https://doi.org/10.1108/13563280510596943>
- Engeström, Y. (1987). *Learning by expanding: An activity-theoretical approach to developmental research*. Helsinki: Orienta-Konsultit.
- Ensley, M. D., Hmieleski, K. M., & Pearce, C. L. (2006). The importance of vertical and shared leadership within new venture top management teams: Implications for the performance of startups. *The Leadership Quarterly*, 17(3), 217–231. <https://doi.org/10.1016/j.leaqua.2006.02.002>

- Fiedler, F. E. (1964). A contingency model of leadership effectiveness. *Advances in Experimental Social Psychology*, 1, 149–190.
- George, P. J., & McAllister, J. A. (1995). The Accountability Movement in Canada: An Affirmation of the Autonomous University or Just Another Name for Government Intervention? *Higher Education Policy*, 8(3), 27–32.  
<https://doi.org/10.1057/hep.1995.40>
- Glasgal, R., & Nestor, V. (2020) Data Governance, Data Stewardship, and the Building of an Analytics Organizational Culture. In K. L. Webber & H. Y. Zheng (Eds.), *Big Data on Campus: Data Analytics and Decision Making in Higher Education* (pp. 122-148). Johns Hopkins University Press.
- Gonyea, R., & Miller, A. (2011). Clearing the AIR about the use of self-reported gains in institutional research. *New Directions for Institutional Research*, 2011(150), 99–111.  
<https://doi.org/10.1002/ir.392>
- Gosling, J., Bolden, R., & Petrov, G. (2009). Distributed leadership in higher education: What does it accomplish? *Leadership*, 5(3), 299–310.  
<https://doi.org/10.1177/1742715009337762>
- Gronn, P. (2000). Distributed properties: a new architecture for leadership. *Educational Management & Administration*, 28(3), 317–338.  
<https://doi.org/10.1177/0263211X000283006>
- Gronn, P. (2002). Distributed leadership as a unit of analysis. *The Leadership Quarterly*, 13(4), 423–451. [https://doi.org/10.1016/S1048-9843\(02\)00120-0](https://doi.org/10.1016/S1048-9843(02)00120-0)
- Government of Ontario. (2017). *2017-20 Strategic Mandate Agreement: College X*. [Citation withheld for anonymization purposes].
- Government of Ontario. (2019). *2019 Ontario Budget: Protecting What Matters Most*.  
<https://budget.ontario.ca/pdf/2019/2019-ontario-budget-en.pdf>

- Government of Ontario. (2020). *2020-25 Strategic Mandate Agreement: College X*. [Citation withheld for anonymization purposes].
- Government of Ontario. (2021, June 11). *College Graduation, Satisfaction and Job Rates*. <https://www.ontario.ca/page/college-graduation-satisfaction-and-job-rates#section-1>
- Greenwood, R., Hinings, C., & Whetten, D. (2014). Rethinking Institutions and Organizations. *Journal of Management Studies*, 51(7), 1206–1220. <https://doi.org/10.1111/joms.12070>
- Harris, A. (2008). Distributed leadership: according to the evidence. *Journal of Educational Administration*, 46(2), 172–188. <https://doi.org/10.1108/09578230810863253>
- Heide, M. (2008). Speaking of change: three communication approaches in studies of organizational change, *Corporate Communications: An International Journal*, 13(3), 288 – 305. <http://dx.doi.org/10.1108/13563280810893661>
- Heide, M., von Platen, S., Simonsson, C., & Falkheimer, J. (2018). Expanding the scope of strategic communication: Towards a holistic understanding of organizational complexity. *International Journal of Strategic Communication*, 12(4), 452-468. <https://doi.org/10.1080/1553118X.2018.1456434>
- Heifetz, R. A. (1994). *Leadership without easy answers*. Belknap Press of Harvard University Press.
- Heifetz, R. A., Grashow, A., & Linsky, M. (2009). Leadership in a (permanent) crisis. *Harvard Business Review*, 87(7-8), 62-69.
- Heifetz, R. A., & Laurie, D. L. (1997). The work of leadership. *Harvard Business Review*, 75(1), 124-134.
- Heifetz, R., & Linsky, M. (2002). *Leadership on the line: staying alive through the dangers of leading*. Harvard Business Review Press.
- Hernes, T. (2008). *Understanding Organization as Process: Theory for a Tangled World*. Routledge. <https://doi.org/10.4324/9780203934524>

- Hersey, P. and Blanchard, K. H. (1969). *Management of Organizational Behavior – Utilizing Human Resources*. Prentice Hall.
- Hersey, P. and Blanchard, K. H. (1977). *Management of Organizational Behavior – Utilizing Human Resources* (3rd ed.). Prentice Hall.
- Hersey, P., Blanchard, K.H., Johnson D.E. (1996). *Management of organization behavior: utilizing human resources* (7th ed.). Prentice-Hall.
- Hicks, M. (2015). *Design Questions: Funding Models for Ontario*. Higher Education Quality Council of Ontario. <https://heqco.ca/wp-content/uploads/2020/03/Funding-Formula-II-ENG.pdf>
- Higher Education Quality of Council of Ontario (2013). *Performance Indicators: A report on where we are and where we are going*. Higher Education Quality Council of Ontario. [https://heqco.ca/wp-content/uploads/2020/05/Performance Indicators ENG.pdf](https://heqco.ca/wp-content/uploads/2020/05/Performance_Indicators_ENG.pdf)
- Hoch, J. (2013). Shared Leadership and Innovation: The Role of Vertical Leadership and Employee Integrity. *Journal of Business and Psychology*, 28(2), 159–174. <https://doi.org/10.1007/s10869-012-9273-6>
- Holt, D.T., Armenakis, A.A., Harris, S.G., & Feild, H.S. (2007). Toward a Comprehensive Definition of Readiness for Change: A Review of Research and Instrumentation. In W. A. Pasmore & R. W. Woodman (Eds.), *Research in Organizational Change and Development* (pp. 289-336), Emerald Group Publishing Limited. [https://doi.org/10.1016/S0897-3016\(06\)16009-7](https://doi.org/10.1016/S0897-3016(06)16009-7)
- Hossler, D., & Bontrager, B. (2014). *Handbook of strategic enrollment management*. John Wiley & Sons.
- Howard, R. D., McLaughlin, G. W., & Knight, W. E. (2012). *The Handbook of Institutional Research* (1st ed.). Jossey-Bass.
- Hutchins, E. (1995). *Cognition in the wild*. MIT Press.

- Ikemoto, G. S., & Marsh, J. A. (2007). Cutting Through the “Data-Driven” Mantra: Different Conceptions of Data-Driven Decision Making. *The Yearbook of the National Society for the Study of Education*, 106(1), 105-131. <https://doi.org/10.1111/j.1744-7984.2007.00099.x>
- Imai, M. (1986). *Kaizen: The Key to Japan’s Competitive Success* (1st ed.). Random House Business Division.
- Johnson, G., & Simon, J. (2018). Future-Proofing Institutional Research Skills in an Evolving Digital Institution. *New Directions for Institutional Research*, 2018(178), 11-26. <https://doi.org/10.1002/ir.20264>
- Jones, S., Lefoe, G., Harvey, M., & Ryland, K. (2012). Distributed leadership: A collaborative framework for academics, executives and professionals in higher education. *Journal of Higher Education Policy and Management*, 34(1), 67-78. <https://doi:10.1080/1360080X.2012.642334>
- Kellerman, B. (2004). *Bad Leadership: What It Is, How It Happens, Why It Matters*. Harvard Business Review Press.
- Kezar, A. (2018). *How colleges change: Understanding, leading, and enacting change*. (2<sup>nd</sup> ed). Routledge. <https://doi.org/10.4324/9781315121178>
- Kinicki, A., & Fugate, M. (2012). *Organizational behavior : key concepts, skills & best practices* (5th ed.). McGraw-Hill Irwin.
- Kirby, D. (2007). Reviewing Canadian post-secondary education: Post-secondary policy in post-industrial Canada. *Canadian Journal of Educational Administration*, 65 (3), 1-24. <https://eric.ed.gov/?id=EJ806980>
- Klein, S. M. (1996). A management communication strategy for change. *Journal of organizational change management*. 9(2), 32-46. <https://doi.org/10.1108/09534819610113720>

- Knapp, M. S., Swinnerton, J. A., Copland, M. A., & Monpas-Huber, J. (2006). *Data informed leadership in education*. Center for the Study of Teaching and Policy, University of Washington and the Wallace Foundation.
- <https://www.education.uw.edu/ctp/sites/default/files/ctpmail/PDFs/DataInformed-Nov1.pdf>
- Koenig, D. R. (2012). *Governance Reimagined: Organizational Design, Risk, and Value Creation*. Wiley.
- Kolesar, P. J. (1994). What Deming told the Japanese in 1950. *Quality Management Journal*, 2(1), 9-24. <https://doi.org/10.1080/10686967.1994.11918672>
- Kotter, J.P. (1996). *Leading Change*. Harvard Business School Press.
- Kotter, J. P. (2012). *Leading Change*. Harvard Business Review Press.
- Lane, K. E., McCormack, T.J., & Richardson, M. D. (2013). Resilient Leaders: Essential for Organizational Innovation. *The international Journal of Organizational Innovation* 6(2), 7-25. <https://www-lib-uwo-ca.proxy1.lib.uwo.ca/cgi-bin/ezpauthn.cgi?url=http://search.proquest.com.proxy1.lib.uwo.ca/scholarly-journals/resilient-leaders-essential-organizational/docview/1446441747/se-2?accountid=15115>
- Langley, G. J., Moen, R. D., Nolan, K. M., Nolan, T. W., Norman, C. L., & Provost, L. P. (2009). *The improvement guide: A practical approach to enhancing organizational performance* (2nd ed.). Jossey-Bass.
- Lawrence, P. R. and Lorsch, J. W. (1967). *Organization and Environment*. Graduate School of Business, Harvard University.
- Leithwood, K. A. (2006). *Teacher working conditions that matter: evidence for change*. Elementary Teachers' Federation of Ontario.
- Leithwood, K., Mascall, B., Strauss, T., Sacks, R., Memon, N., & Yashkina, A. (2007). *Distributing Leadership to Make Schools Smarter: Taking the Ego Out of the*

- System. *Leadership and Policy in Schools*, 6(1), 37–67.  
<https://doi.org/10.1080/15700760601091267>
- Leontyev, A. N. (1981). *Problems of the development of the mind*. Progress Publishers.
- Levine, R., Acker, J., Baca-Zinn, M., Collins, P. H., Cox, O., Davis, K., Eells, K., Dill, B. T., DuBois, W. E., & Engels, F. (2006). *Social Class and Stratification: Classic Statements and Theoretical Debates*. Rowman & Littlefield Publishers.
- Lichtenstein, B. B., & Plowman, D. A. (2009). The leadership of emergence: A complex systems leadership theory of emergence at successive organizational levels. *The Leadership Quarterly*, 20(4), 617–630. <https://doi.org/10.1016/j.leaqua.2009.04.006>
- Lichtenstein, B., Uhl-Bien, M., Marion, R., Seers, A., Orton, J. D., & Schreiber, C. (2006). Complexity leadership theory: An interactive perspective on leading in complex adaptive systems. *Emergence: Complexity and Organization*, 8(4), 2-12.  
<https://digitalcommons.unl.edu/managementfacpub/8>
- Lokuge, S., Sedera, D., Grover, V., & Dongming, X. (2019). Organizational readiness for digital innovation: Development and empirical calibration of a construct. *Information & Management*, 56(3), 445–461. <https://doi.org/10.1016/j.im.2018.09.001>
- Lumby, J. (2012). Leading organizational culture: Issues of power and equity. *Educational Management Administration & Leadership*, 40(5), 576-591.  
<https://doi.org/10.1177/1741143212451173>
- Lumby, J. (2019). Distributed Leadership and bureaucracy. *Educational Management Administration & Leadership*, 47(1), 5–19. <https://doi.org/10.1177/174114321771119>
- Lumby, J., & Foskett, N. (2011). Power, Risk, and Utility: Interpreting the Landscape of Culture in Educational Leadership. *Educational Administration Quarterly*, 47(3), 446–461.  
<https://10.1177/0013161X11400187>
- Mandinach, E. B., & Honey, M. (Eds.). (2008). *Data-driven school improvement: Linking data and learning*. Teachers College Press.

- Mandinach, E. B., Honey, M., Light, D., & Brunner, C. (2008). *A conceptual framework for data-driven decision making*. In E. B. Mandinach & M. Honey (Eds.), *Data-driven school improvement: Linking data and learning* (pp. 13–31). Teachers College Press.
- Mandinach, E. B. (2012). A perfect time for data use: Using data-driven decision making to inform practice. *Educational Psychologist*, *47*(2), 71-85.  
<https://doi.org/10.1080/00461520.2012.667064>
- Mandinach, E. B., & Gummer, E. S. (2013). A systemic view of implementing data literacy in educator preparation. *Educational Researcher*, *42*(1), 30-37.  
<https://doi.org/10.3102/0013189X12459803>
- Mandinach, E. B., Friedman, J., & Gummer, E. S. (2015). How can schools of education help to build educators' capacity to use data? A systemic view of the issue. *Teachers College Record*, *117*(4), 1-50.
- Manning, K. (2018). *Organizational theory in higher education* (1st ed., Vol. 1). Routledge.  
<https://doi.org/10.4324/9781315618357>
- Manson, S. M. (2001). Simplifying complexity: a review of complexity theory. *Geoforum*, *32*(3), 405–414. [https://doi.org/10.1016/S0016-7185\(00\)00035-X](https://doi.org/10.1016/S0016-7185(00)00035-X)
- Marion, R. (1999). *The edge of organization: Chaos and complexity theories of formal social systems*. Sage.
- Markiewicz, A., & Patrick, I. (2016). *Developing Monitoring and Evaluation Frameworks*. Sage.
- Marsh, J. A., & Farrell, C. C. (2015). How leaders can support teachers with data-driven decision making: A framework for understanding capacity building. *Educational Management Administration & Leadership*, *43*(2), 269-289.  
<https://doi.org/10.1177/1741143214537229>
- Marsh, J. A., Pane, J. & Hamilton, L. S. (2006). Making Sense of Data-Driven Decision Making in Education: Evidence from recent RAND Research. RAND Corporation.  
[https://www.rand.org/pubs/occasional\\_papers/OP170.html](https://www.rand.org/pubs/occasional_papers/OP170.html)



- Marsh, G. B., & Thariani, R. (2020) Guiding Your Organization's Data Strategy: The Roles of University Senior Leaders and Trustees in Strategic Analytics. In K. L. Webber & H. Y. Zheng (Eds.), *Big Data on Campus: Data Analytics and Decision Making in Higher Education* (pp. 103-121). Johns Hopkins University Press.
- Mason, M. (2008). What Is Complexity Theory and What Are Its Implications for Educational Change? *Educational Philosophy and Theory*, 40(1), 35–49.  
<https://doi.org/10.1111/j.1469-5812.2007.00413.x>
- Mathies, C. (2018). The Ethical Use of Data. *New Directions for Institutional Research*, 2018(178), 85-97. <https://doi.org/10.1002/ir.20269>
- McCleskey, J. A. (2014). Situational, Transformational, and Transactional Leadership and Leadership Development. *Journal of Business Studies Quarterly*, 5(4), 117-130.
- McKinnon, P. (2014). *University leadership and public policy in the Twenty-first Century: A president's perspective*. University of Toronto Press.  
<https://doi.org/10.3138/j.ctt1287tcr>
- Melguizo, T., Zamarro, G., Velasco, T., & Sanchez, F. J. (2017). The Methodological Challenges of Measuring Student Learning, Degree Attainment, and Early Labor Market Outcomes in Higher Education. *Journal of Research on Educational Effectiveness*, 10(2), 424–448. <https://doi.org/10.1080/19345747.2016.1238985>
- Miller, V. D., Johnson, J. R., & Grau, J. (1994). Antecedents to willingness to participate in a planned organizational change. *Journal of Applied Communication Research*, 22(1), 59–80. <https://doi.org/10.1080/00909889409365387>
- Mintzberg, H., & Westley, F. (2001). It's not what you think. *MIT Sloan Management Review*, 42(3), 89-93.
- Moen, R. D., & Norman, C. L. (2009, September 17). *The History of the PDCA Cycle* [Conference proceedings]. The 7th Asian Network for Quality Congress, Tokyo, Japan.

- Moen, R. D., & Norman, C. L. (2010). Circling Back: Clearing up the myths about the Deming cycle and seeing how it keeps evolving. *Quality Progress*, 43(11), 22-28.  
<https://asq.org/quality-progress/articles/circling-back?id=5e4d2095ofad4b519133490466ccbfoa>
- Monaghan, B. W. (2017). *Leadership Competencies in Data Driven Decision Making*. ProQuest Dissertations Publishing.
- Morgan, G. (1980). Paradigms, Metaphors, and Puzzle Solving in Organization Theory. *Administrative Science Quarterly*, 25(4), 605–622.  
<https://doi.org/10.2307/2392283>
- Morgan, G. (2006). *Images of Organization* (3rd ed.). Sage Publications.
- Morisson, A., & Doussineau, M. (2019). Regional innovation governance and place-based policies: design, implementation and implications. *Regional Studies, Regional Science*, 6(1), 101-116. <https://doi.org/10.1080/21681376.2019.1578257>
- Murray, J. (2009). The wider social benefits of higher education: What do we know about them? *Australian Journal of Education*, 53(3), 230–244.  
<https://doi.org/10.1177/0004944109005300303>
- Nadler, D. A. (1981). Managing Organizational Change: An Integrative Perspective. *The Journal of Applied Behavioral Science*, 17(2), 191–211.  
<https://doi.org/10.1177/002188638101700205>
- Nadler, D. A., & Tushman, M. L. (1980). A model for diagnosing organizational behavior. *Organizational Dynamics*, 9(2), 35–51. [https://doi.org/10.1016/0090-2616\(80\)90039-X](https://doi.org/10.1016/0090-2616(80)90039-X)
- Northouse, P. (2016). *Leadership: Theory and practice* (7th ed). Sage.
- Ontario Ministry of Colleges and Universities. (n.d.). *Transforming Ontario's Postsecondary Education System*. Retrieved October 22, 2020, from <http://www.tcu.gov.on.ca/pepg/publications/vision/>

- Open Data Institute. (2020, March). *Data Skills Framework*. Retrieved October 22, 2020  
<https://theodi.org/article/data-skills-framework/#1561999921429-63b9852c-04522584-8cfe>
- Pakravan, P. (2006). *The Future Is Not What It Used to Be: Re-examining Provincial Postsecondary Funding Mechanisms in Canada*. C.D. Howe Institute.
- Parker, G. (2008). *Team players and teamwork: new strategies for developing successful collaboration*, (2nd ed.). Wiley.
- Pietrzak, M., & Paliszkiwicz, J. (2015). Framework of Strategic Learning: The PDCA Cycle. *Management Science*, 10(2), 149-161. [https://www.fm-kp.si/zalozba/ISSN/1854-4231/10\\_149-161.pdf](https://www.fm-kp.si/zalozba/ISSN/1854-4231/10_149-161.pdf)
- Putnam, L., & Pacanowsky, M. E. (1983). *Communication and organizations: an interpretive approach*. Sage Publications.
- Rafferty, A., Jimmieson, N., & Armenakis, A. (2013). Change Readiness: A Multilevel Review. *Journal of Management*, 39(1), 110–135. <https://doi.org/10.1177/0149206312457417>
- Ridsdale, C., Rothwell, J., Smit, M., Ali-Hassan, H., Bliemel, M., Irvine, D., Kelley, D., Matwin, S., & Wuetherick, B. (2015). *Strategies and Best Practices for Data Literacy Education: Knowledge Synthesis Report*. Dalhousie University. <http://dataliteracy.ca/wp-content/uploads/2016/04/Strategies-and-Best-Practices-for-Data-Literacy-Education.pdf>
- Rogers, E. M. (1962). *Diffusion of innovations*. Free Press.
- Rogers, Y., & Ellis, J. (1994). Distributed cognition: an alternative framework for analysing and explaining collaborative working. *Journal of Information Technology*, 9(2), 119–128. <https://doi.org/10.1057/jit.1994.12>
- Roth, W. M., & Lee, Y. J. (2007). “Vygotsky’s neglected legacy”: Cultural-historical activity theory. *Review of educational research*, 77(2), 186-232. <https://doi.org/10.3102/0034654306298273>

- Rouse, D. L. (2018). *Institutional Researchers: Perceptions of Data Influence in Internal Decision Making and Policy Formulation*. Widener University.
- Rutherford, A., & Rabovsky, T. (2014). Evaluating Impacts of Performance Funding Policies on Student Outcomes in Higher Education. *The Annals of the American Academy of Political and Social Science*, 655(1), 185–208.  
<https://doi.org/10.1177/0002716214541048>
- Sabir, A. (2018). The Congruence Management - a Diagnostic Tool to Identify Problem Areas in a Company. *Journal of Political Science and International Relations*, 1(2), 34-38.  
<https://doi.org/10.11648/j.jpsir.20180102.11>
- Sanford, T., & Hunter, J. M. (2011). Impact of Performance Funding on Retention and Graduation Rates. *Education Policy Analysis Archives*, 19, 33–.  
<https://doi.org/10.14507/epaa.v19n33.2011>
- Santos, V., & García, T. (2007). The complexity of the organizational renewal decision: the management role. *Leadership & Organization Development Journal*, 28(4), 336–355.  
<https://doi.org/10.1108/01437730710752210>
- Scott-Clayton, J., & Minaya, V. (2016). Should student employment be subsidized? Conditional counterfactuals and the outcomes of work-study participation. *Economics of Education Review*, 52, 1-18. <https://doi.org/10.1016/j.econedurev.2015.06.006>
- Shen, J., & Cooley, V. E. (2008). Critical issues in using data for decision-making. *International Journal of Leadership in Education*, 11(3), 319-329.  
<https://doi:10.1080/13603120701721839>
- Shewhart, W. A. (1939). *Statistical Method from the Viewpoint of Quality Control* (E. Deming, Ed.). Washington: The Graduate School, Department of Agriculture.
- Shin, J. C. (2010). Impacts of performance-based accountability on institutional performance in the U.S. *Higher Education*, 60(1), 47–68. <https://doi.org/10.1007/s10734-009-9285-y>

- Smith, I. (2005). Achieving readiness for organisational change. *Library Management*, 26(6/7), 408–412. <https://doi.org/10.1108/01435120510623764>
- Spillane, J. P. (2004). Educational Leadership. *Educational Evaluation and Policy Analysis*, 26(2), 169–172. <https://doi.org/10.3102/01623737026002169>
- Spillane, J. P. and Diamond, J. B. (2007). *Distributed Leadership in Practice*. Teachers College Press.
- Spillane, J. P. (2012). Data in Practice: Conceptualizing the Data-Based Decision-Making Phenomena. *American Journal of Education*, 118(2), 113–141. <https://doi.org/10.1086/663283>
- Sporn B. (2007). Governance and Administration: Organizational and Structural Trends. In J.J.F. Forest & P. G. Altbach (Eds.), *International Handbook of Higher Education*. Springer. [https://doi.org/10.1007/978-1-4020-4012-2\\_9](https://doi.org/10.1007/978-1-4020-4012-2_9)
- Starratt, R. (2004). *Ethical leadership* (1st ed.). Jossey-Bass.
- Tableau. (n.d.). *Meet Tableau Blueprint*. Retrieved October 22, 2020, from <https://www.tableau.com/learn/blueprint>
- Terenzini, P. T. (2013). “On the Nature of Institutional Research” Revisited: Plus ça Change...? *Research in Higher Education*, 54(2), 137–148. <https://doi.org/10.1007/s11162-012-9274-3>
- Thornton, P. H., & Ocasio, W. (1999). Institutional logics and the historical contingency of power in organizations : Executive succession in the higher education publishing industry, 1958-1990. *The American Journal of Sociology*, 105(3), 801–843. <https://doi.org/10.1086/210361>
- Thornton, P. H., & Ocasio, W. (2008). Institutional Logics. In Greenwood, R., Oliver, C., Suddaby, R., & Sahlin, K. *The SAGE handbook of organizational institutionalism*. (pp. 99-129). SAGE Publications Ltd. <https://www.doi.org/10.4135/9781849200387>

- Thornton, P. H., Ocasio, W., & Lounsbury, M. (2012). *The institutional logics perspective : a new approach to culture, structure and process*. Oxford University Press.
- Tian, M., Risku, M., & Collin, K. (2016). A meta-analysis of distributed leadership from 2002 to 2013: Theory development, empirical evidence and future research focus. *Educational Management, Administration & Leadership*, 44(1), 146–164.  
<https://doi.org/10.1177/1741143214558576>
- Tuckman, B. W. (1965). Developmental sequence in small groups. *Psychological Bulletin*, 63(6), 384–399. <https://doi.org/10.1037/h0022100>
- Tuckman, B. W., & Jensen, M. A. C. (1977). Stages of Small-Group Development Revisited. *Group & Organization Management*, 2(4), 419–427.  
<https://doi.org/10.1177/105960117700200404>
- Turk, J. M., & Taylor, M. (2019). Institutional Research in Support of Student Success at Our Nation’s Most Diverse and Inclusive Institutions. *New Directions for Institutional Research*, 2019(184), 75–90. <https://doi.org/10.1002/ir.20323>
- Van de Ven, A. H., Ganco, M., & Hinings, C. R. (2013). Returning to the frontier of contingency theory of organizational and institutional designs. *The Academy of Management Annals*, 7(1), 393-440. <https://doi.org/10.5465/19416520.2013.774981>
- Varghese, N. V. (2012). Drivers of reforms in higher education. In B. Adamson, J. Nixon, & F. Su (Eds.), *The reorientation of higher education: Challenging the east-west dichotomy* (pp. 36-49). Springer/CERC.
- Verdú, A. J., & Gómez-Gras, J. M. (2009). Measuring the organizational responsiveness through managerial flexibility. *Journal of Organizational Change Management*, 22(6), 668–690. <https://doi.org/10.1108/09534810910997069>
- Viberg, O., Hatakka, M., Bälter, O., & Mavroudi, A. (2018). The current landscape of learning analytics in higher education. *Computers in Human Behavior*, 89, 98–110.  
<https://doi.org/10.1016/j.chb.2018.07.027>

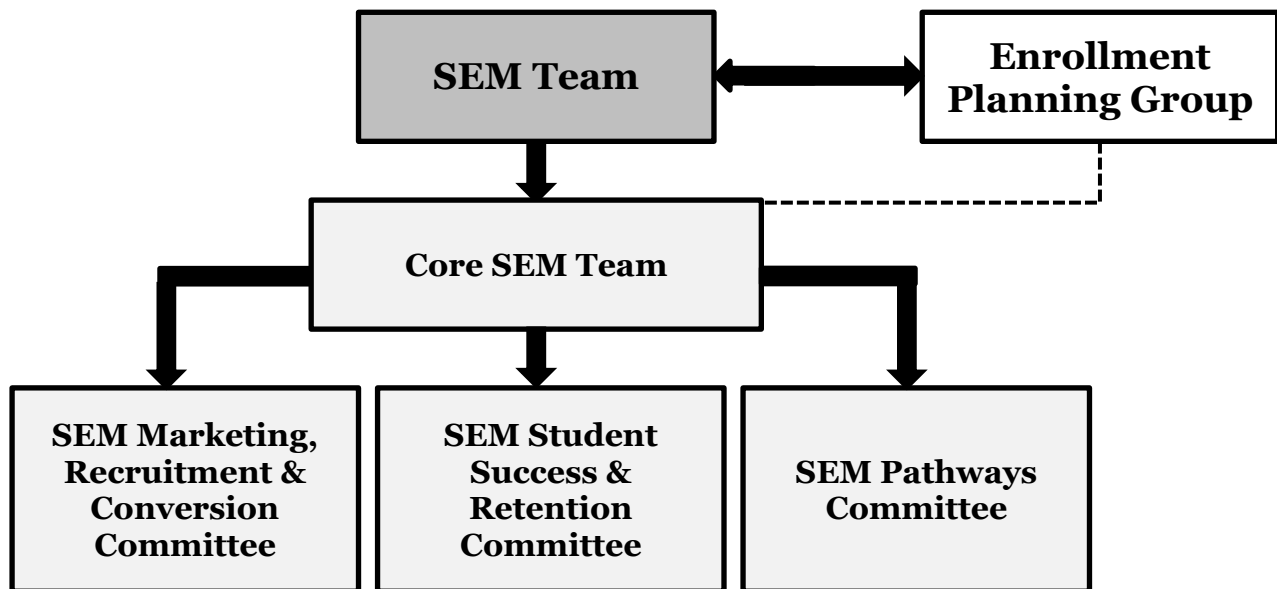
- Volkwein, J. (1999). The Four Faces of Institutional Research. *New Directions for Institutional Research*, 1999(104), 9–19. <https://doi.org/10.1002/ir.10401>
- Volkwein, J., & Tandberg, D. (2008). Measuring Up: Examining the Connections among State Structural Characteristics, Regulatory Practices, and Performance. *Research in Higher Education*, 49(2), 180–197. <https://doi.org/10.1007/s11162-007-9066-3>
- Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Harvard University Press.
- Wanberg, C. R., & Banas, J. T. (2000). Predictors and outcomes of openness to changes in a reorganizing workplace. *Journal of Applied Psychology*, 85(1), 132–142. <https://doi.org/10.1037//0021-9010.85.1.132>
- Wanous, J., Reichers, A., & Austin, J. (1994). Organizational Cynicism: An Initial Study. *Best Papers Proceedings - Academy of Management*, 8(1), 269–273. <https://doi.org/10.5465/AMBPP.1994.10344804>
- Wanous, J., Reichers, A., & Austin, J. (2004). Cynicism about Organizational Change: An Attribution Process Perspective. *Psychological Reports*, 94(3), 1421–1434. <https://doi.org/10.2466/pro.94.3c.1421-1434>
- Webber, K. L., & Zheng, H. Y. (2020). *Big Data on Campus: Data Analytics and Decision Making in Higher Education*. Johns Hopkins University Press.
- Webber, K. I., & Zheng, H. Y. (2020). Data Analytics and the Imperatives for Data-Informed Decision Making in Higher Education. In K. L. Webber & H. Y. Zheng (Eds.), *Big Data on Campus: Data Analytics and Decision Making in Higher Education* (pp. 3-29). Johns Hopkins University Press.
- Webber, K. I., & Zheng, H. Y. (2020). Data Governance, Data Stewardship, and the Building of an Analytics Organizational Culture. In K. L. Webber & H. Y. Zheng (Eds.), *Big Data on Campus: Data Analytics and Decision Making in Higher Education* (pp. 285-309). Johns Hopkins University Press.

- Weiner, B. J. (2009). A theory of organizational readiness for change. *Implementation Science: IS*, 4(1), 67–67. <https://doi.org/10.1186/1748-5908-4-67>
- Westover, H., J. (2010). Managing Organizational Change: Change Agent Strategies and Techniques to Successfully Managing the Dynamics of Stability and Change in Organizations. *International Journal of Management and Innovation*. 2(1), 45-50. <https://www-proquest-com.proxy1.lib.uwo.ca/docview/89071538?pq-origsite=primo>
- Whelan-Berry, K. S., & Somerville, K. A. (2010). Linking Change Drivers and the Organizational Change Process: A Review and Synthesis. *Journal of Change Management*, 10(2), 175–193. <https://doi.org/10.1080/14697011003795651>
- Whitchurch, C., & Gordon, G. (2013). Reconciling flexible staffing models with inclusive governance and management. *Higher Education Quarterly*, 67(3), 234–255. <https://doi.org/10.1111/hequ.12013>
- Woods, P. (2016). Authority, power and distributed leadership. *Management in Education*, 30(4), 155–160. <https://doi.org/10.1177/0892020616665779>
- Woods, P. A., Bennett, N., Harvey, J. A., & Wise, C. (2004). Variabilities and Dualities in Distributed Leadership: Findings from a Systematic Literature Review. *Educational Management, Administration & Leadership*, 32(4), 439–457. <https://doi.org/10.1177/1741143204046497>
- Wu, Q., Cormican, K., & Chen, G. (2020). A Meta-Analysis of Shared Leadership: Antecedents, Consequences, and Moderators. *Journal of Leadership & Organizational Studies*, 27(1), 49–64. <https://doi.org/10.1177/1548051818820862>
- Yukl, G., & Mahsud, R. (2010). Why Flexible And Adaptive Leadership Is Essential. *Consulting Psychology Journal*, 62(2), 81–93. <https://doi.org/10.1037/a0019835>
- Yukl, G. (2010). Leadership in organizations (7th ed.). Prentice Hall.
- Zigarmi, D., & Roberts, T. P. (2017). A test of three basic assumptions of Situational Leadership® II Model and their implications for HRD practitioners. *European Journal*



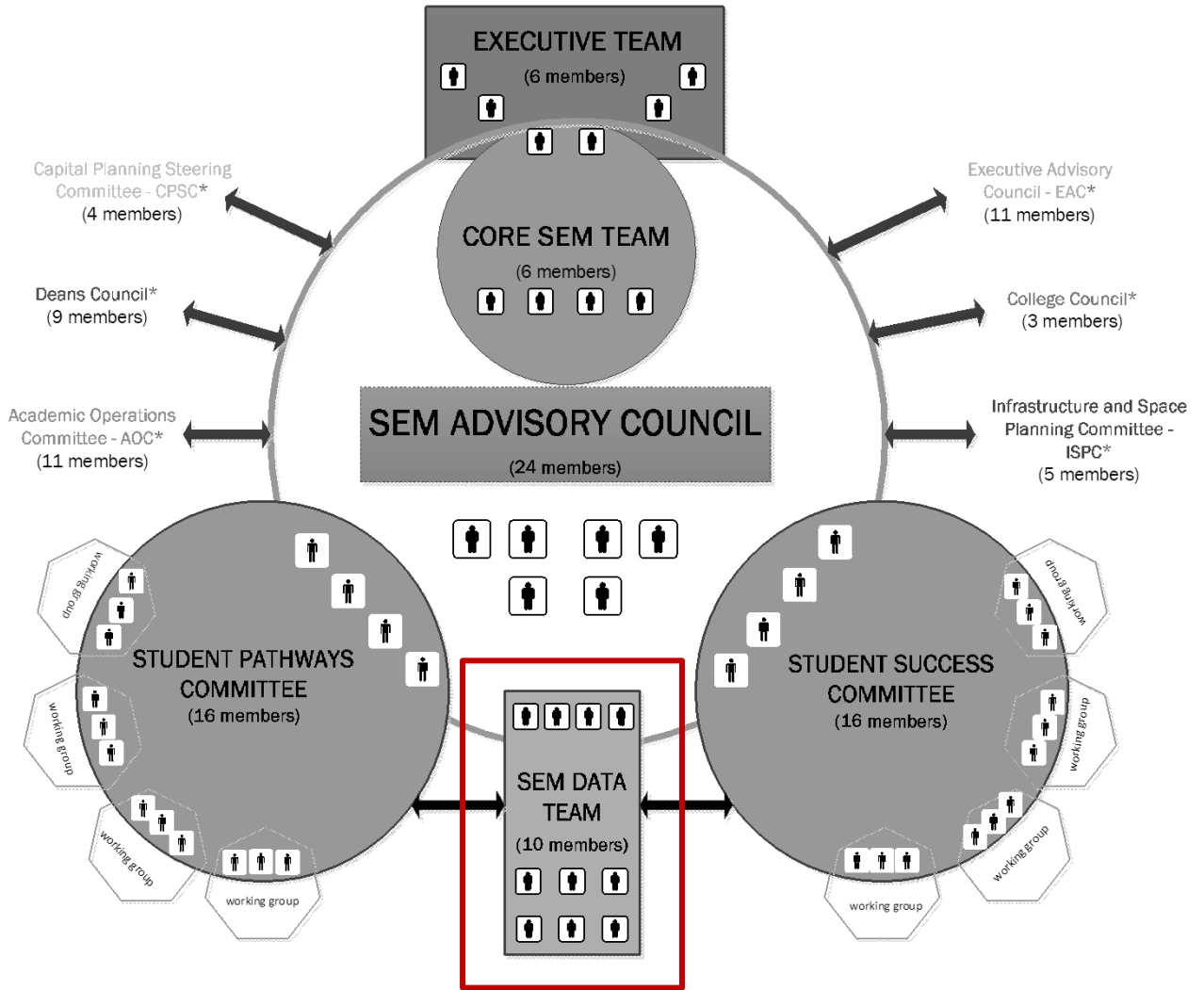
*of Training and Development*, 41(3), 241–260. <https://doi.org/10.1108/EJTD-05-2016-0035>

Ziskin, M. B., Hossler, D., Rabourn, K., Cekic, O., & Hwang, Y. (2014). *Outcomes Based Funding: Current Status, Promising Practices and Emerging Trends*. Higher Education Quality Council of Ontario. <https://heqco.ca/wp-content/uploads/2020/03/Outcomes-Based-Funding-ENG.pdf>

**Appendix A: Current SEM Governance Structure**

Leadership representation from academic, administrative and service areas

### Appendix B: Former SEM Governance Structure



### Appendix C: Implementation Plan

<b>Goals</b>	<b>Strategies</b>	<b>Objectives</b>	<b>Tactics</b>
1. Demonstrate the need for change to key stakeholders in the effort to build a sense of urgency, buy-in and guiding coalition.	identify change sponsors and establish a guiding coalition	1.1 assess stakeholder readiness	conduct stakeholder analysis
	develop a vision for change	1.2 enhance understanding of the corridor-funding model and SMA3 performance-based funding and metrics	presentations at SEM committees
		1.3 engage guiding coalition in formulating and endorsing the vision for change	one-on-one consultations with SEM Team and TUG (Innovators)
	leverage existing governance structures to articulate the gap between the current and the desired state and share the vision for the change	1.4 enhance understanding of the need and vision for change	presentations at SEM committees presentations at operational committees / meetings (Early Adopters and Early Majority)
2. Make TS content a trusted and effective mechanism for data-driven decision-making in support of the achievement of college's strategic priorities related to enrollment targets and SMA3 metrics.	ensure TS and TC governance is consistent with the college's Data Governance Policy	2.1 timely access to the right data and content by the right stakeholders	develop TS and TC governance framework
			apply classification system to TS content
			ensure data driving decisions is accurate, up-to-date, and timely
	ensure the content meets the needs of decision-makers by engaging key stakeholders in the process	2.2 increase stakeholder understanding of roles and responsibilities related to TS and TC	develop onboarding educational materials for stakeholders including presentation and fact sheet
			keep current and readily accessible definitions of data and data sources
			conduct needs and satisfaction assessment survey with TS users
		2.3 enhance and update TS content	consult key decision-makers in the effort to inform TS content enhancements and updates
			review i and ii to determine gaps in TS content
		2.4 interface is user-friendly	redesign TS model through self-assessment, feedback

remove barriers to access, engage with and use TS content		and input from key stakeholder groups and review of best practices
		develop a protocol for new TS content
	2.5 reduce ad hoc data and information requests	create an inventory of folders with dashboards available including questions they address
		socialize the inventory through relevant governance structure
		embed the inventory into all-things Tableau centralized location
	2.6 increase direct engagement among TS users	develop a training module for viewing and interacting with TS content
		develop a video to accompany each dashboard (content to include purpose, overview of features and data, questions that can be answered)
		develop a one-page handout of key insights
		identify and monitor direct engagement metrics
	2.7 increase indirect engagement among TS users	develop a training module for key features like views, alerts, metrics, downloads and sharing TS content
		develop a one-page best practice for maximizing viewer experience (how to make the most of each dashboard and stay up-to-date on changes)
		identify and monitor indirect engagement metrics
	2.8 increase % of TS users accessing TS content	develop how-to resources (step-by-step guide and training videos for logging in and navigating the TS
		create a centralized location for all-things Tableae
	launch Tableau intranet	

3. Build a community by providing training, education, and engagement opportunities.	develop a community building strategy (pilot Data Fellows Program)	3.1 engage guiding coalition and TS users in informing community building strategy	conduct a survey to gather input and interest
			engage in small group consultations
			endorsement from guiding coalition
		3.2 improve TS user (viewer) ability to engage with and use available server content	develop a learning plan for TS user role (viewer)
		develop training materials for TS user role (viewer)	
	implement a community building strategy (pilot Data Fellows Program)	3.3 assess stakeholder change readiness	identify Early Adopters and Early Majority;
			identify Late Adopters and Late Majority
			determine appropriate approaches to engage Early Adopters and Early Majority stakeholders
		3.4 increase community engagement and collaboration	consider appropriate approaches to engage late adopters and late majority stakeholders
		develop a TUG (meets monthly) to promote collaboration across functions (all users)	
	develop a TS champions group to share ideas (Data Fellows)		
	launch lunch n' learn meetings focused on building new skills (all users)		
	establish Data Days to share successes (all users)		

### Appendix D: Monitoring and Evaluation Plan

<b>Chosen Solution</b>	<b>Monitoring and Evaluation Examples</b>	<b>Frequency</b>	<b>Accountability</b>
<p>Priority 1: Group-level capacity building strategy</p>	<p>Input from consultation sessions with key institutional partners (HROE and CTL).</p> <p>Feedback from the pilot group (2-day pilot).</p> <p>Data collection from workshops including but not limited to attendance logs, workshop feedback, and observation logs. Data collection following the program completion including but not limited to assessment of learning and program outcomes through case study project and exit survey, completion rates, and graduates/alumni behavior following the 'program' completion.</p>	<p>This would take place once; however, the program would go through evaluation annually.</p> <p>Once. Data collected for each workshop.</p> <p>Data collected for each workshop.</p> <p>Annually.</p>	<p>Associate Director, IR</p> <p>Associated Director, IR Workshop facilitator(s)</p> <p>Workshop facilitator(s)</p> <p>IR unit</p>
<p>Priority 2: Make TS content a trusted and effective mechanism for DDDM</p>	<p>Collection of survey data from TS users to assess their needs and experiences with the existing tools and resources as well as perceptions of their DDDM abilities.</p> <p>TS user direct and indirect engagement baseline.</p> <p>TS content engagement.</p> <p>Feedback from TUG leads, change sponsors and key institutional partners including, PPDR and RO.</p>	<p>Before the announcement of changes about to take place. This would take place once.</p> <p>This would take place before the announcement of changes and would continue throughout and beyond the change implementation.</p> <p>During the development and refinement of the tools and resources.</p>	<p>Associate Director, IR</p> <p>IR unit</p> <p>Associate Director, IR Guiding Coalition</p>

	<p>Satisfaction survey 6-months post redeployment.</p> <p>Monitoring relationship between TS and TC engagement and effective DDDM as measured by achievement of outcomes specific to SEM-related activity and informed by available tools and resources.</p>	<p>Annually.</p> <p>Annually.</p>	<p>Associate Director, IR</p> <p>IR unit</p>
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