AN EXPLORATION OF THE APPLICATION
OF LEAN CONTINUOUS IMPROVEMENT IN HIGHER EDUCATION

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Abstract

The purpose of this single instrumental case study was to understand the conditions and environments that prove successful in the application of Lean Continuous Improvement to an entire university. The perspectives of twelve staff and faculty from a public university in Maine were explored. The findings produced four themes. The Leadership theme revealed three things: the importance of campus leadership demonstrating a strategic vision and commitment to campus, the need to communicate clearly, and the need to exhibit clear value for students and employees through training and support opportunities. The Campus Involvement theme showed the campus members’ engagement on campus and with the broader community; there was an emphasis on employee engagement and working toward shared goals. The Perseverance theme illustrated the resolve of faculty and staff; despite policy and process barriers and reduced staffing levels, respondents revealed stories about hope and belief things were getting better. The fourth and final theme, Trust, indicated trust was required to build relationships, communicate with honesty, and act empowered in their work. The findings of this study suggest that administrators who want to implement LCI across an entire university could benefit from a) understanding the culture, b) applying LCI where there is a culture of committed and visionary leadership, communication, value for students and employees, perseverance, and trust, and c) if necessary, seeking to change the culture before applying LCI.

Keywords: continuous improvement; cultural readiness factors; higher education; leadership; Lean; organizational change; organizational culture.
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Dedication Page

I am dedicating this research study to four irreplaceable people:

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Chapter One: Introduction to the Study

Lean Continuous Improvement (LCI) is a management philosophy that encompasses a series of principles, methods, and tools; when successfully applied it helps organizations improve efficiency, save money, and increase value for their customers. The success of Lean Continuous Improvement (referred to in the literature as Lean Production or Lean) has been well documented in manufacturing since Krafcik’s seminal article on Lean Production in 1988. Academics have studied the application of Lean in higher education since Dahlgaard and Østergaard’s first reference in 2000. However, application is often limited to the department level, particularly in the United States (Balzer, Francis, Krehbiel, & Shea, 2016; Radnor & Bucci, 2011). The purpose of this case study is to understand the conditions and environments that are present during the institution-wide application of Lean Continuous Improvement at the University of Maine at Presque Isle (UMPI). UMPI is one university in the University of Maine System (UMS), a System that prefers to use the term Lean Continuous Improvement instead of Lean. Data from this research may inform the practices of college and university administrators who seek to improve experiences for students and employees while achieving efficiencies. This study explored the research problem using the qualitative case study design techniques of Yin (2009).

Chapter one begins with a brief overview of the research on Lean Continuous Improvement to provide context and background to the study. The rationale and significance are discussed next, making connections to potential beneficiaries of the work. The problem statement, purpose statement, and research questions are presented to focus and ground the study. Finally, the theoretical framework that serves as a lens for the study is introduced and explained.
Context and Background

Administrators at universities and colleges around the world are discovering that 30 – 70% or more of time spent serving students is wasted; in other words, it is time employees spend working on things that do not create value for the students (Balzer, 2010; Douglas, Antony, & Douglas, 2015; Flinchbaugh & Carlino, 2006)

Waste does not exist in higher education alone, of course; 80% of gross domestic product in the United States is in the service industry, yet service is much less productive than manufacturing (Suárez-Barraza, Smith, & Dahlgaard-Park, 2012). This also does not mean that university employees or faculty are intentionally misusing time, resources, or not working as efficiently as they can; it is quite the opposite. Higher education professionals and faculty often exhibit a great commitment to their work, sometimes to the detriment of their personal life, yet some are so frustrated by institutional policies and practices that they change institutions or leave higher education all together (Baker-Tate, 2010; Johnsrud & Rosser, 2002; Rosser, 2004).

Unfortunately, despite employees’ hard work and good intentions, the services students receive are coming up short. Students and their families on the other side of the service counter report dissatisfaction with offices like student billing, registrar, financial aid, and their academic colleges. Students are upset by long lines, lengthy waits to receive transcripts, or delayed tuition reimbursements. Services like admission decisions, financial aid packaging, grade changes, course waivers, approval to study abroad, and enrollment verification can each take weeks or months to process (Balzer, 2010; Emiliani, 2005; Francis, 2014; F. Miller, personal communication, July 18, 2015).
The good news is that waste – sometimes caused by unnecessary delays or work processes – can often be identified and removed. The following two cases are examples where universities discovered and removed waste:

Students at the University of St. Andrews in Scotland who required a letter confirming their enrollment status used to wait between seven and ten days before they could return and pick up the letter from Old Union Reception and Registry (OUR). Staff from OUR improved the process and decreased the time students had to wait. Now, students who go to OUR receive their letters in two minutes, and some students do not need to come in at all because the staff created a way for them to access the information online (F. Miller, personal communication, July 18, 2015; http://standrewslean.com/student-status-confirmation-letters/).

Candidates applying for jobs through the University of Maine’s Office of Human Resources (HR) used to have an extensive wait to learn whether they were hired, and some candidates withdrew their applications to accept jobs elsewhere. Until 2012 the process of hiring an employee took a minimum of 91 days, and could take as many as 247 days. Now the hiring cycle lasts between 5 and 50 days, making more than $650,000 of personnel time each year available for other projects (Jenkins & Stevens, 2015).

The method used by both the University of St. Andrews’ OUR and the University of Maine’s HR department in order to improve their processes is known as Lean Continuous Improvement (LCI). The following paragraphs will describe how LCI began as a philosophy within the Toyota Motor Company and how it eventually moved into higher education.

In 1950 the Toyota Motor Company had problems. The Second World War had diverted its efforts, and following the war the Japanese carmaker found itself short of resources and
capital. Although it had been in business since 1937, it had only produced 2,685 automobiles. By contrast, Ford’s Rouge plant in Detroit, Michigan was producing 7,000 cars per day. In 1949, falling sales and a long strike resulted in a layoff of a large percentage of the Toyota workforce. In the spring of 1950, engineer Eiji Toyoda spent three months in Detroit observing and detailing every nuance of the Ford plant, hoping to replicate Ford’s success in implementing mass production back home in Nagoya, Japan (Krafcik, 1988; Liker, 2014; Womack, Jones, & Roos, 1990).

After consideration however, Toyoda and his plant manager Taiichi Ohno concluded that Ford’s mass production methods would not make sense for Toyota. The Nagoya plant simply did not have the needed space or access to modern technology. Instead, Ohno discovered it was less expensive to create parts in small batches, which had two unexpected benefits: the company saved on costs related to keeping inventory, and problems were discovered and fixed more quickly than at plants like Ford. These important discoveries and the managers’ intense respect for, and empowerment of, its workforce was the beginning of efficient business practices that were later referred to as Lean Production (Krafcik, 1988; Womack, Jones, & Roos, 1990).

For the next ten years, Toyoda and Ohno developed the principles that became indispensable to Toyota. In 1988 John Krafcik, a graduate student in MIT’s Sloan School of Management, wrote the seminal article on Lean Production. He coined the efficient practices and philosophies of Toyota as *Lean Production* because Toyota used half of the space, tools, engineering hours, inventory, and human effort as in mass production. In the article, he also recognized the correlation of plant performance with culture (Krafcik, 1988; Womack, Jones, & Roos, 1990). In 2000, Dahlgaard & Østergaard wrote a chapter in *The Best of Quality: Targets, Improvements, and Systems* that linked LCI with success in higher education, and in 2010,
William Balzer published the first book to detail LCI’s effectiveness in higher education. These publications inspired some university administrators to attempt LCI, with intermittent success.

“Lean… define(s) the value of the process from the perspective of the beneficiaries of the process” (Balzer, 2010, p. 13); in higher education the beneficiaries may be students, but they may also be other internal or external customers. The methods of LCI include mapping the process from beginning to end, so it is easier to see where there is value is and where there is not. Anything the user does not value is considered waste (Flinchbaugh & Carlino, 2006; Womack and Jones, 2003). “Lean… is simply not doing things that don’t really matter” (Lay, 2013, p. 19).

In the case of the students at St. Andrews, the staff of the OUR asked what it was that students valued; what did they need? The students valued a timely and accurate letter, and the staff created a process that would do that by eliminating unnecessary steps (F. Miller, personal communication, July 18, 2015). In the case of the University of Maine’s hiring process, the Human Resources staff and appropriate leadership determined that waiting for redundant signatures was wasting time and preventing them from meeting their customers’ needs – in this case the departments who needed new employees (Jenkins & Stevens, 2015).

This study built on prior research by seeking to understand the conditions and environments that prove successful in the institution-wide application of LCI in higher education. The next section will provide the rationale and significance for doing so.

Rationale and Significance

Successfully implementing LCI can transform work processes by eliminating outdated and frustrating procedures. Doing so in higher education directly benefits students and the faculty and staffs who support them, allows institutions to save money, and could eventually reduce tuition costs. LCI is commonly implemented in small clusters, but application across the
whole organization is more difficult. Up to seven out of ten lean projects fail, regardless of industry (Ahmed, 2013; Balzer, 2010; McLean, Antony, & Dahlgaard, 2015).

There is less research on LCI in higher education than there is for manufacturing (50,593 peer reviewed articles compared to 122,663 in a June 2017 query through Scholar OneSearch), but that is not surprising. The term Lean Production was coined in 1990, which spurred its application in manufacturing around the world (Womack & Jones, 2003; Womack, Jones, & Roos, 1990). It was not until Dahlgaard and Østergaard published a chapter in Sinha’s book, *The Best of Quality: Targets, Improvements, and Systems* (2000), that Lean Production was written about as an approach to improvement in higher education. A 2003 article by Comm and Mathaisel and, later, the first book on Lean in higher education by Balzer in 2010 prompted wider awareness of this approach. Research related to LCI in higher education to date is primarily focused on individual process improvements, or is theoretical in purpose. There are a small number of empirical studies researching Lean’s widespread application in universities; one such study was focused on sustainability (not implementation), is quantitative, and is thirteen years old (Comm & Mathaisel, 2005). Two other articles share overviews of process and structure followed by institutions of higher education, but the articles do not explore the effectiveness of the models (Cristina & Felicia, 2012; Paris, 2007). In 2015, King Abdullah University of Science and Technology (KAUST) took part in one of the largest implementations of Lean in higher education (Svensson, Antony, Ba-Essa, Bakhsh, & Al bliwi, 2015). The study utilized Lean Six Sigma, which is an approach that includes the methods of Six Sigma. The research focused solely on graduate education and research at a university in Saudi Arabia. To date there does not appear to be a study focused on understanding the conditions that lead to institution-wide application of LCI in undergraduate education in the United States.
Academia has no choice but to adopt a strategy for effective change; barring intervention, many institutions will cease to exist. This threat is real; as many as one thousand American colleges are at risk of closing or merging (Selingo, 2013). Publishers like The New York Times, Time, The Chronicle of Higher Education, and The Economist regularly publish articles prophesizing desperate times ahead for institutions not capable of innovation and quick results like those typically only seen in the world of business (Krehbiel, Ryan, & Miller, 2015; Martin, Samels, & Associates, 2017; Rosen, 2011).

College education is more essential than ever before, both in terms of opportunities for individuals and for American prosperity (AAC&U, 2007). Colleges and universities are the cornerstone of economic prosperity in the United States, yet American students of today confront obstacles “from skyrocketing tuition prices to predatory student lending tactics,” (Rep. George Miller, as cited in Marklein, 2008). President Barack Obama addressed the issue six years ago in his State of the Union address when he said “…let me put colleges and universities on notice: If you can’t stop tuition from going up, the funding you get from taxpayers will go down” (January 24, 2012). States are no longer offsetting tuition at the level they used to; support for funding in higher education is now at its lowest point since 1965. Students are taking up the slack by assuming more loans, but now student debt has passed the trillion dollars mark. Accumulating debt to pay for rising tuition is a risk; 400,000 students drop out every year, and those who drop out will earn an estimated 67 cents for every dollar earned by their former classmates who earn degrees (Joch, 2011; Selingo, 2013).

Several factors make innovation necessary, but the rate of change is slow (Denneen & Dretler, 2012). One of the largest barriers to change is that academics seem to think things will return to the way they were (Selingo, 2013). Leading change is challenging in any organization,
and most change initiatives fail (Senge, et al., 1999). In higher education, however, it is considered more difficult because higher education is affected by a lack of accountability and opposition to change (Denneen & Dretler, 2012). The good news might be that higher education is also in crisis, because nothing less will spur administrators, faculty, and staff into action. Academia is not likely to take on the changes necessary to survive without a change in external conditions (Rosen, 2011).

The University of Maine System (UMS) is one such system in need of intervention, and it will directly and positively benefit from this research. UMS is under great financial and political pressure to improve its processes and reduce waste. “Maine can succeed only to the degree that UMS succeeds,” (Chancellor James Page, February 6, 2017). As of 2013, the minimum fiscal gap in 2019 was expected to be $90 million. Substantial initiatives (including not filling vacancies and laying off existing positions) have decreased that expected gap to as little as $7.2 million. Still, UMS is not expected to be in the black until 2022, infrastructure needs substantial help, and healthcare costs are expected to rise (Low, 2017; Wyke, 2013).

The University of Maine System was created by the Maine State Legislature in 1968 in order to provide oversight for the state’s seven campuses (http://www.maine.edu/about-the-system/). There are seven campuses spread over 330 miles, and as of the fall of 2016 they were the homes to only 4,171 full-time employees and 29,465 students (http://www.maine.edu/about-the-system/ums-data-book/). Until recently, the system’s individual campuses acted autonomously, recruiting students, staff, and faculty in ways that encouraged competition between sister campuses. Academic programs were created within colleges and individual universities without a process for checking offerings at the other sites. A recent Chairman of the UMS Board of Trustees, Sam Collins, said “that’s fine in a growing market, but the dynamics
have changed, and we’re in a demographic winter. (Maine’s campuses) can’t be efficient if we all have the same offerings.” Collins’ “demographic winter” refers to the fact that the state’s population of young adults (15-24) is declining; it is expected to decrease 19.5 percent between 2010 and 2020. Of the state’s 2013 high-school graduates who could have enrolled in college, only 62 percent of them did; 28 percent of those chose to do so out-of-state, (Korn, 2015). The status quo will no longer work for the UMS; administrators and staff must work to reduce waste, and improve processes for students, staff, and faculty.

This research took place at the University of Maine at Presque Isle (UMPI), which is one of the state’s two northern campuses. The campus is located one hour from both the University of Maine at Fort Kent and the Canadian border. UMPI is UMS’ second smallest campus in terms of student population, with 1,326 undergraduate students, or 4.5% of the entire UMS student population, as of the fall of 2016. This total is an 11% decrease in four years (http://staticweb.maine.edu/wp-content/uploads/2016/11/Fall-2016-Enrollment-Report1.pdf?565a1d. The total employee headcount has decreased, too. In October of 2008 there were a total of 192 full-time equivalent staff, faculty, and administrators; by October of 2016 that number had decreased to 138 (http://staticweb.maine.edu/wp-content/uploads/2017/02/Oct-2016-Headcount.pdf?565a1d).

The University of Maine at Presque Isle appears to be an ideal location for exploring LCI in higher education. First, the university has shown it can be innovative and nimble. In recent years, the faculty and administrators implemented a new proficiency-based curriculum to meet the expectations of graduates of Maine’s high schools who are operating under their own new curricula (http://www.maine.gov/doe/proficiency/). Second, the population is small in relation to the rest of UMS, which made it easier to communicate. Third, the campus benefits from the support and involvement of top leaders and managers. Dr. Raymond Rice is UMPI’s President
and Chief Academic Officer, and he leads a small team of senior leaders who recently made a commitment to continued process improvements. The group is keen to make swift and effective process improvements, and to use the improvements as a basis for training staff and helping to create a culture of Lean.

UMS is not alone in its fiscal and image challenges. “Our campus spent two decades hiring people to solve problems or deliver new solutions,” said Frank Yeary, vice chancellor at UC Berkeley. “We threw people at problems, rather than technology” (as cited in Selingo, 2013, p. 27). Universities created specialty and support programs for years, but now can no longer afford them. The move may have been unwise, as some institutions now feel the professionals and programs actually cheated their students out of opportunities to survive via their own problem solving (2013). Institutions of higher education have the burden of proving they are spending money wisely (Grove, 2014).

The truth is, while universities in Maine only have to worry about saving themselves, this is a national crisis and untold numbers of American universities will benefit from this work. Further, while Lean is a very new concept in American education, it is used more broadly in Australia, Great Britain, and institutions in Europe. The results of this research can ultimately influence the ability of universities to increase efficiencies and improve employee retention on a global level.

The benefits of exploring the factors that lead to successful implementation of Lean will not be limited to higher education. This work will have the ability to affect the way all industries think about supporting their employees in the improvement of processes. Public and private educators of all grade levels, businesses who already use Lean (or who want to), and health care, which has a large Lean presence, are the most likely to benefit from this research.
Research Problem and Research Question

Researchers have studied the application of LCI in manufacturing since 1988, and a few academics have done so in higher education since 2003. However, scholars know too little about the effectiveness of applying LCI to higher education (Bhasin, 2012a; Doman, 2011). The problem of practice of this study is to better understand the factors that are either advantageous or limiting when applying LCI to an entire university. The purpose of this qualitative case study is to understand the conditions and environments that prove successful in the application of LCI to an entire college or university.

Research Question: Under what circumstances or settings are the methods of LCI applicable to an entire university?

Sub-Questions:

1. What factors or characteristics are significant in colleges or universities that adopt the use of LCI?

2. What challenges or obstacles might universities confront when applying LCI to their institution?

Definitions of Key Terminology

5-S: 5S is a systematic process of workplace organization. The five S’s are Sort, Set in order, Shine, Systematize, and Sustain. The overall idea behind 5S is that there is "a place for everything and everything goes in its place."

Customer: Customers are the end users or receivers of the service/output of the process. In higher education, the customers may be students, but also may be staff, faculty, or external constituents.
**Lean Production:** Lean Production is a term coined in 1988 by John Krafcik to describe the efficient business practices and philosophy of Toyota. The term was made popular in Womack, Jones, & Roos’ 1990 book *The Machine that Changed the World: How Lean Production Revolutionized the Global Car Wars*. Now the terms Lean and Lean Production signify a philosophy of continuous improvement, including a series of principles, methods, and tools that, when successfully applied, help organizations increase efficiency, save money, and increase value for their customers. The two principles of Lean are *continuous improvement* and *respect for people*.

**Lean Continuous Improvement:** Lean Continuous Improvement (LCI) is a term for Lean Production that is used in the University of Maine System. Despite its name, teams learn through training and process improvements LCI represents both of Lean’s principles: *continuous improvement* and *respect for people*.

**Process:** A process is the series of steps that are used to create a product. In higher education, the product might be an admitted student, a registered student, an approved curriculum, or a paid employee. In order to better understand the process and identify opportunities to improve it, a Lean Process Improvement Team makes the process visible using a Lean tool, like Value Stream Mapping (VSM).

**Process Improvement Team:** A Lean Process Improvement Team is generally made up of the staff who regularly do the work, along with a sample of customers and other key stakeholders. These are the people who work to make the process visible and recommend action for improvement.
Sponsor: The sponsor is the person responsible for getting a Process Improvement Team to ‘yes’. He or she has overall authority for the process.

Value Stream Mapping (VSM): Value Stream Mapping is one of the tools used by Lean Process Improvement Teams to make the work visible. The employees who do the work come together and map out the “Current State” of work, so they might identify redundancies, gaps, and other opportunities to improve. Teams finish the process by creating and implementing a Future State of work.

Waste: There are three types of waste described in the LCI literature. They all signify resources invested in a process that the customer or end user does not care about. The goal in a Lean process improvement is to increase value for the customer by reducing or eliminating waste.

The following section of this chapter includes a description and discussion of Schein’s Model of Organizational Culture, which served as the theoretical lens for this study.

Theoretical Framework

Edgar Schein’s Model of Organizational Culture served as the theoretical framework for exploring the factors that either support or serve as obstacles in applying LCI in higher education. Organizational cultures are like other cultures, which progress as groups of individuals find meaning in, and adapt with, their worlds (Trice & Beyer, 1993). Culture is all around and within us; it creates a mindset, and both inspires and limits the conduct of individuals in a group. Meyerson said culture is a “code word for the subjective side of organizational life” (1991, p. 256). Edgar Schein suggests that culture is an outcome of social learning and formally defines the culture of a group “as a pattern of shared basic assumptions learned by a group as it solved its problems of external adaptation and internal integration, which has worked well
enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems” (2010, p. 17-18). As we seek to understand the undercurrents of culture, we will better understand behavior of individuals, why groups can be dramatically different, and why organizational change can be so difficult to accomplish.

Individual process improvements are easier to achieve than widespread integration, and the disparity is attributed to the culture of the organization (Bhasin, 2012b; Clark, Silvester, & Knowles, 2013; Fliedner & Mathieson, 2009; Rees, 2014). An organization’s culture can affect performance and enhance or limit change (Atkinson, 2010; Bortolotti, Boscari, & Danese, 2015). Lean implementations in higher education (or other settings) will only succeed with an understanding of the culture (Francis, 2014). An organization can experience a mismatch between the context of the organization and the impending innovation, or otherwise be unready for the intervention (Hariharan, 2006). In any given initiative, some employees will cooperate while others will not, (Lam & Robertson, 2012). The secret to realizing LCI throughout an organization lies within its culture (Bortolotti, Boscari, & Danese, 2015; Zu, Robbins, & Fredendall, 2010). Organizational readiness to initiate a change is a reflection of the members’ shared resolve to implement a change and their ability to do so (Weiner, 2009). Cultural readiness is required in order to successfully introduce, develop, and sustain Lean within a higher education setting. Following a review of the literature revealing cultural readiness factors required for the implementation of Lean in higher education, Jiju Antony (2014) stated the need for empirical studies in institutions of higher education in order to determine the cultural readiness factors for LCI.
Schein is an oft-cited theorist within higher education, particularly regarding issues of culture and a culture’s response to change (Francis, 2014; Kezar & Eckal, 2002; Rich, 2011; Tierney, 1988). Schein’s model is often depicted like an iceberg, with some elements easily identifiable (like ice above the water), and others that are much harder to find, far below the surface and deep within the culture. Each level of culture represents a degree to “which the cultural phenomenon is visible to the observer” (Schein, 2010, p. 23). For these reasons, the model will be helpful as it is used to explore and analyze both surface level and deep learnings about one university’s culture.

**Schein’s Model of Organizational Culture**

Schein’s levels are called artifacts, espoused beliefs and values, and basic underlying assumptions (Figure 1.1). Each level of culture represents a degree to “which the cultural phenomenon is visible to the observer” (Schein, 2010, p. 23). The first level is the most obvious to detect because artifacts are observable at the surface level; they are seen and heard when a person first enters a group. They can be seen as images on websites, logos on letterhead, vision statements printed on cards or walls, heard as a language, and felt as an environment – is it cold and sterile, or is it warm and homey? Schein cautions it is unwise to infer deep assumptions from surface-level artifacts alone because each observer will naturally apply his or her own meaning. Rather, it is important to delve deeper into the organization.

Schein refers to the second level as espoused beliefs and values, which reflect what members of the organization expressly care about. This level includes moral rules, and is influenced by leaders’ aspirations and ideals. The beliefs and values are clearly shared, including to newcomers who will use the information to guide behavior, and thus find a fit in the organization. The organization’s beliefs and values likely include messages and perceptions
shared by administrators for the purpose of guiding decisions, but they can also represent future aspirations, or the philosophy of the organization. Schein’s warning to those who analyze at this level is that because espoused beliefs and values can manifest in varied ways, they can also contradict each other. Further, these shared beliefs and values do not explain a large range of behavior. In order to achieve a truer level of understanding and predict behavior, one must understand an organization’s basic underlying assumptions (Schein, 2010).

Figure 1.1: The Three Levels of Culture

1. Artifacts
   - Visible and feelable structures and processes
   - Observed behavior
     - Difficult to decipher
2. Espoused Beliefs and Values
   - Ideals, goals, values, aspirations
   - Ideologies
   - Rationalizations
     - May nor no be congruent with behavior and other artifacts
3. Basic Underlying Assumptions
   - Unconscious, taken-for-granted beliefs and values
     - Determine behavior, perception, thought, and feeling

Figure 1.1: The three levels of culture by E.H. Schein, 2010, *Organizational Culture and Leadership* (4th ed.), p. 24.

If decisions based upon beliefs and values consistently lead to success, then over time the members’ beliefs and values can transform into the third, often unconscious, level – basic underlying assumptions. These assumptions are shared so freely that there are rarely distinctions
among members of a group. Once assumptions are entrenched, it is difficult to debate or change them. The reason is individuals need certainty, or what Schein refers to as cognitive stability, to the degree that they will often dismiss ideas that would cause them to confront their assumptions. Members share these assumptions; they provide members with a sense of identity and teach them how to behave (Schein, 2010).

The purpose of this qualitative case study is to understand the conditions and environments that prove successful in the application of LCI to an entire college or university. Schein’s model was used as a lens for formally exploring culture at UMPI. Characteristics about the culture and relevant subcultures were discovered using Yin’s case study research design, which is relevant for research questions that seek to contribute to individual, group, and organizational phenomena (2009). Yin recommends dedication to rigorous and formal procedures. The layers of Schein’s model were followed in creating a careful research design that thoroughly explored the culture at UMPI through all three levels. Artifacts and espoused beliefs and values were explored using document examination and a description of physical space, and basic underlying assumptions were explored through in-depth interviews.

**Critics of the Theory**

Edgar Schein is one of the earliest organizational theorists having written about organizational socialization as early as 1968. Schein’s model of organizational culture (1984) is one of the most cited and regarded models of culture (Dauber, Fink, & Yolles, 2012; Teehankee, 1993). That said, it is not without critics. Rather than negate its attributes wholly, some critics chose to build on it (2012; Hatch, 1993). Denison did not dispute the model, but did suggest that Schein and other cultural researchers should have elaborated to reference climate in relation to their work. The following paragraphs will highlight the critics’ responses to Schein’s model.
In 1993 Hatch built on the work of Schein and symbolic-interpretivists like Alvesson, Berger and Luckmann, Pettigrew, and Smirich to offer a new model she called Cultural Dynamics. She said her model attended to elements overlooked by Schein, namely the interpretation of symbols and symbolic behavior. She made two changes to Schein’s model: (1) she introduced symbols as one of the primary elements, and (2) she deemphasized the elements (values, artifacts, symbols, and assumptions) to show the importance of the relationships between them (realization, symbolization, interpretation, and manifestation).

In 2012, Dauber, Fink & Yolles responded to claims by Smith and Lewis (2011) and Ployhart and Vandenberg (2010) that existing theories did not capture organizational dynamics and change. They conducted an examination of organizational models, and chose to build on the work of Schein (2010) and Hatch and Cunliffe (2006). They stated Schein’s model was simple and abstract and explained cultural dynamics, but it did not provide enough perspective on culture in organizations (2012). Dauber, et al. reconfigured the work of Schein and Hatch to build a multilayered and dynamic model called the Configuration Model of Organizational Culture.

In 1996 Denison, concerned about muddled lines between culture and climate, noted that Schein was among the researchers who did not reference climate when talking about culture. He said that culture was viewed as something studied with qualitative methods to understand the evolution of social systems over time, and while climate should be focused on the influence that systems have on both individuals and groups within organizations. Denison stated that the debate over the similarities and differences of climate and culture was not settled. He claimed that culture and climate offer different perspectives on organizational environments and are concerned with distinct phenomena (1996).
Over the many years that Schein’s model has been in use, some critics have added to it or commented on items for him to consider. None of them, however, appeared to have concerns with the foundation of his model.

**Rationale for using Schein’s Theory**

Schein’s model of Organizational Culture served as an appropriate frame for this case analysis research because the model describes three levels of culture through which one can analyze organizations. Schein’s levels start with physical or otherwise obvious signs of an organization’s culture, and plunge through its adopted beliefs and values, deep into an organization’s unconscious norms. It was important to consider the levels of culture at the University of Maine at Presque Isle, as framed by Schein, in order to ascertain the cultural readiness factors at the institution.

**Application of Schein’s Theory**

Schein’s three levels served as practical and revealing guides into the culture at UMPI. The ultimate goal was to explore the culture in search of evidence of the conditions and environments that prove successful in the application of LCI to a college or university. The levels served as practical guides in three ways; by examining key documents and materials, examining espoused beliefs and values, and via semi-structured interviews.

**Conclusion**

This research was a case study of the University of Maine at Presque Isle, one of the seven campuses of the University of Maine System. The case study approach followed design methods as outlined by Robert K. Yin’s *Case Study Research: Design and Methods* (4th ed.), 2009. Schein’s model of Organizational Culture framed the research well, as the model’s three levels provide a thorough exploration of the culture at the institution. Institutional artifacts were
discovered in published documents like mission statements and through descriptions of the aesthetic nature and accessibility of physical structures. The researcher gleaned espoused beliefs and values from exploring documents related to strategic planning and organizational charts. Finally, individual interviews offered perspectives about the culture’s basic underlying assumptions.

The research comes at an important time, given current challenges in higher education, the struggles within the University of Maine System, and the increasing reliance internationally on LCI in higher education. The cultural analysis of UMPI as it applies LCI will provide campuses with insight that may help them better understand their own challenges.

Chapter Two: Literature Review

Chapter One shared key literature for introducing the area of study, research problem, and significance of the study. This second chapter presents a thorough examination and review of the literature representing the history and current state of information central to the reason for this study. Context is provided regarding the state of higher education since the economic downturn of 2008, which resulted in the need to effectively improve structures, systems, and processes. Relevant research was identified and accessed via Northeastern University’s Scholar OneSearch and Google Scholar; key sources cited in books, articles, and doctoral dissertations found in databases such as ProQuest, ERIC, and Sage Journals. Key words for this research included *Lean continuous improvement, Lean production, Lean higher education, cultural readiness factors, and higher education*.

Higher education is adjusting to a new reality brought on in part by economic challenges and increased competition. Between 2000 and 2016, 47 colleges and universities closed; 37 of the
closures occurred between 2010 and 2013. In the next few years the rate of mergers will double (Krehbiel, Ryan, & Miller, 2015; Martin, Samels, & Associates, 2017; Selingo, 2013). Researchers have studied the application of LCI in manufacturing since 1988, and a few academics have done so in higher education since 2000. However, too little is known about the effectiveness of applying LCI to higher education (Balzer, Francis, Krehbiel, & Shea, 2016; Paris, 2007; Waterbury, 2011). The problem of practice of this study is to better understand the factors that are either advantageous or limiting when applying LCI to an entire university. The purpose of this qualitative case study is to understand the conditions and environments that may prove successful in the application of LCI to an entire college or university.

The following literature review provided a framework for exploring the institution-wide application of LCI in higher education through a critical examination of the research. The review is organized into three sections in support of the topic. First, it explores recent changes and challenges in higher education in the United States, particularly since the economic downturn of 2008. Second, it explains what LCI is, and details LCI’s role in improving processes in manufacturing. This section also establishes LCI’s success in individual pockets within higher education and explores the link between organizational culture and effective organizational change efforts. Finally, the review explores the cultural readiness factors that are either advantageous or limiting when applying LCI in manufacturing. In conclusion, the gaps in existing literature and consequences for practice were offered in support of the need for this case study: to understand the conditions and environments that prove successful in the application of LCI to an entire college or university.
Challenges in Higher Education in the United States

In order to advocate for this study, it was critical to understand the scope and significance of this work. In this case, to understand the changes in U. S. higher education, particularly since the economic downturn of 2008. The extent to which shifts in higher education are impacting the services students receive, and the ability of staff at universities and colleges to provide those services, is also explored.

Postsecondary education had not seen major change since the widespread implementation of general education prior to World War I (Crooks, 1979). Now after years of the status quo, innovation in education is a new norm: In 2011 Ohio University began offering degrees that students could complete in three years (Abromson, 2011); Massive Open Online Courses (MOOCs) allow hundreds of thousands of students at a time to learn for free from institutions like Stanford and the Massachusetts Institute of Technology, sparking a debate about the value of a degree (Lu, Laux, & Antony, 2017). Competition for students has increased, and online institutions make it easy for students who are geographically bound to earn degrees from institutions they previously would not have considered (2017; Selingo, 2015). Competition does not stop once the student has enrolled; The National Student Clearinghouse Research Center (July 6, 2015) found that 46% of all students who obtained a bachelor’s degree had enrolled at a 2-year institution at some point in the ten years prior to graduation, and 37.42% of students transfer. Some universities count on attracting high-school graduates with high-end housing and athletics facilities, but by 2020 42% of all college students will be at least 25 years of age (Rosen, 2011; Weise & Christensen, 2014).

The changes in student demographics, modalities (the way students are taught, whether online or face-to-face), pedagogies (teaching styles and methods), and curricula all mean that
administrators are not dealing with just one shift in one paradigm – they are trying to address challenges on multiple fronts (Abromson, 2011; Comm & Mathaisel, 2003). Higher education is in a period of turbulence and uncertainty; institutions are under increased pressure to prove they are making wise financial choices (Francis, 2014; Grove, 2014; Lu, Laux, & Antony, 2017; Newton, 2002). The public is losing tolerance for tuition increases and there is a gap between cost of tuition and value of the education. Universities and colleges are vying for dwindling state dollars and seeking competitive advantage in higher education (2003; Green 2003; Pavlović, Todorović, Mladenović, & Milosavljević, 2014; Vyas, & Campbell, 2015; Wiegel & Brouwer-Hadzialic, 2015).

Further, the states of Maine and Oregon are among those offering completely online – and completely free – academies for K-12 students (http://www.connections academy.com/maine-virtual-school; http://meva.k12.com/; http://start.k12.com). This means students are arriving at college with different expectations about access and flexibility than they did just a few years ago. Some of the flexibility they seek includes the ability to build their own degrees, sometimes from multiple colleges (AAC&U, 2007).

**Challenges since 2008**

The years from 1999-2009 are described as the “Lost Decade” in higher education; a time of organizational and economic shifts. The decade is called “lost” because there was still an abundance of high school graduates that should have given colleges and universities time to prepare for emerging challenges, but many did not. Those that did not prepare for more austere times have faced multiple years of fiscal gaps, program cuts, and layoffs (Korn, 2015; Selingo, 2013). Forty-three percent of universities and colleges are considered fiscally unsustainable, and
as many as one thousand will merge or close (2013; Lu, Laux, & Antony, 2017; Vyas & Campbell, 2015).

The current pattern of gaps in higher education finances is associated with larger economic issues since the past decade’s period of recession. Coffers at universities and colleges are highly dependent on federal and state appropriations, as well as federal student aid and other grants and awards from government-based agencies (Heck, Lam, & Thomas, 2014). Decreasing appropriations from states’ legislatures, reduced return on investments, and increasing costs associated with technology are leading to increased tuition and fees (Gordon & Fischer, 2011; Krehbiel, Ryan, & Miller, 2015; Lu, Laux, & Antony, 2017; Vyas & Campbell, 2015). Increased tuition is affecting the ability of students and their families to pay for college, the cost of which increased 1,500 – 2,400 percent in the past 40 years (Schumpeter, 2010). As of June 2017 The Federal Reserve confirms that the nation’s student loan debt is now 1.45 trillion, which is more than credit card debt and car loans (https://www.federalreserve.gov/releases/g19/current/default.htm).

Rising costs, increased scopes of mission, changing state economics, and unstable enrollments have created declining public trust, and a climate of uncertainty for administrators, staff and faculty (Bandyopadhyay & Lichtman, 2007; Comm & Mathaisel, 2003; Comm & Mathaisel, 2005; Francis, 2014; Wiegel & Brouwer-Hadzialic, 2015). There are new demands by legislatures, boards of trustees, and the public for postsecondary institutions to demonstrate their productivity. (Francis, 2014; Heck, Lam, & Thomas, 2014). Administrators are now aware that innovation and change is necessary but improving systems and structures in higher education is slow (Denneen & Dretler, 2012).
Impact on Services

For decades, colleges and universities created programs or hired staff and faculty in order to address problems. Now some institutions are forced to leave positions vacant or to cut programs and staff. They are still faced with problems, but with less people it is more difficult to manage the outdated and inefficient processes. As a result, the services students and employees receive are coming up short. Students, their families, and employees report dissatisfaction with offices like student billing, student records, human resources, financial aid, and their academic colleges. Students are upset by long lines, transcripts that take more than a week to receive, or delayed tuition reimbursements. Services like grade changes, payroll processes, course waivers, approval to study abroad, and enrollment verification each can take weeks or months to process (Balzer, 2010; Doman, 2011; Emiliani, 2005; Fisher, Barman, & Killingsworth, 2011; Sinha, & Mishra, 2013; Waterbury, 2011).

There is demand for improved services for internal and external customers, and when things go wrong frustrated students, family members, and employees tend to blame the bad service on another person or department (Sahney, Banwet & Karunes, 2004). However, most mid-level student services personnel are well-intentioned and feel a sense of calling to their work (Baker-Tate, 2010). There is a gap between the experience that employees intend to provide, and the one actually received. A prime reason service does not always match up with what the customer wants is that staff have a desire to help quickly and do not always understand what is needed. Also, staff are working hard, but they might not be doing what will actually create value for students. Rather than imagine there is a better way, those in higher education tend simply to try harder (Lundquist, 2012). The phenomena of understanding the underlying problem is called getting to the root cause (Dennis, 2007; Liker, 2014; Tapping, 2010). In some cases, staff assume
they know what students need. Also, as we get older, we are more conditioned to make decisions without enough information (Lay, 2013). This disconnect is not limited to services provided directly to students; it regularly occurs between employees in other departments and at all levels of the institution (Balzer, 2010).

There are other reasons for the frustrating processes in higher education, including the need for key leaders to influence change (Balzer, 2010). For example, most universities are hierarchical in nature, even though evidence supports driving decision making authority as close the source as possible (Carlone & Webb, 2006; Lay, 2013; Liker, 2014). The unique culture of academia, including structures of administrative and faculty authority, make the pace of change slower than it should be. (Deneen & Dretler, 2012; Green, 2003; Hines & Lethbridge, 2008; Koch, 2003; Quinn, Lemay, Larsen, & Johnson, 2009; Waterbury, 2011).

**Conclusion**

This body of research highlights the changes and challenges in higher education, particularly since the economic downturn of 2008. Researchers in this area find that administrators in higher education operate in a world that is vastly different than it was a decade ago (Delbanco, 2012; Martin & Samels, 2017; Rosen, 2011; Selingo, 2013). Changes in demographics, technology, teaching modalities, and financial pressures have led to unfilled positions and layoffs (2013; Lu, Laux, & Antony, 2017; Vyas & Campbell, 2015). The reduction in manpower illuminates the systemic and procedural issues, and students and employees who receive services are negatively impacted (Balzer, 2010; Douglas, Antony, & Douglas, 2015). Institutions have a brief window in which to change the way they operate or they may ultimately close (2013).
Characteristics Associated with the Application of LCI

Lean Continuous Improvement (LCI) is one method of quality improvement that is commonly used in manufacturing to improve processes, create efficiencies, increase the quality of products, and save money (Dennis, 2007; Waterbury, 2011; Wiegel & Brouwer-Hadzialic, 2015; Womack and Jones, 2003). Researchers have studied the application of Lean in manufacturing since 1988, and academics have done so in higher education since 2000 (Balzer, Francis, Krehbiel, & Shea, 2016; Comm, 2005). This theme reviews the literature that explains what Lean is, and how it developed, and explores its use in manufacturing and higher education. The challenges and strategies for successful implementation in higher education are also presented.

Lean Production

In the 1950’s Toyota Motor Company began developing the principles that became indispensable to the company’s success, and in 1988 John Krafcik wrote the seminal article on Lean. He coined the efficient practices and philosophies of Toyota as Lean Production. Krafcik introduced a second term in the seminal article, suggesting the term buffered could describe the opposite of Lean. Whereas Lean refers to producing parts and using labor as it’s needed, buffered systems are those where inventory and staffing levels are high – to buffer against problems that might happen (1988).

Lean refers to more than a series of tools; it is a multi-layered system of philosophies, principles, and methods (Clark, Silvester, & Knowles, 2013; Womack, Jones, & Roos, 1990). Toyota developed core principles that are foundational to its philosophies and business practices. Continuous improvement and respect for people serve as guiding ideologies at the strategic
levels of the organization (see figure 1). At the tactical level there are five more principles used by members in the organization: (1) Specify value from the customers’ perspective, (2) Identify the value stream, (3) Create flow, (4) Respond to the demand of the customer, known as pull, and (5) Pursue perfection. At the operational level there are a series of tools and methods that help make work visible so steps without value can be eliminated. (2013; Bell & Orzen, 2011; Imai, 2012; Cristina & Felicia, 2012; Gordon & Fisher, 2011; Mascitelli, 2000; Pârv, 2017; Price, Mores & Elliotte, 2011; Toussaint & Berry, 2013; Venegas, 2007).

The goal of any LCI organization is to maximize value and minimize non-value added practices, also known as waste. Value is the opposite of waste, and the value of something is specified by the customer. Organizations include three types of activities: (1) those that add value for the customer, (2) those that do not add value for the customer but cannot be eliminated, and (3) those which do not add value and can be eliminated (Cristina & Felicia, 2012). Simply, if the customer does not care about something it should not be part of the final product or service. (Bell & Orzen, 2011; Clark, Silvester, & Knowles, 2013; Comm & Mathaisel, 2008; Kholopane & Vandayar, 2014; Pieńkowski, 2014; Venegas, 2007).
Popularity for Lean in manufacturing has grown since Dahlgaard & Østergaard’s chapter (2000) and Krafcik’s article (1988). In August 2017 a Google Scholar search identified 809,000 results for Lean Manufacturing. The same search with a date range of 1900 - 2010 yielded only 216,000 results. In a 2012 survey, the Association of German Engineers found that 80% of the participants reported to have tried Lean, although the study does not indicate the sample size or location (Dombrowski & Mielke, 2013).

Several scholars have written about Lean’s popularity, effectiveness, and strategies for success in manufacturing. In 2013 Marodin & Saurin published a review of 102 Lean Production studies published between 1996 and 2012 and discovered most research in Lean Manufacturing within that period falls into one of six themes: (1) structure and scope, (2) factors that influence Lean implementation, (3) methods for implementing Lean systems, (4) Lean assessment methods, (5) results of implementing Lean systems, and (6) adaptation of Lean to specific industries (2013).

Not all organizations that try Lean succeed at improving productivity and reducing costs throughout the organization. Although Lean is proven as an organizational improvement philosophy, the success rate of widespread implementation in manufacturing, health care, and other industries remains low. (Coetzee, van der Merwe, & van Dyk, 2016; Dombrowski & Mielke, 2014; Marodin & Saurin, 2013). Companies that sustain long-term improvements are those who engage Lean at all levels of the organization with a consistent purpose, and who help employees through a time of planned change (Kumar, Choe, & Venkataramani, 2013; Turesky & Connell, 2010).
Continuous Improvement in Higher Education

In 1995 Hogg & Hogg foresaw necessary changes in higher education and recommended continuous quality improvement. In 2000 LCI was linked with higher education for the first time when Dahlgaard and Østergaard published a book chapter titled *TQM and Lean Thinking in Higher Education*. Comm and Mathaisel’s seminal article on Lean in higher education was published in 2003. The authors noted that LCI is vital for colleges and universities which must learn to self-organize, be more efficient, and quickly respond to change in order to be self-sustaining (2003). The first book about Lean in higher education was published by Balzer in 2010, and it included examples of Lean process improvements at six universities. Since these early publications, administrators in higher education have learned that applying LCI can save money and increase value for internal and external customers in small settings. To date there are only three known attempts to apply LCI university-wide in the United States and there is plenty of room for improvement (Balzer, Francis, Krehbiel, & Shea, 2016; Cristina & Felicia, 2012; Fliedner & Mathieson, 2009; Paris, 2007; Radnor & Bucci, 2011; Schierenbeck, 2013; Wiegel & Brouwer-Hadzialic, 2015).

LCI studies in higher education tend to focus on either the ‘academic side-of-the-house’ – academic colleges, curricula development, and teaching – or non-academic departments whose primary roles are related to serving students directly, e.g. financial aid, admissions, and the registrar (Sinha & Mishra, 2013). Within those environments, process improvements tend to be limited to either specific projects within departments, or at times between departments or divisions. There are only three known examples involving widespread implementation in higher education in the United States: Miami University in Ohio, University of Central Oklahoma, and University of Minnesota. (Balzer, Francis, Krehbiel, & Shea, 2016; Cristina & Felicia, 2012;
Internationally, there are more examples of institution-wide implementation in higher education in countries such as the United Kingdom, Kuwait, and Saudi Arabia. (Aldaihani, Alhussainan, & Terro, 2017; 2012; Radnor & Bucci, 2011; 2013). There are also reports of widespread implementation at the University of Notre Dame, University of Washington, and Michigan Technological University but their work is not yet referenced in the literature (W.K. Balzer, personal communication, July 13, 2018).

In recent years, LCI has proved successful in universities and colleges within specific departments. It has been used to improve processes in offices such as business services, admissions, research, and enrollment management (Balzer, 2010; Hess & Siciliano, 2007). Individual improvements include academic advising, curriculum and course design (including flipped classrooms), instructional practice, grade change processes, facilities services, and improved flow on freshmen move-in day (Alagaraja, 2010; Balzer, 2010; Doman, 2011; Emiliani, 2004; Emiliani, 2005; Fisher, Barman, & Killingsworth, 2011; Flumerfelt & Green, 2013; Isa & Usmen, 2015; MacIntyre, Meade, & McEwen, 2009; Pârv, 2017; Pusca & Northwood, 2016).

Although LCI has shown some success in higher education, there are a number of reasons why implementing LCI in newer domains such as education, government, and healthcare is more challenging than in manufacturing (Wiegel, & Brouwer-Hadzialic, 2015). In manufacturing it is easier to identify what customers want with the help of market research, but in education the motives of faculty are distinct. Educational institutions revolve around teaching and learning, and outcomes for the two cannot be examined separately (Pavlović, Todorović, Mladenović, & Milosavljević, 2014). In fact, there are no established metrics for institutional efficiency in higher education other than how much it costs to educate each student (Comm & Mathaisel,
Additionally, the high volume and repetitive tasks associated with manufacturing are not replicable in higher education where the individual needs of students are less predictable (2015).

There are cultural elements ingrained in higher education and other service industries that are antithetical to LCI, including the habit of batching paperwork. Batching orders is standard when the person doing the work wants to set it aside and do it at a time that is convenient. The downside of batching is that it forces the person who needs the work done to wait (Emiliani, 2004). For example, students who request transcripts should be able to receive them in minutes, rather than a more common turnaround of seven to ten days. Further challenges in implementing LCI include a lack of vision at the leadership level, less involvement by senior administrators, and a lack of understanding about what is needed in order to be successful (Radnor & Bucci, 2011; Wiegel & Brouwer-Hadzialic, 2015). Service industries also suffer from a lack of understanding about who the customer is and what they need. Additionally, there are too many unclear work processes and tasks, and not enough understanding on the part of staff and faculty about why they should invest time to improve processes (Radnor and Walley, 2008).

In 2007 a comparison of continuous improvement methods in higher education included a survey about perception. One-third of the study’s 30 responding institutions stated that negative attitudes from faculty and staff are the top two barriers in creating a culture of change and continuous improvement (Paris, 2007). Change in higher education is also difficult because systems and processes are designed to involve many constituents and take months or years, and as a result, administrators are not comfortable with flexibility and rapid change. (Bowen & Tobin, 2015; Hines and Lethbridge, 2008; Thirkell & Ashman, 2014). Other obstacles included size, complexity, and the decentralized nature of institutions, as well as motivation and turf issues (2007). Lean’s origins in manufacturing and the reference to customers is off-putting to
some faculty and staff who do not like comparisons of higher education to businesses (Emiliani, 2004). Further, applying LCI to the design and delivery of courses requires the willingness of professors to challenge what and how they teach (Alagaraja, 2010). Because of that, many faculty will have resistance to LCI and say it will not work in higher education, even though it will (2004).

Scholars do not agree on a specific implementation strategy for LCI in higher education (Comm & Mathaisel, 2005; Cristina & Felicia, 2012; Doman, 2011; Hines & Lethbridge, 2008; Lu, Laux, and Antony, 2017; Salewski & Klein 2009; Schierenbeck, 2013; Sinha & Mishra, 2013). There is agreement, however, on which characteristics tend to exist in successful implementations. In the 2007 comparison study of 30 universities, the top factor in successful implementations was having the support of senior campus leadership. Having a clear campus strategic plan, vision or priorities, and supportive campus culture were also important (Paris, 2007). In a review of successful Lean implementations strong commitment from top leaders and managers was a consistent factor (Lu, Laux, and Antony, 2017).

Comm and Mathaisel conducted a survey in 2005 which asked administrators at 18 public and private universities to comment on their institutions’ operational efficiency (the term Lean was too new, but the practices were the same). The study discovered that if certain ongoing practices were present in the environment the organization would have a better likelihood of success. The seven practices are (1) environment for change, (2) a directive for change that comes from leadership, (3) an open and honest culture, (4) employees that are empowered to take initiative, (5) training that includes an understanding of the whole process, (6) consistent communication, and (7) internal and external measurement that aligns with outcomes (2005).
While researchers may not agree on a specific implementation process, they do agree that the model used in manufacturing will not work in higher education without modification. (Hess & Siciliano, 2007; Wiegel & Brouwer-Hadzialic, 2015). Dennis emphasized the importance of balancing implementing approaches. He considers Lean improvements in terms of either implementation from the top-down or the bottom-up, stating that bottom-up approaches help with quick wins, but without top-down support the culture will not change (2006).

**Conclusion**

This body of evidence includes a brief history of LCI including its derivation at Toyota and its evolution into other industries. Barriers associated with applying LCI in higher education were presented. Although scholars do not agree on a specific implementation plan, there is some consensus around specific factors that, when present, can aid implementation. The significant features existing in specific LCI applications include the support of senior leadership, a directive that comes from leaders, and a strong strategic plan and vision (Comm & Mathaisel, 2005; Lu, Laux, & Antony, 2017; Paris, 2007). Other cultural characteristics include having an environment for change, an open and honest culture, and employees that are empowered to take initiative (2005). It is important to understand which cultural features are present during individual LCI implementations so that colleges and universities can apply LCI institution-wide.

**Cultural Readiness**

Higher education operates in a world much different than it was a decade ago (Delbanco, 2012; Rosen, 2011; Selingo, 2013). Changes in demographics, technology, teaching modalities, and financial pressures have led to unfilled positions and layoffs (2013; Lu, Laux, & Antony, 2017; Vyas & Campbell, 2015). The reduction in manpower illuminates the systemic and
process issues which can be addressed by applying Lean Continuous Improvement. LCI has shown great success in individual pockets within higher education, despite challenges (Wiegel & Brouwer-Hadzialic, 2015). Several scholars suggest strategies for application (Balzer, 2010; Doman, 2011; Pusca & Northwood, 2016). While scholars do not agree on a specific implementation plan, there is evidence that suggests when certain cultural factors are present in an organization the organization is more likely to be successful (Dennis, 2006; Noori, 2015; Paris, 2007). This third and final theme explores the link between organizational culture and effective organizational change efforts and presents cultural readiness factors that are either limiting or advantageous when applying LCI.

Organizational Culture and Change

According to Kezar and Eckel (2002) there are three threads of research involving culture and change in higher education. One line of thought is that colleges and universities need to have a culture that encourages change, and a second is that the change process itself affects the culture. Kezar and Eckel support a third idea which is that culture shapes the institution’s change process or strategies. This seems reasonable considering the difficulty encountered by administrators, program leaders, and academics who attempt to facilitate change in higher education (2002).

In order to fully implement a culture of innovation in higher education, the values, structure, and culture within traditional university settings would need to change (Elmuti, Kathawala, & Manippallili, 1996; Serrat & Rubio, 2012; Sirvanci, 2004). On a micro-level scale, there is generally confusion about who the customers are and what they represent. Many faculty dislike when students are called customers, and customers for processes are not always students (1996; Paris, 2007; Quinn, Lemay, Larsen, & Johnson, 2009). Further, the structures and systems
that are in place are not built to be nimble or user friendly. Processes that should be helping students instead make them run around and ultimately wait for what they need. Systems like those related to promotion and tenure for faculty and new program creation are mired in tradition, often requiring multiple handoffs, back-and-forth editing, and a number of signatures. On a macro-level scale, the reality that most universities and colleges have singular start dates for academic coursework is problematic. Opening the institution each year at the same time leads to an extraordinary amount of backlogs and bottlenecks as thousands of new students and faculty enter and try to navigate the system all at once. Staff in offices like campus card, parking, payroll, IT, facilities, health centers, the registrar, and those within colleges are all overburdened causing delays, errors, and a greater cost for overtime pay (Balzer & Rada, 2014; Comm & Mathaisel, 2005; Emiliani, 2005; Fliedner & Mathieson, 2009; Green, 2003; Isa & Usmen, 2015; Temponi, 2005; Thirkell & Ashman, 2014). While full culture change in higher education is not likely, there are opportunities to make the culture more effective via simplified processes.

Applying LCI to higher education is not without challenges, and there are a number of reasons why implementation fails. Some failed attempts in higher education are due to a failure to speak and communicate the language of higher education, a failure to demonstrate the effectiveness of LCI in higher education, and/or a failure to understand the intricacies of organizational change (Atkinson, 2014; Balzer & Rada, 2014). Sometimes the initiative itself is deemed not right for the organization’s structure and culture (Zell, 2001). From a process perspective, not including employees in the change (instead, doing the change to them), and focusing too much on tools of LCI rather than overall philosophies will impede effective implementation (Ahmed, 2013; Atkinson, 2014).
Leadership and managerial issues are common, and are some of the primary reasons LCI efforts fail (Dombrowski & Mielke, 2014; Halling & Wijk, 2013; Marodin & Saurin, 2013). A lack of leadership, including a failure to create and communicate a strategic vision for the change, will hamper efforts (Atkinson, 2014; Gordon, 2002; Martinez-Jurado & Moyano-Fuentes, 2013). Sometimes the problem is with the inability of leadership to engage and motivate staff (Rees, 2014; Swartling & Poksinska, 2013; Weiner, 2009). Without support from top managers, including the commitment of resources to hire consultants and provide effective training, LCI projects are likely to fail (Albliwi, Antony, Lim, & Weile, 2014; Turesky & Connell, 2010). Choosing the wrong projects or project teams, and not following up after the project will also cause problems (McLean, Antony, & Dahlgaard, 2015; 2010).

Leaders and a shortage of resources are not always the primary challenge when implementing LCI. Sometimes the organizational culture and a lack of involvement of employees is the problem (McLean, Antony, & Dahlgaard, 2015). Reduced faculty buy-in, resistance, apathy, and lack of engagement by employees also create issues (Paris, 2007; Radnor & Walley, 2008; Turesky & Connell, 2010). Further, up to one-half of organizations who fail to understand and prepare their culture are likely to also fail in implementing large scale change (Bhasin, 2012a; Weiner, 2009).

Organizations that choose to implement change via new initiatives like LCI must first seek to understand their culture (Arasli, 2002; Atkinson, 2010; Lomas, 2004; Losonci, Kása, Demeter, Heidrich, & Jenei, 2016; Marodin & Saurin, 2014; Temponi, 2005; Zu, Robbins, & Fredendall, 2010). Additionally, employees need to be willing to invest their time in the proposed change (AL-Abbrow & Abrishamkar, 2013). Overall, when participants’ values are in line with those of the organization, they will be more likely to overcome resistance and embrace
change (Agnew & VanBalkom, 2009; Antony, 2014; Gregory, Harris, Armenakis, & Shook, 2009; Smollan & Sayers, 2009). Some researchers have recognized there is such a thing as internal fit or readiness for LCI implementation (Antony, 2014; Bhasin, 2012a; Motwani, 2003; Schroeder, Linderman, Liedtke, & Choo, 2008; Zu, Robbins, & Fredendall, 2010). It is important to know which readiness factors cause employees to more willingly participate in process improvements (Lam & Robertson, 2012). The section that follows will focus on the cultural readiness factors that can aid LCI implementation.

**Cultural Readiness Factors**

Organizational readiness for change (ORC) was defined by Weiner as the shared commitment by members of an organization to implement a change, and a shared confidence they can execute the change (Gurumurthy, Mazumdar, & Muthusubramanian, 2013; Weiner, 2009). Weiner describes this as a shared psychological state, and a concept that is helpful in organizations relying on changes in collective behavior in order to implement effective change. The term *readiness* is intentional and refers to both the willingness and the ability of members in an organization (Lauzon, 2017; 2009). Organizational readiness is also defined in terms of the organization’s members’ beliefs, attitudes, and intentions (Armenakis, Harris, & Mossholder, 1993). Many authors have written about organizational readiness for change in terms of the critical readiness factors (CRF) that lead to success or failure in different industries like health care, manufacturing, service sectors, construction, and education (Abdolvand, Albadvi, & Ferdowsi, 2008; Fryer, Antony, & Douglas, 2007; Marodin & Saurin, 2013). There is some overlap among the readiness factors regardless of industry, however researchers emphasize the importance of understanding the specific organizational context for the change and appropriately preparing the organization (2007).
Not all of the CRF might be applicable to higher education and other industries with high levels of service functions, like health care (Fryer, Antony, & Douglas, 2007). In all industries, however, there is unmistakable agreement about the top factor required for a successful implementation, which is Leadership and Managerial Commitment and Support (Achanga, Shehab, Roy, & Nelder, 2006; Antony, 2014; Atkinson, 2014; Bortolotti, Boscari, & Danese, 2015; Brun, 2011; Gordon, 2002; Lu, Laux, & Antony, 2017; Motwani, 2003; Netland, 2016; Paris, 2007; Vadhvani & Bhatt, 2016). Antony, Krishan, Cullen & Kumar stated the need for “uncompromising management commitment and buy-in” (2012, p. 942). Leadership and Managerial Commitment and Support in LCI implementation assumes other complex ideas, starting with the leaders themselves. Key traits of good Lean leaders include being a good commander with strong integrity, a good listener, a good organizer, and one who has a good personality and is hands-on (Al-Najem, Dhakal, Labib, & Bennett, 2013). Leader continuity is also key, as is a strong self-awareness and showing respect in dealing with issues (Dombrowski & Mielke, 2013). In universities, senior campus leadership includes chancellors, provosts, presidents, and vice presidents (2007).

Other elements of leadership and managerial commitment include the need for leaders to define and share a vision for the culture change, and to create a positive environment for the change (Antony, 2014; Bhasin, 2012a; Comm and Mathaisel, 2003). Creating a culture conducive to change was mentioned throughout the literature (Al-Balushi, et al, 2014; Lomas, 2004; Wong 2007; Zu, Robbins, & Fredendall, 2010). Overall communication, openness, and trust throughout the organization is important to the success of LCI implementation (Anderson & Kumari, 2009; Antony, Krishan, Cullen & Kumar, 2012; Vadhvani & Bhatt, 2016; 2010). Further, leaders should be prepared to commit resources and link LCI to the University’s
overarching strategies (Antony, Krishan, Cullen & Kumar 2012; 2012a). Organizations need the continued support for the LCI initiative, but do not need leaders to micromanage (Dombrowski & Mielke, 2013).

Leadership commitment and support is vital, but top-down approaches alone will not work (Schillebeeckx, Maricque, & Lewis, 2013). Other critical readiness factors fall into one of two themes: Training and Education and Employee Participation and Involvement (Arasli, 2002; Netland, 2016). Training and learning sometimes includes the long-term development of employees and reward systems (Al-Balushi, et al, 2014; Dombrowski & Mielke, 2013; Vadhvani & Bhatt, 2016; Zu, Robbins, & Fredendall, 2010). Al-Balushi, et al, also recommend decentralized management style, which encourages employees’ engagement and ownership in the work (2014; Muthukumar, Tamizhjyothi, & Nachiappan, 2014). Others also noted the importance of intentionally planning for involvement of the people side of change, including the involvement of Human Resources, teamwork, and departmental relations (AL-Najem, Dhakal, & Bennett, 2012; Muthukumar, Tamizhjyothi, & Nachiappan, 2014). Empowering and engaging employees is considered vital in LCI work; employees need to feel able to design the work for which they are responsible (Arasli, 2002; Bhasin, 2012a; Comm & Mathaisel, 2003).

Conclusion

This body of literature includes an examination of culture and change in higher education. Dramatic changes in higher education and the success of LCI in other industries have led to the recognition that academia can benefit from the application of LCI (Selingo, 2013; Wiegel & Brouwer-Hadzialic, 2015). Complete cultural change would be necessary in order to fully benefit from LCI, and there are a number of structural and cultural challenges that make large-scale application in higher education difficult (Serrat & Rubio, 2012; Sirvanci, 2004). There is,
however, a strong body of evidence that outlines cultural readiness factors (CRF) that, when present, can aid implementation of LCI in a variety of industries (Gurumurthy, Mazumdar, & Muthusubramanian, 2013; Weiner, 2009). The majority of CRF that aid LCI implementation fall within one of three categories: Leadership and Managerial Commitment and Support, Training and Education, and Employee Participation and Involvement (Arasli, 2002; Netland, 2016).

Summary

Changes and challenges in higher education, particularly since the economic downturn of 2008, force administrators in higher education to operate in a world that is vastly different than it was even a decade ago (Delbanco, 2012; Martin & Samels, 2017; Rosen, 2011; Selingo, 2013). The changes have led to financial pressures, unfilled positions, and layoffs (2013; Lu, Laux, & Antony, 2017; Vyas & Campbell, 2015). The reduction in manpower makes systemic and procedural issues more apparent, and students and employees who receive services are negatively impacted (Balzer, 2010; Douglas, Antony, & Douglas, 2015).

LCI, which grew from Toyota into other industries, can help by simplifying processes. Barriers associated with applying LCI in higher education were presented, although there is consensus around specific cultural readiness factors (CRF) that can aid implementation in sectors like manufacturing and health care. The majority of CRF that aid LCI implementation fall within one of three categories: Leadership and Managerial Commitment and Support, Training and Education, and Employee Participation and Involvement (Arasli, 2002; Netland, 2016). It is important to understand which cultural features are present during individual LCI implementations so that colleges and universities can attempt to apply LCI institution-wide.

To date there is limited research exploring LCI in higher education, and only four known examples of applying LCI institution-wide (Bhasin, 2012a; Comm & Mathaisel, 2005; Cristina &
Felicia, 2012; Doman, 2011; Paris, 2007; Svensson, Antony, Ba-Essa, Bakhsh, & Albliwi, 2015). The four large-scale applications of LCI provided important findings to LCI literature, but it was not in the exploration of CRF.

Chapter three of this study describes the plan for helping to close this gap in the literature via the exploration of culture at the University of Maine at Presque Isle (UMPI). The problem of practice of this study was to better understand the factors that are either advantageous or limiting when applying LCI to an entire university. The purpose of this qualitative case study was to understand the conditions and environments that prove successful in the application of LCI to an entire college or university.

Yin suggests the case study method is appropriate when exploring a “contemporary phenomenon in depth and within its real-life context” (2009, p. 18), especially when dealing with multiple sources of data. The plan described in chapter three provides rationale for introducing in-depth interviews in order to answer the problem of practice.

This review of the literature, including the current challenges in higher education, LCI, and cultural readiness factors confirms the significance and timeliness of this research. The forthcoming chapter describes a methodology for carrying out effective and compliant research, and caps off the proposal for pursuing this work.

Chapter Three: Research Design

The problem of practice of this study was to better understand the factors that are either advantageous or limiting when applying Lean Continuous Improvement (LCI) to an entire university. The purpose of this qualitative case study was to understand the conditions and environments that prove successful in the application of LCI to an entire college or university. This research proposed to gather data at the University of Maine at Presque Isle (UMPI) and
create an understanding of the culture’s readiness for the application of LCI system-wide. This chapter provides a plan for effective and compliant research at UMPI designed to answer the following:

Research question:
Under what circumstances or settings are the methods of LCI applicable to an entire university?

Sub-questions:
1. What factors or characteristics are significant in colleges or universities that adopt the use of LCI?
2. What challenges or obstacles might universities confront when applying LCI to their institution?

This chapter begins with an overview of qualitative research and explain when a case study can be an appropriate strategy. Next, it will show why a single instrumental case study strategy will be an effective approach for conducting this particular research. The rationale for choosing UMPI as a case will be explained, as well as the participants and procedures. The methods for effectively analyzing data and maintaining ethical integrity will be described. Then, the researcher will share the methods for upholding trustworthiness, including credibility, transferability, and dependability. Finally, the researcher will discuss her research bias and expected limitations with this research.

**Qualitative Research Approach**

Qualitative research is an appropriate methodology for studying culture (Denison, 1996). It is an effective strategy for exploring a phenomenon with broad research questions that include what, why, or how. It assumes the use of a constructivist-interpretive framework in order to
understand the world in which we live and work. For constructivist-interpretivists the very foundation of understanding is learning how people interpret their world, for example, how do they ascribe value to events or things around them? Through the gathering and analyzing of data, researchers assign meaning to objects and events in individuals’ worlds (Butin, 2010; Creswell, 2013; Fraenkel & Wallen, 1996; Rubin & Rubin, 2012).

In qualitative research, the data gathering takes place in a natural setting. The researcher serves as the key instrument in the research, for example, by mining data, interviewing participants, or observing interactions. Qualitative researchers use inductive and deductive logic, working back and forth with data (and possibly the participants) until patterns and themes emerge from the research. Even the research process itself may change and develop as the work progresses and an understanding of reality is shaped by the researcher and participants (Creswell, 2013; Rubin & Rubin, 2012). This research was conducted through the researcher’s social constructivist/interpretive framework and emerged with an understanding of the culture that is co-constructed between the researcher and the participants.

Case study research is a useful qualitative strategy when the goal of the researcher is to conduct a study of a case within a particular setting or context, with questions that require an all-encompassing account of a social phenomenon (Yin, 2009). The roots of case study research can be found in Sociology and Anthropology as early as the 1920’s and 1930’s. It is a design type that could be the focus of study and also a product of the inquiry (Creswell, 2013). The researcher explores a real system bounded by either place or time using multiple methods of data including a combination of observation, interviews, documents, and reports, and/or audio visual data. The researcher’s goal was to create an in-depth understanding of the context or setting, developing themes that may ultimately be presented as a theoretical model. Instrumental case
studies focus on one issue or concern, whereas intrinsic case studies focus on the case itself. (2013; 2009). This research was conducted as a single instrumental case study at the University of Maine at Presque Isle.

Conducting a qualitative single case study was an appropriate strategy for this research. As an instrumental case, the focus was on which readiness factors are either advantageous or limiting in the application of LCI at a university. Literature outlined in Chapter Two revealed two critical things: Organizations that choose to implement change via new initiatives like LCI must first seek to understand their culture (Arasli, 2002; Atkinson, 2010; Lomas, 2004; Losonci, Kása, Demeter, Heidrich, & Jenei, 2016; Marodin & Saurin, 2013; Temponi, 2005). When participants’ values are in alignment with the organization they will be more likely to embrace change (Agnew & VanBalkom, 2009; Antony, 2014; Gregory, Harris, Armenakis, & Shook, 2009; Smollan & Sayers, 2009). Schein (2010) noted that cultures have three layers: Artifacts, Espoused Beliefs and Values, and Basic Underlying Assumptions. Therefore, an in-depth case study using multiple methods of data collection afforded the best strategy for understanding the multiple layers of culture at UMPI. This research determined whether values are in alignment throughout the organization, and discovered which readiness factors are present.

Creswell (2013) recommends choosing a case that is accessible, promising, and useful. Yin (2009) suggests choosing a unit, or case, with concrete boundaries. Following a review of the literature on both LCI and cultural readiness factors, the University of Maine at Presque Isle (UMPI) emerged as a campus with qualities that made it an appealing choice for this research. The following section will give an overview of UMPI and share why case study was an appropriate strategy.
UMPI is one of the seven campuses within the University of Maine System (UMS). In the fall of 2016, it was the second smallest campus in the UMS in terms of student enrollment, and the third smallest in full-time regular (not temporary) employees. Table 1 highlights the number of full-time regular employees in the fall semesters of 2016, 2012, and 2008. Full-time regular employees are those with on-going appointments and working 40 or more hours per week. Part-time and temporary employees are not included in this graph.

In 2013 the University of Maine System underwent a number of administrative reviews. The reviews thoroughly evaluated certain services provided at the seven (then) highly autonomous campuses. Recommendations based on the results led to the systemic centralization of four key areas: Information Technology (IT), Human Resources (HR), Facilities, and Strategic Procurement. Staff in these areas are managed through the UMS system office, known as University Services (US). The changes required some degree of reorganization, and staff in some departments were affected more than others. As of fall 2017, all recommendations have been implemented and departments and reporting lines are currently stable. Table 1 includes the number of full-time staff based at UMPI but serving on behalf of the US. The Senior Human Resources Partner for UMPI serves on the President’s Cabinet and is considered a part of the administration. Her appointment is shared between UMPI and several departments at the University of Maine, so she is not considered full-time at UMPI and is not included in the graph. The University Services personnel are a critical part of the culture at each campus. In many cases, their appointment to the campus predates the centralization. In this research, the US personnel serving at UMPI are included with campus-based personnel.
<table>
<thead>
<tr>
<th></th>
<th>Administrators</th>
<th>Faculty</th>
<th>Salaried</th>
<th>Hourly</th>
<th>Total</th>
<th>Undergraduate Students</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fall of 2016</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full-time UMPI</td>
<td>3</td>
<td>40</td>
<td>45</td>
<td>38</td>
<td>126</td>
<td>1,326</td>
</tr>
<tr>
<td>Full-time US located in UMPI</td>
<td>1</td>
<td>0</td>
<td>7</td>
<td>4</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Total full-time employees located in UMPI</td>
<td>4</td>
<td>40</td>
<td>52</td>
<td>42</td>
<td>138</td>
<td></td>
</tr>
<tr>
<td><strong>Fall of 2016</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full-time UMS</td>
<td>93</td>
<td>1,172</td>
<td>1,595</td>
<td>1,311</td>
<td>4,171</td>
<td>25,685</td>
</tr>
<tr>
<td><strong>Fall of 2012</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full-time UMPI</td>
<td>3</td>
<td>50</td>
<td>52</td>
<td>51</td>
<td>156</td>
<td>1,463</td>
</tr>
<tr>
<td>Full-time UMS</td>
<td>113</td>
<td>1,279</td>
<td>1,648</td>
<td>1,437</td>
<td>4,477</td>
<td>26,764</td>
</tr>
<tr>
<td><strong>Fall of 2008</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full-time UMPI</td>
<td>14</td>
<td>55</td>
<td>42</td>
<td>54</td>
<td>165</td>
<td>Data is not available</td>
</tr>
<tr>
<td>Full-time UMS</td>
<td>148</td>
<td>1,366</td>
<td>1,613</td>
<td>1,633</td>
<td>4,760</td>
<td>Data is not available</td>
</tr>
</tbody>
</table>


In addition to the size of this small campus, which was appealing because many – if not most – of the staff and faculty were potentially accessible for this research, other factors made UMPI an exciting case choice. First, the university has shown it can be innovative and nimble. In recent years, the faculty and administrators implemented a new proficiency-based curriculum to meet the expectations of graduates of Maine’s high schools who are operating under their own new curricula (http://www.maine.gov/doe/proficiency/). Second, the campus benefits from the support and involvement of its top leaders and managers. Dr. Ray Rice serves in two roles: as UMPI’s President, and also as its Provost and Vice President for Academics and Student Affairs. President Rice leads a small team of senior leaders who made a commitment to continued process improvements.
In 2016 UMPI’s senior leadership hosted a day-long introduction to Lean Continuous Improvement facilitated by the UMS Senior Partner for Organizational Effectiveness. The focus of the day was on developing a Lean culture based on lessons derived from *Lead with Lean* (Ballé, 2016). Following that day, sub-groups worked with the facilitator to identify and improve processes. Projects were selected based upon the groups’ interests, and the Lean facilitator chose appropriate methods for making the work visible and seeking to improve it (primarily 5S, VSM, and Spaghetti Mapping). Workshops continued through 2017, and Goal One *Campus Culture* within the UMPI Strategic Plan (Appendix A) calls for all supervisors to receive training and implement one LCI initiative annually. It is early, although the groups are keen to make swift and effective process improvements and to use the improvements as a basis for training staff and helping to create a culture of LCI.

The review of literature in Chapter Two showed an unequivocal need for this level of leadership and managerial commitment (Achanga, Shehab, Roy, & Nelder, 2006; Antony, 2014; Atkinson, 2014; Bortolotti, Boscari, & Danese, 2015; Gordon, 2002; Lu, Laux, & Antony, 2017; Paris, 2007; Vadhwani & Bhatt, 2016). Antony, Krishan, Cullen & Kumar also stated the need for “uncompromising management commitment and buy-in” (2012, p. 942). UMPI’s small size, leadership commitment, and willingness to innovate make it the most favorably positioned of the seven campuses to apply LCI institution-wide.

Case study research requires in-depth and extensive data collection, using multiple forms of data. Qualitative case study researchers explore sites and participants in their natural settings. They ask open-ended questions that are designed to be clear and not confusing (Creswell, 2008). Data collection for case studies needs to be precise. The researcher analyzes data until a theme or
themes emerge. This particular case research happened in four phases. Although more details about the research procedures will be described in a later section, an overview is presented here.

In Phase One, *observations* and descriptions of physical artifacts were collected in order to understand what Schein’s Model of Organizational Culture (2010) refers to as the first and most visible layer of culture: Artifacts. In Phase Two, *documentation* of reports and *archival records* provided evidence of the university’s Espoused Beliefs and Values and analyzed. In Phase Three, *in-depth interviews* were conducted and analyzed to create an understanding of the Basic Underlying Assumptions at UMPI. The fourth and final phase was the analysis of the first three phases, which provided an understanding of the cultural values at UMPI (2010; Yin, 2009).

**Participants**

Qualitative scholars generally say ‘it depends’ when asked how many interviews are necessary (Baker & Edwards, 2012). Rubin and Rubin claim one does not need to interview a huge number of people, although it is important to explore and evaluate alternative vantage points (2012). A sampling of recent case studies was examined to discover an appropriate number of interviewees. The keywords ‘case study’ and ‘organizational culture’ were entered in Academic Search Complete. The search pulled 223 articles that explored culture in a variety of industries. A number of articles were reviewed, and recent studies examining a phenomenon within the context of an organization were considered. The number of interviews with different individuals ranged from 7 - 33, with a mode of 18 (Currey, Somogyi, & Ariyawardana, 2017; Evangelista, Colicchia, & Creazza, 2017; Farr & Barker, 2017; Gillespie, Papa, & Gomez, 2017; Klein, 2017; Schäfer, 2017; Tierney & Sabharwal, 2017).

Rubin and Rubin (2012) recommend interviewing 2-3 members from each level of the organization. Schein (2010) notes that much of what happens in an organization are really the
exchanges between subcultures occurring in a larger context. The University of Maine at Presque Isle is one campus with multiple subcultures, including administrators, faculty, salaried staff, hourly staff, residential students, and commuter students. There are other cross-sections of culture, including divisions and departments, although some divisions and departments have more staff and others have more faculty. Due to the hierarchical nature of academia, this research included 12 interviewees based upon their employee classification rather than their departmental home.

The purpose of this qualitative case study was to understand the conditions and environments that prove successful in the application of LCI to an entire college or university. The research specifically looked at the application of LCI with employees (administrators, faculty, and staff) at UMPI. This study started with maximum variation sampling, soliciting employees from the administration, faculty, salaried staff, and hourly staff. The researcher interviewed three administrators, and three each of the faculty, salaried, and hourly staff, for a total of 12 interviewees at UMPI. Snowball sampling was also used when participants shared leads about other people who had information to share (Creswell, 2013). The researcher collected the following information about the interviewees: age, gender, employee classification, and length of time with UMPI.

Yin (2009) notes that case studies require the corroboration of evidence. In addition to the interviews, the researcher used direct observations, documents, and archival records to explore and describe the culture at UMPI. Each source of data has strengths and weaknesses. Interviews provide insight but require carefully crafted and asked questions in order to elicit unbiased and accurate responses. Retrieving documents and archival records is generally unobtrusive to the site but can be at risk for access and bias issues. Direct observations
provide context but can be time-consuming. Throughout the intense data gathering stage, the researcher followed procedures to mitigate bias and produce ethical, credible, dependable, and transferable research.

**Procedures**

Schein’s Model of Organizational Culture depicts three layers of culture: Artifacts, Espoused Beliefs and Values, and Basic Underlying Assumptions (2010). Multiple and varying methods were used to identify, describe, and analyze culture at all three levels. This research was conducted in multiple phases, at times pausing for analysis of data before moving into the next phase. This research sought to answer the following questions:

Research question:

Under what circumstances or settings are the methods of LCI applicable to an entire university?

Sub-questions:

1. What factors or characteristics are significant in colleges or universities that adopt the use of LCI?
2. What challenges or obstacles might universities confront when applying LCI to their institution?

In order to answer these questions, the researcher wanted to understand the culture at UMPI. Prior to starting, the researcher obtained approval for this research from NU’s Institutional Review Board (IRB). The role of the IRB is to protect the rights of human subjects and to uphold integrity, confidentiality, and quality throughout the research. Following IRB approval, the next four phases continued as follows:
Phase One of this research consisted of directly observing multiple sources of data in order to describe the Artifacts at UMPI. The term Artifacts refers to the surface level of an organization. External constituents are able to easily observe and hear elements of this layer (Schein, 2010). These observations were less formal than observations of meetings or other work activity; they provided information relating to the climate at UMPI.

1. The researcher observed the physical environment at UMPI. For example, what were the buildings like? Were they modern or more traditional? Were they clean and tidy or in disrepair? Were classes and offices easy to access? What image did they portray to staff, faculty, and visitors? Were the hallways busy and noisy or quiet? Were people enjoying themselves?

2. The researcher observed messaging and language to better understand this first layer of culture. What did flyers and brochures on campus say about the culture? What were the logos and mascots? What did the website and other front-facing portals say about the culture? Was a mission statement visible, and what did it say? What language was used? Were they using terms specific to the culture of higher education and/or the culture of UMPI? In other words, what did the staff, faculty, students, and visitors on UMPI’s campus see and hear every day?

3. Finally, the researcher searched the website and asked appropriate staff in order to collect evidence of rituals and ceremonies. What formal and observable traditions were there?

Schein cautions against analyzing Artifacts or assuming a deeper meaning behind them. They are useful for painting an image, but it is almost impossible not to project the observers’ own emotions or reactions on them (2010).

Phase Two of this research used a review of documentation and archival records to search for evidence of the university’s Espoused Beliefs and Values. This second layer of culture
comprises the standards, rules of conduct, and philosophies of employees (Schein, 2010).
Collecting documents and archival records is unobtrusive, and in case studies, they are an important source for providing corroborating evidence. There is, however, a risk of selection and reporting bias on the part of the observer. Also at risk is an overreliance on documents or the assumption they provide the absolute truth; they should be understood within their particular context. Participant observations can provide insight into motives and behavior, but the researcher can unwittingly change the outcome (Yin, 2009). The collection of data in phase two occurred in two steps, outlined below:

1. The researcher reviewed campus documents and reports. What did conversations, decisions, and policies say about UMPI’s values? Did UMPI have a strategic plan? If so, what did it say about the cultural values?

2. The researcher reviewed documents related to strategic planning. Who was involved in the process? What were the principles and goals of UMPI?

In Phase Three, the researcher conducted and analyzed in-depth interviews to create an understanding of the Basic Underlying Assumptions at UMPI. Schein describes this layer as unconscious beliefs that participants take for granted. They are not visible. This layer represents cognitive stability, and any challenges to it will cause anxiety and defensiveness (Schein, 2010). Interviewees shared both facts and opinions and suggested other potential interviewees and/or sources of evidence, which is consistent with Yin’s case study, design (2009).

Interviews are a critical component of case study research; interviews provide access to participants’ “perceived causal inferences and explanations” (Yin, 2009, p. 102). Semi-structured interviews utilize a series of pre-established questions along with appropriate follow-up
questions that build on answers given during the interview. Researchers conduct responsive interviews with main questions, follow-up questions, and probes that are designed to keep the conversation on point and ask the interviewee to clarify or share examples (Rubin, 2012). The researcher conducted semi-structured interviews with members of the UMPI community, using a responsive interview style. The questions were designed to explore the deeper levels of the culture to unveil evidence that ultimately led to an understanding of the culture.

Interviewers have two responsibilities: to follow a line of inquiry and to ask questions in a balanced manner without bias. Interviews should be fluid like conversations while keeping on track (Yin, 2009). The researcher started interviews with a draft of the main questions, and supplemented the final set of questions with appropriate follow-up questions.

The researcher designed the primary questions to portray a deeper understanding of the underlying assumptions of the culture at UMPI. The main questions fell within the following three categories: leadership commitment and management support, training and education, and employee participation and involvement. These were the three areas identified in the review of the literature as the prevailing indicators that organizations are ready to implement LCI (Antony, 2014; Netland, 2016; Paris, 2007).

The primary questions and some follow-up questions were as follows:

1. Can you tell me about leadership here at UMPI?
   a. What do UMPI’s leaders value?
   b. Is the leadership clear about what it expects of you (and the rest of the campus community?)

2. Does UMPI have a culture of communication and trust? Do you have some examples?
3. Does UMPI have a strategic plan? What are the components of the plan? Is there a strategic vision for the campus? Do you know what it is?

4. Are staff and faculty at UMPI encouraged to take part in training and development opportunities? Do you have some examples?

5. Are faculty and staff engaged in the community here? What does that look like? What does it feel like?

6. Are employees given permission to ‘own’ the work they do? Do you feel responsible for the work you do? Do you feel like you have permission to manage your own time?

7. What do you enjoy about your job?

8. Does anything get in the way of you being able to do your job? If so, what?

9. Do you feel supported if you want to suggest changes to the way you provide services or do your job? If so, who or what supports you? If not, who or what stands in your way?

A technique from the field of counseling to help elicit a deeper understanding of a culture’s Basic Underlying Assumptions (Rankin, 2017; Schein, 2010). Sample follow-up questions include:

Round 1: Why do you believe/think that? Or, why is this a problem?

Round 2: Why do you believe/think that is the case? Or, if that is a problem, why is it a problem?

Round 3: It seems you believe/think [whatever you have discussed]; have you thought about why you think those things? Or, what do you think is the belief or idea that is the root of this problem?

This style of probing is familiar to this researcher, who is familiar with helping teams identify root process issues. Her approach is genuine and well received, and as such, this style of follow-up questioning was appropriate.
Effective organization, documentation, and safe storing of data are critical components of case studies (Yin, 2009), and the processes for managing all data will be explained later in this chapter. The fourth and final stage of this research will be the data analysis. Analysis of the data will provide an understanding of the culture at UMPI and the degree to which members of the organization are willing to embrace LCI as an initiative. Methods for doing so will be described in the section that follows.

**Data Analysis**

Analyzing data for a case is the equivalent of sorting out the significant pieces to provide an interpretation of the culture (Geertz, 1973). Yin (2009) recommends five analytic techniques: pattern matching, explanation building, time-series analysis, logic models, and cross-case synthesis. This research used pattern matching, which allowed the researcher to compare empirically based patterns – cultural readiness factors in other industries – with those discovered in this exploratory case.

Data was collected, organized, and analyzed in each of the phases of this research. In all cases, it was important to maintain the integrity of the research, and methods for doing so will be described. Yin recommends creating a case study database and storing the raw data separate from the analysis to allow for examination by future researchers (2009). All data were entered or uploaded into NVivo, a qualitative data analysis software. The researcher purchased a subscription to NVivo, and created and maintained her own research files. The files were created and accessed using a user ID and password known only to the researcher.

In phase one of the research, the researcher directly observed the surroundings, websites, and relevant activity at UMPI. Observations were made using an iPad, a notebook, and NVivo (both the iPad and NVivo were accessed with unique passwords). The database in NVivo was
backed up daily to the researcher’s private Dropbox account, which is a cloud-based storage system accessible via password. Descriptions were used to paint a picture of the surroundings, but Schein cautions against using Artifacts to gain a sense of the deeper assumptions. The researcher encountered visual evidence of values at the surface level and entered those into NVivo. Analysis of phase one happened during phase two because the researcher did not want to risk only seeing corroborating data during the collection portion of phase two.

In Phase two, the researcher collected and analyzed specific documents and archival records at UMPI. The research included documents related to recent reorganizations, curriculum changes, and strategic planning. The documents, along with data collected during phase one, were uploaded and reviewed for evidence of values. NVivo was used to help code and categorize the data into themes.

In phase three, interviewees were sought using maximum variation sampling (Creswell, 2013). The researcher wanted to interview all three administrators, and then three staff from each of the employee classification areas: faculty, salaried staff, and hourly staff. The researcher asked the Senior Human Resource Partner (SHRP) for leads in each of the areas. The SHRP is assigned to UMPI and also the University of Maine three hours away. She knows the staff and faculty well but was not interviewed because she is not a full-time UMPI employee. Rubin & Rubin (2012) recommend finding interviewees with first-hand knowledge about a topic; in this case, the researcher asked about leadership commitment and support, education and training, and employee participation and engagement. It was determined that staff members who have been on site for a year or more would be able to provide insight.

The initial interviews were scheduled for 60-90 minutes each and follow-up interviews were offered to all interviewees. All interviews were recorded and transcribed by the researcher.
and stored in a case study database using NVivo. The researcher coded the data in NVivo, assigning one or two words that summed up the salient points for each passage (Saldaña, 2000). As with data collected in phase two, all data was stored in a raw data set, separate from the analyzed set. All records were kept confidential; all participants were offered the use of a pseudonym and all declined. Following transcription, a copy of the interview was shared with the interviewee to provide construct validity, and augmentations to the dataset will be made if necessary (Yin, 2009).

These data helped answer the main research question of this study: Under what circumstances or settings are the methods of LCI applicable to an entire university? The researcher also learned what factors or characteristics are significant in colleges or universities that adopt the use of LCI, and what challenges or obstacles might universities confront when applying LCI to their institution.

**Ethical Considerations**

Researchers are bound to maintain ethical and professional standards throughout the entirety of their research. They need to respect the research sites and the rights of their participants. They also need to be honest and thorough in their reporting (Creswell, 2008).

In all phases of this research the participants were offered anonymity. UMPI is a small campus in a rural part of the state; even physical descriptions of the workspace could unwittingly provide clues that would connect accounts with specific people. In order for this research to provide an accurate understanding of the culture, participants needed to trust that neither the researcher nor her methods would betray their confidence. Pseudonyms were offered (and declined) and general descriptions of offices were used where appropriate to maintain
confidentiality. Documents and related analysis were stored separately in distinct files within the database. The data will be uploaded and accessed using a password-protected NVivo account.

In addition to protecting confidentiality, the researcher treated interviewees with respect. This included reminding them this work was a research study, honoring promises, and not pressuring them to participate (Rubin & Rubin, 2012). This researcher has worked in professional settings in higher education for twenty years and earned the trust of countless students and employees. In the past when ethical dilemmas have arisen she has made honorable choices. This role as a researcher is a new one, and if issues arose she was prepared to call on her advisor or other suitable professional for advice – however, there were no concerns or problems raised.

**Trustworthiness**

Case studies must be intentionally and carefully designed to ensure quality. At UMPI the experiences of staff and faculty create a shared understanding of the culture. This research explored the deepest and underlying assumptions of that culture in order to identify particular readiness factors for implementing LCI. In all phases, the researcher was responsible for demonstrating credibility, transferability, dependability, and confirmability for the study. The following sections will describe the process she followed.

Credibility is sometimes referred to as validation or trustworthiness, and it is deemed particularly critical in qualitative studies (Creswell, 2013; Eisner, 1991; Golafshani, 2003; Lincoln & Guba, 1985). The potential for researcher bias and the qualitative nature of this research will require multiple sources of data and tests for validity. Qualitative interviewing can create credible results in a context, provided the research has been conducted with accuracy and transparency. It is also important to interview credible informants, or people with first-hand
knowledge about your research problem (Rubin & Rubin, 2012; Yin, 2009). This researcher sought interviewees who have been at UMPI for at least one year and able to answer questions regarding the culture and activities on campus.

This research used tools to ensure that it was credible, including member-checking and multiple interviews. One example of how member-checking was used was through sharing the transcribed interviews with each interviewee. He or she was asked to correct any errors and to expound on points. Further, accuracy and credibility can be enhanced by precise record keeping (Rubin & Rubin, 2012; Yin, 2009). All notes were created and maintained in appropriate files within NVivo.

Transferability, or generalizability, is difficult for most qualitative researchers because the context of cases differs (Creswell, 2013). With the aid of thick descriptions, however, readers can better understand the setting and the context. Thick description is ethnography; it is establishing rapport, keeping a journal, reviewing documents, and interviewing informants. Holistic analysis and rich descriptions of the themes will allow for context and transferability (Yin, 2009). It allows readers to intimately connect with the subjects of the case (Geertz, 1973).

In many ways, UMPI could have similarities with other small universities. The world views of faculty and experiences of staff could transfer to other situations. By painting a picture of what one experiences at UMPI, the researcher will allow readers to make connections between UMPI and other environments.

The dependability or reliability of research relies on effective methods for collecting and storing the data. Yin recommends keeping a formal case study database that is separate from the analysis (2009). Copies of all documents, notes, webpages, and transcripts of interviews were
stored within NVivo. A backup copy of all files and notes were stored on the researcher’s cloud-based Dropbox account.

At each stage, the researcher kept a research journal, including detailed notes, documents, and reports, such that the researcher – or a reviewer – could reconstruct the path of the research. In addition to the content, the context, and the results of the research, the researcher should be able to describe the process and methods used, and the notes found along the way. In addition to providing a history and documentation, a journal was a marvelous tool for enhancing thinking and looking at situations with new eyes, which is consistent with Yin’s suggestions (2009).

This research was conducted by an employee of the University of Maine System and the person responsible for leading LCI training and process improvements at all UMS campuses, including at UMPI. The researcher in this situation was ideally suited; she was someone who gained trust with employees through interactions on the campus, yet because she only visited the campus every three to four months she was not embedded in the culture. That said, Creswell cautions about issues in studying “your own backyard” (2013, p. 151), and recommends multiple strategies of validation to help reduce the risk of researcher bias.

Researchers need to ensure trustworthiness and help mitigate bias related in their research. In this instance, there were two University Services employees who were willing and capable of providing peer review. One of the women was the Senior Human Resource Partner for UMPI. She was not counted as one of the staff at UMPI because her primary assignment was at the University of Maine, however, she was intimately familiar with the environment and has unique and helpful perspective. The other woman was the Director of Organizational Effectiveness. As such, she had ongoing awareness about the campus and many of the
participants. Both of these women were able to keep the researcher from missing key elements or interviewees who could provide insight. Both women are strategic and critical thinkers and able to provide effective feedback. There were no issues flagged or indications the researcher became too closely involved with the campus.

Limitations

Expected limitations of this research included the difficulty in transferring the results beyond the reach of similar institutions. Qualitative research is difficult to generalize to other institutions because the research is context specific (Creswell, 2013). The researcher attempted to mitigate this with a thorough and accurate understanding of the culture and thick descriptions of the campus (Geertz, 1973).

This research was an intentional deep dive into the culture of one campus in northern Maine, and this exploration may not have produced outcomes that could allow for comparisons at other institutions. Further, demographic limitations for the State of Maine may exacerbate the ability for other institutions to draw from the research. Maine is the least racially diverse state in the nation; 94.8% of its inhabitants are white. UMPI is in Aroostook County, which is 95.2% white and 16.3% of its population are living in poverty compared to 12.5% for the whole state (https://www.census.gov/quickfacts/fact/table/aroostookcountymaine,ME/PST045217#viewtop).

Additionally, the researcher was an employee of the University of Maine System (UMS) and needed to be aware of the potential for ethical concerns, because UMS is the larger system home for the University of Maine at Presque Isle. The researcher relied on the willingness, honesty, and trust of participants in order to answer the research problem. She kept detailed and accurate data to ensure credibility.
Chapter Four: Findings and Analysis

The purpose of this case study was to understand the conditions and environments that prove successful in the application of LCI to an entire college or university. It is anticipated that information gleaned from this study will aid administrators in higher education who implement LCI. The researcher used a qualitative case study design to conduct a study at the University of Maine at Presque Isle (UMPI) through the theoretical lens of Schein’s Organizational Model of Culture (2010). Schein’s model depicts three layers of culture: Artifacts, Espoused Beliefs and Values, and Basic Underlying Assumptions (2010). Multiple and varying methods were used to identify and analyze UMPI’s culture at all three levels.

Phase one of the research consisted of directly observing multiple sources of data to describe the artifacts at UMPI. Artifacts are the easily observed elements at the surface level of culture, like buildings, sounds, and messages (Schein, 2010). The researcher spent four days walking around campus, observed sights and scenes including buildings, flyers, and signs, and over the course of five additional weeks, she thoroughly explored UMPI’s website.

In phase two of the study, the researcher used a review of documentation and archival records to explore the university’s Espoused Beliefs and Values. This second layer was made up of standards, rules of conduct, and philosophies of employees (Schein, 2010). The researcher reviewed and analyzed the university’s strategic plan (Appendix A), organizational charts (Appendices B and C), and other records including the first yearbook in 1909 and the faculty handbook.

In the third phase of the research in-depth interviews were conducted and analyzed to create an understanding of the Basic Underlying Assumptions at UMPI. According to Schein, this layer includes unconscious beliefs that are not visible and are taken for granted (2010).
Twelve participants were interviewed for this study, representing a cross-section of the full-time employees at the University of Maine at Presque Isle (UMPI). The participants included three faculty, three salaried staff, three hourly staff, and three administrators who are part of the senior leadership team. The goal of the interviews was to answer this research question: Under what circumstances or settings are the methods of LCI applicable to an entire university? The two sub-questions the researcher sought to answer are: What factors or characteristics are significant in colleges or universities that adopt the use of LCI? And what challenges or obstacles might universities confront when applying LCI to their institution?

The fourth and final phase of the research was the analysis of data. Initial analysis of the raw data from all forms of data collection produced 40 themes which appeared anywhere from 2 to 368 times. A much deeper analysis of the data culminated in four overarching themes and 13 sub-themes. The first theme was Leadership, and the sub-themes within included Leadership vision and commitment, Communication, Leadership values students, and Leadership values employees. The second theme was Campus involvement, the sub-themes of which were Community, Engaged employees, and Working toward shared goals. The third theme was Perseverance, and the three sub-themes were Resolve, Barriers, and Difficult history. The fourth and final theme was Trust, and the sub-themes were Relationships, Empowered employees, and Honesty. These themes are depicted below in Table 1, which also indicates the number of times a reference to the theme appeared in the data in each of Schein’s layers (2010).
Table 1

Number of References to Themes and Sub-themes in Each of Schein’s layers (2010)

<table>
<thead>
<tr>
<th>Theme</th>
<th>Artifacts</th>
<th>Espoused Beliefs and Values</th>
<th>Basic Underlying Assumptions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Leadership</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1a. Leadership Vision and Commitment</td>
<td>199</td>
<td>94</td>
<td>710</td>
</tr>
<tr>
<td>1b. Communication</td>
<td>59</td>
<td>47</td>
<td>202</td>
</tr>
<tr>
<td>1c. Leadership Values Students</td>
<td>63</td>
<td>32</td>
<td>75</td>
</tr>
<tr>
<td>1d. Leadership Values Employees</td>
<td>24</td>
<td>7</td>
<td>126</td>
</tr>
<tr>
<td><strong>2. Campus Involvement</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2a. Community</td>
<td>39</td>
<td>16</td>
<td>93</td>
</tr>
<tr>
<td>2b. Engaged Employees</td>
<td>8</td>
<td>19</td>
<td>194</td>
</tr>
<tr>
<td>2c. Working toward Shared Goals</td>
<td>13</td>
<td>25</td>
<td>188</td>
</tr>
<tr>
<td><strong>3. Perseverance</strong></td>
<td>11</td>
<td>14</td>
<td>315</td>
</tr>
<tr>
<td>3a. Resolve</td>
<td>11</td>
<td>2</td>
<td>66</td>
</tr>
<tr>
<td>3b. Barriers</td>
<td>0</td>
<td>10</td>
<td>164</td>
</tr>
<tr>
<td>3c. Difficult History</td>
<td>0</td>
<td>2</td>
<td>85</td>
</tr>
<tr>
<td><strong>4. Trust</strong></td>
<td>24</td>
<td>5</td>
<td>308</td>
</tr>
<tr>
<td>4a. Relationships</td>
<td>13</td>
<td>2</td>
<td>81</td>
</tr>
<tr>
<td>4b. Empowered Employees</td>
<td>9</td>
<td>2</td>
<td>138</td>
</tr>
<tr>
<td>4c. Honesty</td>
<td>2</td>
<td>1</td>
<td>89</td>
</tr>
</tbody>
</table>

This chapter thoroughly defines and describes each of these themes and sub-themes. Observations, quotes, and other evidence will be used to connect this data with the researcher’s original question and sub-questions and create an understanding of the conditions and environments that prove successful in the application of LCI at an entire college or university.

**Leadership**

*Leadership* and its related sub-themes were referenced multiple times throughout the review of documentation and transcripts from the interviews; interviewees discussed some element of leadership more than any other theme. This aligns with the literature which states that Leadership and Managerial Commitment and Support is the key cultural readiness factor in organizations preparing for change (Achanga, Shehab, Roy, & Nelder, 2006; Antony, 2014;
Evidence of leadership included references to the vision of leaders, their commitment to campus, leaders’ clear communication and expectations, accessibility, and their value for students and employees. Further, it must be noted that the prevalence of this factor throughout the organization is consistent with the literature which states that when participants’ values are in alignment with the organization they will be more likely to embrace a change initiative like LCI (Agnew & VanBalkom, 2009; Antony, 2014; Gregory, Harris, Armenakis, & Shook, 2009; Smollan & Sayers, 2009).

Examples of leadership were abundant throughout UMPI. Artifacts, noticeable to the most casual observer arriving on campus included clear and consistent signage welcoming visitors, awareness about programs, majors, or upcoming events, and attractive brick buildings that were built to match each other. Inside, the buildings were immaculate. The hallways were glistening, common spaces were welcoming and well-maintained, and flyers, posters, and bulletin boards cheered students on while reminding them how to get support with clearly defined steps and contact information. Further, the website is consistently-themed and informative; each page illustrates UMPI’s commitment to students and compels the viewer to want to learn more about the campus. Creating an environment and messaging that is consistent across an entire campus, inside and out, requires leadership vision, communication, and clear expectations.

UMPI’s Espoused Beliefs and Values were explored via internal documents like the Strategic Plan and organizational charts. Senior leadership led the recent update of the campus’s strategic plan while also investing time in re-envisioning the organizational chart. The latter had only been updated the year before, but leadership became aware that a matrix chart would
represent the communication lines of the staff and faculty better than the traditional chart influenced by reporting lines. Investing time in the documents was an indication of leadership vision and commitment, and the final documents themselves are examples of the University’s values. Further, interviewees mentioned they are actively working to operationalize the strategic plan. The documents provide clear expectations and consistent communication, and they espouse other values too, including a deep and authentic commitment to students and employees.

The majority of references to Leadership and its sub-themes came from the in-depth interviews, which were the best method for exploring the campus’s Basic Underlying Assumptions. All twelve respondents directly mentioned President Rice, other members of his senior leadership team, or the leadership team as a whole. There were specific comments about leadership’s commitment to the campus, including President Rice’s years of service and open-door policy, the clear and consistent communication by all senior leaders, and UMPI’s ardent commitment to students and employees, evidenced by teaching, support and training opportunities among other things.

Leadership and its four sub-themes developed out of multiple smaller sub-themes including consistency, clarity of vision, accessibility, transparency, clear expectations, and specified value for employees and students, including support like training and development and creating a fiscally sustainable model. The theme is comprised of sub-themes Leadership vision and commitment, Communication, Leadership values students, and Leadership values employees, all of which are defined in the following sections.
Leadership Vision and Commitment

The first sub-theme, *Leadership vision and commitment*, captures references to the campus administrators’ vision and commitment to the university. Evidence of this sub-theme was found in transcripts from all twelve interviews, in the strategic plan, and in the recently redeveloped organizational chart. UMPI’s 2020 Strategic Plan (Appendix A) and 2017 revised organizational structure (Appendix C) were two of the documents reviewed by the researcher in order to understand the University's Espoused Beliefs and Values. The strategic plan was revised in January 2018 so it includes a current reflection of the community’s vision. Leadership vision and commitment was referenced 41 times in the strategic plan and a total of 202 times in the 12 transcripts. In August 2017 UMPI moved from a hierarchical to a matrix organizational structure - another indication of the leaders’ vision.

References to Leadership vision and commitment generally included observations about the administrators’ vision and ability to make and commit to strategic decisions. They also are willing to take creative risks with initiatives and know how to build the teams necessary to implement them. With regard to vision and strategic decisions and taking creative risks, the President and his Cabinet were credited several times for leading the institution in innovative directions. First, it should be noted that the President is also the University’s Provost and Vice President for Academic and Student Affairs, which is an unusual and large undertaking. In addition to revisions to the Strategic Plan and organizational structure, the Cabinet has led or championed numerous initiatives, such as the creation of UMPI’s Service Promise “Excellence, every day!”, and the creation of Competency Based Education (CBE). The CBE is a comprehensive Bachelor of Business Administration degree in the School of Business which incorporates a specialized tuition model and courses: students complete as many courses as they
can for the flat cost of $2,000 per semester. The President and his senior leadership team also
prepared to launch *Lean Thinking*, a strategic approach to implementing LCI across the
institution. They hosted a day-long training and awareness session led by the UMS’ Senior
Partner for Organizational Effectiveness and local expert on Lean. These initiatives and
supporting work have taken place within a two year period.

Often the Leadership vision and commitment theme was shared through the lens of
another topic, like campus involvement. For example, the Associate Professor of Business
Administration and coordinator of the Competency Based Education program, said, “It doesn’t
matter what department you’re in or what level they’re at or their roles and responsibilities are, I
think leadership across the board is eager to become more involved and attempt to find ways that
make more sense.” A Dean talked about the difficult reality of having to close an undergraduate
program that was very dear to her heart. Her vision and commitment were reflected in the
decision to set aside her personal connection and rework the program into a master's degree that
will prepare students and benefit the region in a more effective way.

Other examples of Leadership vision and commitment include the President’s style.
UMPI’s Dean of Students said it this way:

Having (the President)…come on board and really create that cohesive culture of
leadership and ‘here’s what we value’… it really has helped and united the campus. I
think he sets the tone. I think it takes a really strong leader at the top who really has
influenced the kind of dynamic and direction… he has provided a very clear vision and
direction for the university.
An Administrative Specialist who works in the office of the Dean of the College of Arts and Sciences, talked about how and why he became President. She said, “The faculty here chose (the) President when he was Interim (President). And he was basically just appointed because the faculty just chose him and said ‘we don't want to do a search, we're happy with what we have’". She noted that an institution could go to search but that is risky because you don't know who will become your leader, whereas he was known by the community as someone who had been committed to the organization for more than 20 years. She added, "He's so committed to this campus, he's so committed to our students. He's so committed. And he knows all the history and the ins and outs and it's really hard for someone to step into that."

The Dean framed leadership this way, “I help (our employees to) be successful and then the relationships they have become much more solid. Then the whole department works better… you come alongside people and help… that’s what I like to do is come alongside.” She also noted that “managing people…it is a unique task. It is more than ‘you teach your classes and you do this work and you do that work’.

The University’s Vision Statement is “We will lead the State of Maine in delivering an affordable and accessible education with an innovative spirit and commitment to excellence.” The employees of the institution have every faith this will be accomplished. As one Administrative Specialist noted, “If (the leaders) say we’re going to do something, we’re going to do something. …If for some reason it can’t come true they’re going to tell you ‘this didn’t work (and) we’re changing gears.’” The Dean of Students talked about the impact of committed and visionary leaders on the institution. She said:
It’s really started to trickle down… everybody from an administrative assistant to a janitor in the residence halls… is really starting to feel some sort of change and be part of the bigger picture, which I think has had a big impact on our ability to be so successful.

**Communication**

The second sub-theme, *Communication*, emerged in response to multiple comments that campus leaders communicate frequently, are accessible, and have clear expectations. Communication was referenced 5 times in the strategic plan and a total of 307 times in the 12 transcripts. Generally, comments referred to communication that happened throughout the campus and with the community.

An Assistant Professor of Biology and Environmental Science and Sustainability said “The leaders value transparency and they value communication with the campus community to let us know… important things that are going on.” One Administrative Specialist agreed that transparency is important to the campus leaders, saying it is “Number one”. Two-way communication with the administration and the community is also encouraged and modeled. Several people mentioned that the President has an open door policy; some admitted they do go see him and others said they don’t but are glad to know they could. The Coordinator of Campus Engagement said, "(The President), for sure, is definitely a very vocal president and he's transparent in the most transparent way a president can be." Three people said they are concerned about the amount of time he commits to keeping an open door and worry that he is *too* available because they are afraid he will burn out. One faculty member noted, "The leader is… a very busy person but his door is always open anytime. Even from the planning stages… our leadership is really focused on getting our input." That carries through to the Deans’ level, too. One Administrative Specialist noted that her Dean is receptive and genuinely wants to hear what
other people’s ideas are. Most individuals commented on how good communication at the University is.

There are ways in which communication has improved in the past few years. A faculty member commented on how much she appreciates the ability to see and manage her budget. She noted, “We work with (our Chief Business Officer) monthly to be very open and honest about the money, where it’s going and how it’s being accounted for. That really helps us understand and be better managers.” Another change is in how Title IX responsibilities are communicated with the campus. One Administrative Specialist said she appreciates knowing how to help students if they approach her with concerns. She said, “These (trainings) are becoming more visible and talked about in public forums and through emails and notifications… so it’s really being showcased more than I think it ever was before.”

Another Administrative Specialist confidently put her training to use when a student approached her with an issue. She was able to connect the student with the appropriate people and said she even heard back from the Title IX Coordinator after the fact. “It’s one of those things… we’re all watching out for our students, making sure, if you see anything odd, if you feel something’s going on, (knowing) who to contact, that you should contact.”

With regard to communication the Administrative Specialist said, “I think it’s been a change with (the) President coming. I think he embodies… an air of civility and openness.” The Registrar said:

I believe we have pretty good open lines of communication between the offices that I regularly work with. Communication has been very good since I got here and everybody here seems invested in keeping it that way which is very good.
Communication, however, is not always perfect, and sometimes it gets sacrificed for the sake of efficiency. Without intending to Business Administration issued a press release about the Competency Based Education program before fully informing the campus. The whole program developed quickly and they were eager to get the news to the public before the start of school so that students could apply. As a result, there were some on campus who did not understand what the initiative meant or how it worked. In other examples, it was clear that faculty sometimes have a more difficult time staying connected because of their teaching schedule or other commitments.

One Administrative Specialist helps her faculty by filling in details they may miss, noting:

I’m the communication center for my college… (Faculty) don’t always read emails, they don’t always do the webinars, they don’t always go to the forums… so I’m the one that collects all the information and I make sure they get it.

One systemic feature that affects communication is the ‘silos’ created by departments. One person noted that he would like to see communication improved between faculty and staff. He noted that when people do get to work together on projects the communication and trust improves but barring that "it's almost like two different organizations that sort of have to work together almost a little bit by chance.” The Dean of Students noted this too, referring to silos as ‘gaps in the chain’. She said, however, the improved organizational structure is helping communication to improve.

**Leadership Values Students**

The third sub-theme of Leadership is *Leadership values students*. It refers to examples where campus leaders demonstrate value for students through teaching, learning, and support opportunities, as well as promoting fiscal affordability and sustainability for UMPI. The sub-
theme was referenced 75 times in the 12 interviews and 95 times in the strategic plan, artifacts around campus, and other documents.

One Dean summed up the overall sense that the leadership values students when she said, “Because we’re all here for students and if that’s not everybody’s focus then we’ve missed something.” She said the faculty and staff are constantly talking about what they can do to support students. When answering a question about what she enjoys most about her job, an Administrative Specialist talked about the indirect way in which she supports students. “I just enjoy providing support for my faculty which in my view is providing support for our students which is really our ultimate goal… to help our students and provide whatever (they) need to get their education.”

There are more specific examples as well. UMPI has students do field work starting in their first year so they become engaged early on with the campus and community of employers. One faculty member said: "we have all kinds of professional development training for teaching to try to get best practices for teaching with formative assessments and things that really help the students increase their ability to learn." When asked what he enjoys about his job he said it is helping students to overcome barriers. It is rewarding for him to see students work through the difficult portions of a course and end the semester with a sense of accomplishment. He also said he enjoys:

…the ability to work with students as they're transforming their lives. It's a very important stage for them and to be able to give them skill sets so they're competitive to reach their goals and get into med school and things like that are very satisfying.
On a small campus like UMPI it is not just the faculty who step into classrooms to support students. One Administrative Specialist whose role includes backroom IT support for faculty and staff said she also finds opportunities to work with students. She supervises work-study students and helps them through the technical pieces of their work, particularly with specific programs. She also goes into classrooms, presents to students, and helps the students and the faculty through any IT challenges they have. She even continues at home, “I check my emails from home to make sure students aren’t caught somewhere in the TK 20 program. And I answer questions on nights and weekends.”

Another Administrative Specialist noted that there is more of a focus on supporting students now than when she was a student in 2007. “The big push now is with student success, the internship programs, and career readiness, career readiness, career readiness… that’s really a very large focus now.” The President spoke about his own support for students and the best ways to operationalize their efforts:

I’ve tried to emphasize that everything we do is to best serve the needs of our students but that we do that through establishing collaborations and partnerships and developing our roles with that kind of mentality. We can’t serve the needs of our students if we are siloed if we are thinking about our own individual goals for our own department.

One Administrative Specialist talked about the President’s genuine support for students and how it has trickled down through the institution:

(Having) somebody who is more UMPI driven has made a difference and I know it’s made a difference with students. I know it has. I have seen it, I’ve heard it. You know they have no problem calling to want to come in and talk to him.
The Chief Business Officer talked about the President’s support for students in terms of how the University has to balance efficiency for process versus effectiveness for students:

He’s really about serving the students and making sure we’re putting the students first. In some cases it may make more sense for us to make sure to do a process effectively – it may not be the most efficient – but it’s effective. (We need) to make sure we meet the students’ needs.

Throughout the transcripts there are comments about the leadership’s focus on meeting students’ needs, including mental health, physical health, and academic health. The Coordinator of Campus Engagement echoed images and other colleagues’ references to supporting and valuing students:

(The leaders are) very invested in their student body and they’re always trying to figure out ways to make sure students are engaged. I see that product of our work and then when they succeed at something we try very hard to recognize their success… we’re always wanting to put them up there where they should be.

References to fiscal affordability and sustainability were seen throughout the campus and on the website and heard in interviews. One Administrative Specialist spoke about UMPI’s well-publicized initiative that gives "any incoming students… if they're eligible for a Pell grant and they complete in four years… they'll basically graduate with no debt." One of the benefits of the CBE program is that it allows students to take and complete as many courses as they can for a total cost of $2,000 per semester which is less than it costs for two traditional courses. Several of the www.umpi.edu webpages had text that referenced UMPI’s ‘low cost’, ‘affordability’, being ‘the right price’, scholarships, and payment plans.
Leadership Values Employees

UMPI’s leaders demonstrated value for employees through training, development, and support opportunities. The sub-theme was referenced 126 times in the 12 interviews and seen in a variety of artifacts around campus. There were key indications that leaders value employees including providing training and development opportunities, and setting the stage for empowerment, engagement, and problem-solving in teams.

One Dean talked about the need to create a work environment that allows faculty and staff to step back from their work and reflect:

Let’s not be (so) overburdened with the day-to-day tasks that you can’t think and develop and help everybody that works with you to be the best they can (be). Instead of pushing people to be outside all the time we reined that in a little bit right now to see if we can calm that down a little bit and really have them be reflective on how things are working.

Others noted they feel this support. One Administrative Specialist said, "(Leadership) is very supportive in letting us do things that we're passionate about and finding a way to work it into our work." Another Administrative Specialist said, "My department has been very helpful in that they've helped support me with doing the American Management Association classes and you get a certificate when you're done. I've been working on those for a few years now."

The Dean of Students appreciates that her staff has unique needs because of their roles in student development and student activities:

I’ve appreciated… (being familiar with) the schedules that both residence life and student activities have done…just the other day (one of my staff was) making a point that she just
needed to clear her head and I said “OK, go for it” and she did and came back with his…
really great idea… so I think it was really helpful.

The professional development opportunities for faculty have been growing for a few
years, and they are also starting to become more available for staff now as well. Others said they
regularly read or hear about training available on campus or via webinars, and the amount of
offerings is just right; the Registrar said he does not feel overwhelmed by them. Finally, with
regard to training opportunities, one faculty member noted:

Leadership is constantly sending around (notices about) workshop(s) or…conference(s)
and really encouraging folks, even if its slightly outside our scope of work but something
that might be something we could dabble in as we move forward… they’re really, really
good about encouraging people to do that.

Feeling valued at UMPI extends far beyond training and development opportunities.
When asked what leaders at UMPI value, multiple transcripts show terms like ‘engage all
employees’, ‘have them feel valued’, ‘help them understand they’re valued’, and ‘it’s really
focused on what our employees need to be successful”. The President said, “I’ve always felt
valued…I’ve always felt that all the way up to the top.” The Director of Community and Media
Relations said, “The feedback that we get is great and the things that are done to help with
employee morale… I talk about the Hoot Squad all of the time – it’s one of my favorite things.”
The Hoot Squad is a group of campus leaders, faculty, and staff who convene and create ways in
which they can thank and give back to the community. Examples range from hand-written notes
to events on campus. “I think (the Hoot Squad is) reinforcement of what’s already happening (on
campus).”
The administration gets credit for supporting employees' goals and passions. One respondent said "I overall feel very supported". Another said, "(My Dean is) really supportive", and one faculty member said, "I think right now what I appreciate… the most is the leadership support that I'm getting on initiatives that are very innovative."

**Conclusions.** The first theme that appeared in the data was *Leadership*. The sub-themes were *Leadership vision and commitment*, *Communication*, *Leadership values students*, and *Leadership values employees*. There are several important inferences concluded from this theme. First, faculty and staff expressed that leadership’s commitment to, and vision for, the campus had the largest influence on the University’s culture. Second, senior leaders were seen as being very accessible, communicating freely, and having clear expectations. Third, leaders demonstrate value for students through teaching, learning and support opportunities. Finally, leaders demonstrate value for employees through training, development, and support opportunities.

The University’s Vision Statement is ‘*We will lead the State of Maine in delivering an affordable and accessible education with an innovative spirit and commitment to excellence.*’ The statement sums up what was discovered in the transcripts. Examples of leadership’s vision and commitment included guiding the campus through creating and communicating a strategic plan and reorganizing the organizational structure to reflect a matrix style based upon the reality of the campus’ communication and operational needs. The move to a matrix structure was considered innovative, as was the move to implement Competency Based Education (CBE), which is the first program of its kind in the University of Maine System. In addition, the campus President demonstrated his commitment to the University with his more than 20 years of service, and they to him when they declared their decision to forgo a national search and appoint him.
The second focus of this theme was the pervasiveness of communication. Senior leaders were noted for valuing transparency and communication with the campus community, including two-way communication so they could receive and integrate feedback. The President’s accessibility was mentioned several times, sometimes with the concern that he could burn out one day, particularly given his multiple roles as President and Provost and Vice President for Academic and Student Affairs. That said, the campus community appreciated his open door policy, even if they didn’t need to reach him. The fluidity of communication flowed throughout the campus through the deans, colleges, and at all levels.

The third element that emerged from the data was the value leadership places on students, which is evident through teaching, learning, and support opportunities including the University's commitment to providing affordable education. One staff member whose first commitment is to supporting faculty mentioned her role in terms of how her work supports students. A faculty member said he enjoys helping students to overcome barriers. One member of the administration noted the President’s support for students through the simplification of processes. Another said there is a great focus on supporting students’ physical, mental, and academic health. Further, posters around the campus and data from the transcripts pointed to the University’s goal to create and sustain affordable education opportunities for all students.

The final sub-theme of Leadership was focused on leadership’s value for employees, including training, development, and support opportunities. Leadership indicated a need to relieve some of the burdens of day-to-day work so faculty and staff could reflect, learn, and grow. Others focused on the leadership’s commitment to training and development opportunities, particularly since things have started to improve fiscally. Many free opportunities are made available and encouraged. Further, there are committees and programs – like the Hoot Squad –
that exist to engage and recognize the efforts of employees, all of which helps morale. Many of
the staff and faculty said they feel supported and valued.

Throughout the Leadership theme, evidence from the transcripts, documents, and visuals
around campus referenced UMPI’s commitment and vision to creating a culture of
communication and support for students and employees. There were abundant references to the
appreciation for and access to the campus’s topmost leader, who serves in multiple roles, and to
the entire senior leadership team. Faculty and staff felt supported and also recognize the support
and value for students, noting that students are the central focus of their work.

**Campus Involvement**

*Campus involvement* and its sub-themes were mentioned several times throughout the
document reviews, transcripts from the interviews, and were visible on the campus. References
to Campus involvement and its sub-themes included evidence of the campus’ emphasis on
community engagement, campus involvement, and collaborating to meet UMPI’s goals.
Substantial evidence in this theme made it the second highest set of campus values. This aligns
with the literature where Employee Participation and Involvement were mentioned as the second
key cultural factor (after Leadership) to indicate an organization is ready for change (Arasli,
2002; Netland, 2016).

Campus involvement was visible throughout the campus’s Artifacts. The website and
flyers offered several opportunities to engage, both on campus and with the external community.
There were notices about guest presenters, a play, and multiple charitable events. The Student
Activities Office displayed a large and cheery calendar with events listed by date. The website
highlighted Gentile Hall and its fitness center, track, multi-purpose gym, pool, and rock wall in
the scrolling first page of information (http://www.umpi.edu/). Visitors to the very first page of the website could click on a large green rectangle that says “Connected to our Community: From classes that take on important community service projects to program and event collaborations to lifelong learning opportunities, we work in so many ways to impact the region around us. Learn More.” Clicking on “Learn More” took visitors to a page dedicated to engaging with the community (http://www.umpi.edu/for-the-community/).

Evidence of Campus involvement and community engagement were found in UMPI’s Espoused Beliefs and Values, too. The Mission states “We deliver exceptional experiences for learners of all ages to become informed leaders, engaged citizens and prepared professionals within their communities and beyond.” Further, one of the four institutional values is Collaborative. Finally, Goal Three of the Strategic Plan is called Community Engagement, which is sponsored by the President. The five initiatives of Goal Three clearly state ways in which the campus can operationalize Community Engagement.

Community and engagement references appeared throughout the campus’ Basic Underlying Assumptions, discovered in the interview process. Respondents emphasized close ties to the community including intentionally designed curricular opportunities. The interest to connect with the community appears to come from multiple directions: individuals’ desire to connect with the community, programmatic or curricular opportunities for students, and as a stated goal from senior leadership. Three respondents mentioned the President’s desire for UMPI to not be just seen as ‘this thing on the hill’. It was a high number for such a specific quote, which is an indication of leadership’s ability to clearly communicate this message.
Campus involvement and its sub-themes developed out of smaller sub-themes, including collaboration and student engagement. *Campus involvement* is made up of the sub-themes *Community, Engaged employees, and Working toward shared goals.*

**Community**

The first sub-theme, *Community,* captures campus members’ expression of a connection to the larger community surrounding the campus. Evidence was found in transcripts from all twelve of the interviews, the strategic plan, and in flyers found around campus. There were 93 references to community in the transcripts, 14 more in the strategic plan, and 39 references captured in hallways.

Community runs deep in the culture at UMPI and in the surrounding area and it can take a long time for newcomers to feel a part of the community. When asked whether she was from the area one staff member said no – but admitted she had lived there 37 years. Another person said that:

As an outsider to Northern Maine it’s been a little difficult because Northern Maine, just as a community, is very small town. Everybody knows everybody. I do think being from the outside it is hard to engage in the community a little bit more because everything’s kind of set already. It’s not that they’re not welcoming… but it’s a different environment than I’ve ever experienced.

Because the town is small everyone knows where UMPI is, but it wasn’t until recently that the campus and the outer lying community began to overlap. The President has been a key driver in connecting UMPI with the town. One Administrative Specialist said, “I think we’re moving even more in that direction. (The) President is very involved with wanting us to be part
of the community. He’s said we don’t want to be just ‘this thing on the hill.’” One Administrative Specialist said:

It has grown exponentially I’d say in the two years of this administration. It helps having a president who is vested with the campus itself and that permeates to the rest of the campus and it permeates to the outlying community. He believes in this campus and as a result everybody else is like the big cheerleaders as well.

One Dean connected community with future sustainability. She said community is “where you grow. If you don’t have (a) good relationship then we’re kind of messing ourselves up here.” Many faculty and academic programs are actively engaged in the community, including students doing field work and businesses and people coming onto campus. Many of the academic programs have advisory groups that include members of the greater community. This allows faculty to keep learning current and students to connect with future field work and prospective employers. Employers and members of the business community tell faculty and administrators what kind of skills they are hiring for. For example, after hearing from the community about its needs, UMPI created a certificate in Drugs and Theories. The connection to the community is so important for Business faculty that their offices are on the first floor of one building so they can be easily accessed.

Partnering in the community takes many forms. Space is made available to local groups who want to host events on campus. Staff, faculty, and students have a visible presence in the community in a number of venues and activities. Business, Criminal Justice, Social Work, and other programs actively engage with agencies and hospitals. One example that wouldn’t be possible without student help is the Hope and Justice project. The Dean of Students said, "I think that some of our faculty are phenomenal, like (the Professor of Criminal Justice) is one that
jumps to my mind and she's constantly doing things with Hope and Justice." It incorporates a 5K that is a fundraiser and awareness raiser. The Criminal Justice students do research for the battered women’s shelter, they educate the community, man the route, and then student-athletes run the route to make sure everything goes smoothly on the day of the event. The Project Management students work with all of the organizations to do the project management and help staff the event. Other events include Purple Pinkie Project (to eradicate Polio), Planet Head Day (to raise money for cancer treatments), a project that has students help train service animals, another that has students working in an orphanage, other students help create marketing materials, UMPI employees and students take part in parades, coat drives, and much more.

The faculty is reviewed annually on their community service, including the importance of bringing that back into the classroom. Students are actively engaged in internships, practicums, and clinicals. There is awareness around town, too. One Administrative Specialist said, “Especially if I’m wearing something with UMPI the students will say, ‘Oh, hi! We’ve seen you, we’ve met you.’”

The President spoke about Aroostook County and UMPI’s role as an economic driver. He loves this county and wants others to appreciate it is a great place to live and thrive. His vision for UMPI compels him to be out in the community meeting with agencies, businesses, and organizations. The President spoke about his connection to the community in a practical way:

We can only be (an economic driver) if we’re fully engaged across the board in initiatives that are happening in Aroostook County, whether they’re focused on the workforce and business, whether they’re focused on your long-term planning for the county, or whether they’re focused on how to bring new Mainers to the county.
UMPI’s leadership and the campus have been intentional with their initiatives to integrate with the broader community and it is paying off. The President said he would like to see 90% of the UMPI campus involved with the greater community and he suspects it is currently close to 75%, and that a few years ago it was probably 50%. The Director of Community and Media Relations estimates current involvement at 80%. As the CBO noted, when the President came into office he said “let’s re-engage with our local community and make sure we’re seen as a partner to them. We’ve really started to do some things to move that way.”

**Engaged Employees**

The second sub-theme of Campus involvement is *Engaged employees*. It emerged in response to employees feeling connected and involved with the campus. Occasionally references were of the campus itself, as in ‘campus is a special place.’ Employees sounding or acting engaged or referencing engagement occurred 194 times in the transcripts and 11 times in the Strategic Plan.

One Administrative Specialist shared her affection for the campus in this way, “this is such a unique little culture up here, it’s such a unique little place.’ The size of UMPI’s campus means that many ‘departments’ are one-person shops. The Coordinator of Campus Engagement said, “I know we’re small, so I think that some faculty or staff they have their niche… I think UMPI is so small that the niches are really one big niche.” The campus has fewer people than it used to, and in some cases, jobs have changed. The Director of Community and Media Relations noted, “We’ve got people who…never intended to do the jobs that they’re doing and they’re doing really amazing things.
The Dean of Students said her friends at other campuses do not have the same opportunities she has to get involved in multiple areas and help solve a variety of issues. She said, at UMPI:

I sit on some of our academic committees which is really interesting and gives a different perspective so I love… to be involved in things that broaden my horizons. I’ve engaged with people across campus that I probably wouldn’t normally ever engage with.

UMPI’s small size means that faculty and staff engage in ways they might not at a larger university. One Administrative Specialist said that sometimes they all have to pitch in, “for this campus to be viable, and for us all to have jobs, and for us all to continue to be here… we’ve all had to chip in.” Indeed, there were references to the Chief Business Officer setting up a Polycom connection for another team’s meeting before heading outside to make sure there was enough salt on the sidewalk, and one of the deans scrambling to find chairs for a classroom.

Goal One of UMPI’s Strategic Plan is called Campus Culture. It states: The University will enable all employees to achieve their potential while also enhancing a sense of community and campus pride. According to the President, employee engagement is a critical component. He describes it as the linchpin, without which the other goals will not happen. He said:

… we can't get to Goal Two, Student Success, if people don't feel that they are being positive contributors and they're valued and that what they're doing is both making a difference but also that they can actually have input into fashioning the goals and the outcomes that we're looking to achieve.

The Dean of Students talked about employee engagement in this way:
I think it’s really started to trickle down… I mean everybody from an administrative assistant to a janitor in the residence halls… is really starting to feel some sort of change and be part of the bigger picture, which I think has had a big impact on our ability to be so successful.

The Dean of Students primarily engages with the Strategic Plan via the second Goal, which is called Student Success. Her focus is on the four strategic directions of Goal Two and figuring out how to help her team “live and breathe them every day”.

There are new initiatives taking form on campus. Some of them are directed by the University of Maine System and many are born out of ideas by staff and faculty on campus. In all cases, employees seem to be finding ways in which to engage via new projects. One Administrative Specialist spoke about Concur, which is an online travel and purchasing system. She enjoyed being in on the “ground floor” to help develop and learn it so she could help transition UMPI to the new system. The Director of Community and Media Relations said that “it’s really exciting to be in a place where somebody can just throw out an idea and somebody will be like, ‘yeah let's do that!’” The Dean of Students agreed. “I think there’s a lot of encouragement of people kind of going out and coming up if they have an idea to follow it through and to kind of take a risk.”

Employee engagement can lead to improved morale, as noted by one Administrative Specialist. She shared an appreciation for good work getting recognized. Whether in person, by email or by the ‘Owl in a Day’s Work!’ cards that read “Thank you for Owl that you do to make such a difference to our faculty, staff, and students.” She said they make a huge difference. She also mentioned the day each spring when the campus comes together to make the campus shine. “That’s when you get to see how much people really care about (the campus).” Volunteers bring
their own rakes and shovels, and everyone pitches in. The President agrees there is a “sense of community and a sense of overall morale (improvement) because people are realizing they can have positive and productive input into achieving our goal of ‘excellence every day’.”

When asked what they enjoy about their jobs, staff and faculty referred to involvement in the campus. One faculty member said he is actively involved because he wants to be, not because he feels obligated to be. He said:

I take on quite a bit. I get involved in a lot of committee work and teaching. I always teach overload and I take on as much research as I get so it’s just time that is the limiting factor, and that’s really just a function of how many things I’m involving myself in.

One Administrative Specialist also said she likes what she does, and she likes being busy. Her role allows her to use the skills she learned in school. She stated, “I just love being faculty support, I mean I’ve always loved this type of work, it’s different, it’s busy some days are just BOOM, just go go go all day. For me it’s awesome.”

The Dean of Students talked about how much she enjoys working with her team, generating ideas and problem solving together. The CBO likes working through issues with those around him, which he said is both challenging and fun. The Coordinator of Campus Engagement gets a great deal of joy and pride pulling together events for students.

**Working toward Shared Goals**

The third and final sub-theme of Campus involvement is *Working toward shared goals*. It emerged in response to multiple comments in the transcripts about leaders, employees, students, and community members collaborating on projects that benefit the institution. Comments about
working toward shared goals appeared 188 times in the transcripts and 15 times in the Strategic Plan.

UMPI offers 22 bachelor degree options that include education and professional degree options like athletic training and business administration. The nature of the curricula may help drive community involvement and the faculty, schools, and health care agencies are very involved with faculty and students. UMPI has a Center for Teaching and Learning, which opened in 2013. The very nature – and vision – for the Center is a place where “…faculty, staff, students, and community members work in a collaborative environment to create rich, engaged learning and teaching experiences…” (Proposal to Establish a Center for Teaching and Learning found at: http://www.umpi.edu/static/neasc/Standard%205/Teaching%20and%20Learning%20Center%20Proposal.pdf). Staff and faculty in the Center are able to work together to help improve each other’s teaching content.

Student teachers do field work from the first year they’re at UMPI, which means from the beginning they are working with faculty and local professionals in their field who are designing curricula and opportunities to help them succeed. When asked what she enjoys about her job, one Dean offered, “To come along (side) different departments or local employers like TAMC (The Aroostook Medical Center) and say, “OK, what can I do to help you today?”

Working together to support and develop students goes beyond the classroom and fieldwork. UMPI's campus culture includes a strong sense of problem-solving, whether its enrollment or fiscal issues, scheduling complex meetings, organizing commencement, or creating ways to support individual students. As one Administrative Specialist noted, “It’s… one of those things… we’re all watching out for our students.” Working together also includes working with other schools in the area like the University of Maine at Fort Kent and Northern
Maine Community College. As the CBO noted, “there is a strong focus… on leveraging and working together… to partner across institutions to where we can best serve the state and the county versus working against each other like maybe we’ve done in the past.” Others cited this sense of community problem solving as integral to the campus’ values, and Collaborative is the second of four institutional values listed in the Strategic Plan.

The Strategic Plan 2020 is an example of a campus-wide collaboration that began in 2013 and most recently was revised in 2017. Each section has a committee dedicated to implementing and assessing the actionable goals. The president and leadership team led the effort which included multiple opportunities to share input. The plan is designed to be operationalized by all staff and faculty.

In the summer of 2017, UMPI published a new organizational chart (Appendix C) which reflects the essence of its collaborative environment. The old chart (Appendix B) was updated just one year prior and was built on a traditional hierarchical design, with all employees reporting to the person in the position above them until reporting lines reached the President and Provost at the top. The new chart still shows lines that flow up to the President, however, this new model clearly differentiates between direct reporting lines, indirect reporting lines, and adds a whole new layer: direct communication line. This reflects the communication reality of the campus more clearly without diminishing the role of the UMS personnel who supervise some campus members.

The President spoke about his desire to spread a culture of working together to solve problems. He wants Cabinet members to want to attend meetings, so they can work through issues and address and solve conflicts, "not in an antagonistic way" but through discussion.
Throughout the campus, he strives to pull people out of the silos that are considered normal in higher education, and what he sees as being the biggest impediment to solving problems.

**Conclusions.** The second theme that appeared in the data was *Campus involvement*. The sub-themes were *Community, Engaged employees*, and *Working toward shared goals*. There were several important takeaways that emerged from this theme. First, campus members expressed a connection to the larger community. Second, employees were connected and involved, and felt that UMPI was a special place. Finally, leaders, employees, students, and community members collaborated on projects that benefitted the institution.

All twelve interviewees mentioned the campus’ connection to the community, which is the first sub-theme that emerged. In the past few years, the President has led an effort to purposely connect the campus with the community so residents of Presque Isle don't just see the University as "this thing on the hill." His efforts are working; 75-80% of the campus is reported to be involved in a variety of local (non-campus) activities, businesses, and agencies, whereas a few years ago it was closer to 50%. Volunteer, charitable, programmatic, and curricular efforts intentionally bring students, employees, and area organizations together.

Faculty and staff saw the importance of broadening their reach and spoke about sustainability for both the campus and Aroostook County. A few mentioned the reliance both had on each other in terms of preparing students who can remain and work in the County and be seen as a serious option for high school graduates. Faculty were reviewed annually on their community service but said they invested the time because they enjoyed doing so.

The second element of this theme was employee engagement and the feeling that UMPI was a special place. Terms like ‘unique' and ‘niche' were used to describe the culture. UMPI is
small and respondents said the campus relies on staff and faculty to pitch in and participate in ways they might not have to at a larger university. All accounts indicated they were happy to do so and saw it as a way to keep the campus viable. The President shared that employee engagement is at the heart of the first goal of the Strategic Plan, which is campus culture. In order for the other goals to take effect, staff and faculty need to feel connected to and invested in the campus.

The third and final focus that emerged from this theme was working toward shared goals. The Center for Teaching and Learning was created in 2013 in order for students, staff, faculty, and community members to develop and thrive in collaboration. The reality of collaboration at UMPI resulted in creating a new organizational chart, which honors the communication lines of staff and faculty. Collaborative is the second of four institutional values presented in the Strategic Plan.

Throughout the Campus involvement theme, evidence from the transcripts, documents, and visuals around campus reference UMPI’s engagement with the campus and the greater community. There were also multiple references to the need for engaging with each other and working together to solve problems. Faculty and staff referred to UMPI as a special place and are engaged in various ways, on campus and off.

**Perseverance**

Perseverance and its sub-themes were mentioned several times throughout the document reviews and transcripts from the interviews. The theme developed because occasionally respondents referenced a barrier or the fact that things used to be more difficult than they are now. There was a distinct sensation of hope and fortitude in the transcripts. Some of the
comments made the interviewees sound like they would not give up, even if things got much worse.

Perseverance appeared in a few Artifacts, including a bulletin board that encouraged students to persevere through to graduation. It also appeared in the Strategic Plan as an Espoused Belief and Value, because *hard working dedicated employees* was listed as an inherent campus strength. Primarily, however, evidence of resolve, overcoming barriers, and references to a difficult history emerged from the interview process. Perseverance did not emerge in the general literature as a key cultural factor that indicates an organization is ready for change, although there was an indication that past experiences, fears, and worries may keep as much as 50% of change initiatives from succeeding (AL-Abrrow & Abrishamkar, 2013). In this study, the theme *Perseverance* is made up of the sub-themes *Resolve, Barriers, and Difficult history.*

**Resolve**

The first sub-theme of Perseverance, *Resolve,* captures campus members’ expression of doggedness and belief that things are getting better. There were 66 references to Resolve in the transcripts.

One of the strengths listed in the Strategic Plan as part of a SWOT (Strengths, Weaknesses, Opportunities, and Threats) assessment was *hard working dedicated employees.* Evidence of this emerged from the transcripts, but it revealed itself as something more. There were a noticeable determination and resilience in the comments; a belief that things are getting better. One faculty member said it this way, “I think for the first time in a long time UMPI is on the cutting edge… and I appreciate being a part of that.”
Others referred to things being difficult (not enough resources, needing to cross-train and generally keeping up with initiatives) but consistently did so with an air of positivity and hope. Another person acknowledged her own challenges with writing, working as an introvert in an extroverted world, and needing to overcome a lack of experience. She said, "You know, I'm willing to learn and grow and take criticism."

One faculty member was among those who referenced some of the challenges facing UMPI and said "(it's) simply the nature of the beast right now. But I assume that will turn around in time." When talking about the very successful Competency Based Education (CBE) program she initiated in the fall of 2017, she said: "maybe (we were) a little too innovative (laughter).” The program was built for 25 students and accepted 140 because of high demand. What keeps her going during the stressful days is knowing what this opportunity means to the adults returning to school. They are sharing their stories about how they never thought they would be able to return and finish their degree. She said knowing “we’ve provided that pathway…It’s such a good feeling.”

There are multiple initiatives that faculty and staff need to keep up with; some were developed by UMS and others by innovative and persistent faculty and staff on campus. A few employees mentioned that they are inspired by the multiple and creative ideas that are regularly generated. That said there is some concern noted in a few of the answers that UMPI may be taking on as much as it can handle right now. The Dean of Students admitted the campus may have reached a saturation point yet does so in a way that indicates she has not lost her desire to keep going:

We love what we’re doing, (we) keep doing (it), but then you kind of lose momentum a little bit because there are so many different things going on… I think we’re in a spot
now where I think the trick is to keep sustaining it. Some days it feels like ‘Oh, it’s another new one’ (laughter). I think for the most part everybody is OK, we get it, but WOW, this is hard work (laughter).”

Faculty and staff consistently referenced a desire to keep moving forward. Even those who referenced challenges spoke about the momentum they have achieved; no one said they are fed up or have had enough. Although, there was some caution toward finding balance and creating a sustainable workload. Throughout, comments indicated a belief that things are getting better and that morale is high. One of the tangible data points for high morale was mentioned in terms of not needing to worry about staff running out of sick or vacation time. The CBO said that employees and faculty tend to come to work, even when perhaps they should not, which he sees as evidence of their dedication.

Barriers

The second sub-theme of Perseverance, Barriers, exists because there were comments about policies, processes, or people that make it hard to do work, as well as not having enough resources. Evidence was found in transcripts from the interviews and the strategic plan. There were 164 references to Barriers in the transcripts, and 10 in the Strategic Plan.

Like all organizations, UMPI has barriers to overcome. Sometimes policies put a limit on what can happen, as with federal regulations surrounding financial aid. Some policies are generated by UMS to make work easier for the needs of System staff, but create burdens on staff, faculty, and students.

Sometimes processes make work challenging, as when processes are manual (i.e., require entering data manually) or when communication breaks down. Staff mentioned communication
problems between departments, within departments, and issues with Gmai. One Administrative Specialist said, "Some of my faculty are real cryptic… I've tried to learn to read cryptic, but it can be difficult (laughter)." Others talked about the struggles of communicating between departments. The sheer number of "hundreds" of emails and busy schedules make this challenging. One person noted people have different ways of communicating and its one of the things they have to be sensitive about.

The Registrar mentioned some of the challenges of working with both faculty and staff. He said, “It’s almost like two different organizations that … have to work together almost a little bit by chance.” Communication issues can develop because the processes or roles are not clear, or because there is not a natural conduit of communication.

Sometimes people are the challenge, as can happen when the culture or the organization wants to move ahead and individuals are not ready. One person spoke about challenging situations with people this way:

It doesn't always happen, but… you always have a couple of outliers and there's nothing you can do about the outliers. But I think they're an exception to the rule and eventually, those people will either leave or they'll retire or something because they don't fit in with the culture.

Others noted that with support and persistence and “nudging” people will come along slowly. The President noted that not everything is perfect. For him, a big frustration is trying to figure out how to engage more people. If there is a conflict or a barrier to engagement he wants to find a way around it.
A number of barriers mentioned relate to UMPI not having enough resources, in particular, not as many staff, faculty, or administrators as they should have to do the work. One person said, "I report directly to the Provost but at the moment we don't have a Provost." The lack of staff results in limits to how involved people can be, and how much direction and support there is. Sometimes the shortage of resources makes it difficult to send people to training as often as they would like. Sometimes a shortage of staff impacts other wish list activities people would like to do, as in the case of the Dean of Students who would like to have time to do research or present and share findings they have already made. One faculty member noted, “I’m so busy I’m literally working over 100 hours a week.”

The interviewees were realistic about why there is a shortage. Fiscal challenges in previous years resulted in unfilled positions and layoffs. Now that things are better the University is being cautious to make sure it is hiring responsibly. One faculty member noted that even with CBE:

We’re really working on a shoestring budget and we’re going to do it for probably another year because we want to make sure it’s not a flash in the pan before we add permanent positions… so it’s a little too much and it gets a little crazy.

Throughout the transcripts employees and faculty referenced issues like budget cuts, layoffs, or wearing too many hats. The Dean of Students noted, “There are a variety of reasons why I have all these different hats… (but the reality is) I’m filling the role of two to two and a half people.” One Dean said, “Everybody’s…maxed out every minute. It’s not like we have anybody that’s just sitting around looking for something to do.” The Director of Community and Media Relations said, “We have so much change and transformation and new ideas coming at us all the time it's just hard to keep up with it.” Still, staff and faculty remain optimistic. One
Administrative Specialist said it’s been a struggle but it’s improving, and the Coordinator of Campus Engagement said that sometimes the busy schedules of her work study students create barriers and she could use more help, but at the end of the day the work always gets done.

**Difficult History**

The third sub-theme of Perseverance, *Difficult history*, emerged from references about a past difficult time, including people or processes that are no longer barriers. There were 85 references to difficult history in the transcripts.

One Administrative Specialist credits UMPI’s Chief Business Officer for helping to pull the campus out of a difficult fiscal time:

> It’s the best thing this campus ever did was hire him. Because I’m telling you, he’s so good. And he’s so good with the budget and he really got people back on track. He really started looking at everything with our new programs and things; things are really turning around for this campus.

One faculty member also appreciates the communication and support from the CBO’s office. She noted that previously “I was never allowed to see my budget. The previous CBO that handled that.” Others shared their appreciation for the President and the rest of leadership and noted what a big difference the change has made. Someone said that previously the institution was on autopilot. The campus was spending and not holding people accountable. One Administrative Specialist said, “It got really tense for a while…things are better now, thank goodness.” One faculty member noted, “(The) leadership we have now is very different than the leadership we had prior… we’re really happy with the leadership as it is.”
Even though things are better they are not perfect. Past financial issues put stress on the campus that will take a while to recover from. One Dean noted, “We pushed everybody quite hard so we’re pulling it back just a little bit.” She also said there are still some challenges because in the past personalities and relationships were a little broken. One Administrative Specialist observed, “There’s an intentional direction to make people feel like they can trust, and I think that sometimes that’s a little hard cause there’s such a history.” One person noted there are still grudges held for something that happened four presidents ago. Overall, that is getting better. Several people mentioned a campus culture shift toward civility and inclusion and openness. Another Administrative Specialist said she appreciated the President’s style because he listens.

Conclusions. The third theme that emerged from the data was Perseverance. The sub-themes were Resolve, Barriers and Difficult history. There were several assumptions that emerged from this theme. First, campus members expressed a doggedness or persistence that was buoyed by the belief that things were getting better. Second, policies, processes, people, and a lack of resources sometimes made it difficult to get work done. Finally, references to people or processes in the past alluded to a difficult history.

Resolve was an interesting sub-theme to emerge from the data. It was not a word that was spoken by any of the interviewees, but it clearly materialized from the transcripts. Without exception, any time a respondent mentioned a barrier or a difficult time he or she countered it with a comment that showed resilience, hope, or willingness to keep working. It was as if the difficult time was not making them feel less affection for UMPI, but rather almost added to its charm.
When respondents mentioned difficult times they justified them by saying they understood why things were difficult, given all that has transpired. They also said how much better they are now than they were. They also said things like “it’s the nature of the beast”, “I assume that will turn around in time”, and “we love what we’re doing”. There seemed to be an understanding that many of the initiatives that kept them busy were of their own volition, even if the reasons for the initiatives were altruistic (to grow enrollment, support students, or create innovative offerings to meet the County’s needs.)

The second sub-theme within Perseverance was Barriers, and it referred to some of those challenges. Generally, the barriers were either policies outside the control of the campus (federal regulation or UMS driven) or processes and people that could be massaged over time. Communication was determined to be a process barrier at times even though it was mentioned as a positive driver and sub-theme of the first theme, Leadership. It was reported to be a challenge between departments, particularly between staff and faculty, and also be at the root of some issues with Gmail and unclear roles.

People were seen as barriers at times, particularly with regard to holding onto past practices, grudges, relationships. UMPI's momentum right now is moving in a progressive and innovative direction and those that hold back progress stand out. Those people are referred to as "outliers" and the exception to the norm. Generally, comments pointed to the ability to nudge people along.

Perhaps the largest barrier and one that almost earned its own sub-theme was the notion that UMPI does not have enough resources. Staff and faculty layoffs, losses through attrition and positions that have gone unfilled have led to some staff working “two to two and a half positions” and faculty working “100 hours a week”.
The final sub-theme is Difficult history. Comments about a past difficult time were subtle because they were often referenced in terms of why things are better now. Fiscal challenges are now better. Leadership is now better. Civility, inclusion, and openness now have a prominent presence on the campus.

Trust

*Trust* and its related sub-themes were referenced multiple times throughout the transcripts of the interviews. It refers to campus members’ trust for each other to do their work and support the goals of the institution, as well as trust that they can ask questions and ask for help without fear of repercussion.

Trust develops through relationship building and requires honesty. There were multiple examples of trust and honesty at UMPI that emerged as Basic Underlying Assumptions. Several times employees (whether staff, faculty, or administrators) expressed humility about decisions they made or things they could do better. They shared that meetings regularly provide a forum for honest feedback and that it is a tone set by the leadership. Further, relationships are immensely important to the leaders and all of the respondents. The entire organization is designed in a communication matrix style, which underscores their reliance on relationships and working together to accomplish campus goals.

Finally, the employees at UMPI feel empowered to do their work, to ask for help as necessary, and to make any changes necessary to do their work in a more efficient way. There were multiple examples of employees offering creative ideas and reaching out to each other – something that might not be possible in cultures where honesty and trust are not present. Trust and the need to build relationships emerged a few times in the general literature as a key cultural
factor indicating readiness for organizational change (AL-Najem, Dhakal, & Bennett, 2012; Anderson & Kumari, 2009). There were no references to a need for honesty, but several that made clear the importance of empowered employees (Arasli, 2002; Bhasin, 2012; Dombrowski & Mielke, 2013). In this study, the theme Trust is complemented by its sub-themes Relationships, Empowered employees, and Honesty.

Relationships

The first sub-theme of trust is Relationships. It refers to relationships with peers, students, community members, and leaders. There were 81 references to relationships in the transcripts. Interviewees mentioned relationships either overtly – “good relationships with peers” or “good relationships with students”, or within the context of other topics – “The education faculty are engaged with the educators.”

Staff and faculty stated that building relationships is integral to growth and delivering what is needed in the community and with other institutions. The President attends meetings in the community, including with the Tribal Chief of the Maliseet Indians, business owners, and clubs, and he works with other campuses in the UMS to create programmatic options. He tries to set an example for establishing partnerships and show how that helps them serve their students. He said:

I’ve tried to emphasize that everything we do is to best serve the needs of our students but that we do that through establishing collaborations and partnerships and developing our roles with that kind of mentality in mind.

The Director of Community and Media Relations complimented the President’s style:
He is somebody who works really well with other people… his interpersonal skills and understanding those relationships and getting people to do the work that has to be done on campus. He just has a really nice way of doing that work.

Staff and faculty also talked about relationships as key pieces that help them build trust, share skills, and accomplish work on campus. One faculty member spoke about relying on others with experience in areas she doesn’t have, and her ability to support them in areas in which she has knowledge. Another faculty agreed and noted, “The faculty collaborate with each other. We talk frequently about different approaches because sometimes we’ll run into the same kind of issues within our classrooms.” The Registrar builds relationships with other Registrars around the state. “We have a group that meets regularly and every Registrar in the system is a member. We email back-and-forth a lot so we share experiences and ideas and ask questions.” He also said he appreciates the communication and trust that has developed by working together with other offices like financial services, and he expected that to continue.

The office of Community and Media Relations builds relationships that help them work effectively in higher stress times. The Director said:

My office does something fun… every day. I love that my crew, the four of us, work really well together. We laugh a lot, we have a lot of fun together. We have a very high-stress kind of office environment sometimes because the work that we're doing has to happen so quickly and it's all on hard deadlines.

The Dean of Students agreed that building relationships helps people to work more effectively when things get challenging. She commented that building relationships has helped her see and hear others' perspectives. "I think that’s been a huge benefit, just getting to know
One Dean noted that trust leads to better communication and others agreed. The President spoke about having discussions, “not in an antagonistic way… (but) over things that matter, (about) how we can get everyone one moving forward.” The Dean said she likes to offer help and knows the gesture is appreciated, “I (see) them smile and say ‘you will help me’ and it’s not something that I’m just saying… I’m… really going to try to help you.” She also passes along her skills, noting “I’ve really tried to empower them to be those relationship builders and to think a little more globally.”

**Empowered Employees**

The second sub-theme of trust is *Empowered employees*. Empowered employees are those who are trusted and supported to make decisions, including decisions about time management and whether and how to innovate. Making decisions at work requires clarity of role and expectations, but it also requires trust. There were 81 references to relationships in the transcripts.

Employees at UMPI expressed empowerment in a variety of forms, for example, every administrator, staff, and faculty member interviewed said they are trusted to manage their own time. Some employees stated they could work at home if they needed to. The Dean of Students and Coordinator of Campus Engagement reflected on the unusual time demands created by the Student Activities office. Both stated that without flexible and creative schedules the office staffing structure would not be able to support students’ needs. The CBO said that he needs to manage his own time so that he can be responsive to multiple departments. “I’m… jumping back
and forth between everything from finance to food service to facilities to all over… but you know if I wasn't able to I wouldn't be able to get anything done.” The Director of Community and Media Relations talked about time management in this way:

Not only are (employees) given permission (to manage their own time)… the onus is placed upon them almost completely. (Then) we get together and we meet and we talk and we collaborate on projects and each person does his or her part to make that magic, but it doesn’t get done unless they are getting responsibility for that work.

Empowerment at UMPI was also expressed in terms of ownership. All over campus employees identified needs that needed to be filled and met the challenge. One Administrative Specialist created a policies and procedures manual that she uses regularly. She also finds comfort in knowing that if someone needs to help fill her duties it will come in handy. She also asked if she could take on the task of placing orders for textbooks because she felt in doing so it would help the overall process. She admits to making a lot of changes with the approval of her supervisor. She does so whenever it leads to efficiency, which he supports. She believes it helps out the office, stating, “Well, he’s so busy, too. He doesn’t have time to handle every little minutia of detail, as long as I’m getting things done.” Another Dean supports this, saying this about her own support staff, “I have her do things, I don’t double check her. I know she does her work and she owns it and I just come alongside and help her own that.”

The Dean also spoke about the difference between possessing a responsibility or task at work and owning it:

Well, I think when you get possessive it's like ‘don't touch it, don't tell me how to do it, I know how to do it all by myself, I’ve got it.’ But if you own it you can say ‘let’s see how
this works and is there anything else that I can do (to be) better with that?’ If you can get
them to own it... they can be proud of it.

Some staff and faculty spoke about empowerment in terms of being able to make
decisions and ask for help because they have trust and support from leadership. One faculty
member said, “My God, I talk to (the President) every day several times a day or if I don’t, I
know I can.’ She also said she is working monthly with the CBO to “be very open and honest
about the money, where it’s going… how it’s being accounted for... (it) really helps us
understand and be better managers.” One Dean said, “I enjoy (the President’s) style and we trust
each other, and I can say… ‘I need some help with…’ and I don’t feel like I’m afraid to ask for
help.’ That trust and support lead to the confidence needed to innovate and make changes to the
way people do their jobs. The Director of Community and Media Relations said, “I think it all
kind of comes together that way so when somebody has an idea and they are encouraged to make
that happen…somebody will pop out with something and so it’s just fun to implement.” Every
one of the respondents said they feel comfortable making changes to the way they do their work.

Honesty

The third and final sub-theme of Trust is *Honesty*. It emerged from employees’ comments
about honesty or willingness to act with honesty in the workplace. There were 89 references to
honesty in the transcripts.

Comments were either explicitly about honesty, like one Dean’s statement, “I think we’re
just trying to be honest and open with each other and help each other grow,” or more implied,
like one faculty member’s observation, “Maybe we should have postponed and taken more time
to get more resources…” which was a statement about her college’s readiness to implement the CBE program.

Respondents consistently expressed the ability to communicate honestly. The Coordinator of Campus Engagement said, “I’m on a lot of committees and no one is afraid to speak up and talk about an issue or to praise someone or to think of a new idea.”

Three respondents spoke honestly about programmatic decisions at UMPI. One faculty member said that in designing the CBE program they were surprised by how complicated it was to innovate within the current policies and procedures. “There isn’t one policy, procedure, or process that … can be used for the CBE model. We didn’t think it was going to be that far off.” Later, after launching a press release about the CBE program they learned they had underestimated the rest of the campus’s awareness about the program. She said, “…we missed the mark… because we assumed that people knew what it was.”

While that faculty member was making decisions at the beginning of a program, another one had to make the difficult decision to end a program, “(We had) to make the choice for our students so that they have many opportunities, (to take) a step back and say you know, are we meeting the standards of an athletic training program?” In the end, they realized they weren’t and reconfigured the program more broadly so more students could benefit.

The Dean of Students’ honest reflections about programming were related to dual enrollment. Dual enrollment is an opportunity for current high school students to simultaneously enroll at UMPI and potentially graduate much sooner. Her questions were related to the responsibility the University has for supporting all students based on their developmental need, and wondering whether the University is adequately prepared to support these younger students.
There were also several sets of comments that showed respondents’ humility and willingness to be honest about their own skills. One faculty member spoke about sometimes choosing to miss campus meetings because there is so much work to do, although he did say that if he had a concern he would make the time. The President said he tries to model ownership by admitting when he has made a mistake. He said:

That’s the worst thing they can do if we’re trying to meet our students' needs is to keep doing something and plowing ahead because you're too worried about what people are going to think if you admit weakness or anything like that.

He said he also hopes his honesty helps create a climate for communication and trust. Several people spoke about the real difficulty in trying to keep up with so much change and so many initiatives. Others said they were concerned about forgetting to communicate up or down the line – despite good intentions – in the midst of so much change.

**Conclusions.** The fourth and final theme that emerged from the data was *Trust*. The sub-themes were *Relationships, Empowered employees, and Honesty*. Several inferences appeared in the data. First, building relationships are integral to meeting the needs of the community, the students, and for developing programs with other institutions. Second, empowered employees who are trusted and who own their work are able to make decisions and be innovative. Third, honesty at UMPI has led to programmatic decisions and helped foster a culture of communication and trust.

Staff, faculty, peers, students, and community members build relationships in order to further the work of the University. There is a strong culture of collaboration at UMPI; several faculty and staff regularly serve on committees, the President has said it is one of the most
important values, and it is one of the values listed in the Strategic Plan. Others backed up his own leadership style with regard to collaboration and relationship building. Several respondents indicated a feeling of trust and improved communication that is furthered by relationship building.

Empowered employees at UMPI exhibit a feeling of trust and confidence in making decisions, including those that lead to innovative practices. Every respondent indicated he or she is trusted to manage his or her own time, and a few said that without that they would be hindered in doing their jobs.

There was a strong sense of owning work at UMPI, which was distinguished from possessing work. Several people indicated a sense of comfort and pride in owning the work they do. It appears to be a way to work together, take responsibility and make the University better.

**Conclusion**

The purpose of this case study was to understand the conditions and environments that are present during the institution-wide application of Lean Continuous Improvement (LCI) at the University of Maine at Presque Isle. This research used a qualitative, case study methodology to research the following questions: Under what circumstances or settings are the methods of LCI applicable to an entire college or university? The two sub-questions the researcher sought to answer are: What factors or characteristics are significant in colleges or universities that adopt the use of LCI? And what challenges or obstacles do universities confront when applying LCI to their institution?

Schein’s Organizational Model of Culture (2010) model depicts three layers of an organization’s culture: Artifacts, Espoused Beliefs and Values, and Basic Underlying
Assumptions (2010). Multiple and varying methods were used to identify and analyze UMPI’s culture at all three levels. Schein’s model was an important choice for this study because it guides the researcher through the layers of culture. In this research, the surface level artifacts were observed – buildings, classrooms, offices, websites, public spaces, signage, and flyers. The second layer was discovered in a review of Strategic Planning documents, organizational charts, and historical documents. The deepest layer was best explored through the interviews with administrators, staff, and faculty.

This chapter shared the findings from analyzed data at all three levels. Twelve interviews were conducted from February to April 2018. The interviews lasted between 35 and 65 minutes. The researcher transcribed voice recordings of each interview and all digital files and transcriptions were uploaded to a private Dropbox account. Once the interviews were transcribed they were listened to while reading the transcriptions. This allowed the researcher to catch any errors and adjust any punctuation; more importantly, this opportunity to hear the respondents’ voices and comments for a third time allowed the researcher to begin to develop a list of potential themes. The ‘final’ transcriptions were uploaded into NVivo, a qualitative data analysis tool. The researcher also made observations and reviewed documents over a four-month period from February to May 2018. Detailed notes including pictures and screenshots were created, stored, and analyzed.

A list of 40 potential nodes emerged and the researcher defined them. Node is a term used by NVivo, to represent the new encoded term after the data is decoded, or analyzed. Once the nodes were defined the researcher reread the transcripts and began to apply all 40 nodes using NVivo. Such a high number of nodes did not prove useful for truly understanding the data, and they were reworked. First, nodes that did not appear very often in the data were eliminated.
Second, some nodes were combined and redefined as appropriate. For example, Communication, Accessibility, and Clear Expectations became the sub-theme Communication. The transcripts were reread. Once the coded terms were pulled, they were read in conjunction with other similar nodes to understand where they were similar and where they were not. For example, was Collaboration the same as Working together toward shared goals? Eventually, the researcher was able to capture the essence of the data using four themes and thirteen sub-themes. All themes, including definitions, were emailed to the twelve interviewees and the two impartial reviewers identified at the start of the research. Those who responded said the themes seemed to accurately portray culture at UMPI. Throughout the research and analysis of data, the researcher kept detailed notes and followed the approved case study procedures.

A deeper analysis of the data culminated in 4 overarching themes and 13 sub-themes. The first theme was Leadership, and the sub-themes within included Leadership vision and commitment, Communication, Leadership values students, and Leadership values employees. The second theme was Campus involvement, the sub-themes of which were Community, Engaged employees, and Working toward shared goals. The third theme was Perseverance, and the three sub-themes were Resolve, Barriers, and Difficult history. The fourth and final theme was Trust, and the sub-themes were Relationships, Empowered employees, and Honesty.

The first theme, Leadership, revealed inferences about the leadership’s commitment to, and vision for, the campus. In fact, this appeared more than any other. Examples included guiding the campus through creating and communicating a strategic plan and reorganizing the organizational structure to reflect a matrix style based on the reality of the campus’ communication and operational needs. Examples of effective communication were found throughout the campus. Leaders were viewed as transparent, accessible, and clear with their
expectations. Leadership also placed a high value on both students and employees. Support for students included programming, a focus on curricular and non-curricular needs, and making courses available at a reasonable cost. Support for employees included training and development opportunities and efforts to improve morale.

The second theme, *Campus involvement*, captured the campus members’ engagement on campus and with the broader community. In several instances, staff and faculty were engaging with students and with businesses and other agencies. There were multiple examples of fieldwork, volunteering in agencies, and hosting events on campus. Campus members also placed a high value on working toward shared goals. Deans, faculty, and members representing different industries partnered to create programs that will prepare students for the reality of living and thriving in Aroostook County.

The third theme was *Perseverance*, thus named because it captures examples that illustrate the resolve of faculty and staff. Despite process and policy barriers, reduced staffing levels, and other indications of a difficult history, respondents relayed stories about hope and a belief that things are getting better.

The fourth and final theme was *Trust*. All respondents gave examples that indicated a level of trust required to build relationships, communicate with honesty, and act empowered. Empowered employees relayed trust in confidence in making decisions and a willingness to reach out for help. There is strong pride in owning work and innovating at UMPI, and a humility that shows comfort with imperfection.

Chapter Five will discuss how these findings are situated in the current literature, implications for practice, and suggest further research that may result from this work.
Chapter Five: Discussion and Implications for Practice

The purpose of this study was to understand the conditions and environments that may prove successful in the application of LCI to an entire college or university. The researcher used a qualitative case study design to conduct a study at the University of Maine at Presque Isle (UMPI) through the theoretical lens of Schein’s Organizational Model of Culture (2010). Schein’s model depicts three layers of culture: Artifacts, Espoused Beliefs and Values, and Basic Underlying Assumptions, and through each successive layer, the researcher dove deeper to explore and understand the culture.

The researcher designed and implemented this qualitative research study as a single instrumental case study. The guiding research question for this study was: Under what circumstances or settings are the methods of LCI applicable to an entire university? The sub-questions were: What factors or characteristics are significant in colleges or universities that adopt the use of LCI? and What challenges or obstacles might universities confront when applying LCI to their institution?

UMPI’s ability to apply LCI across the institution and launch other initiatives driven by campus leadership indicated the organization was ready for change. Organizational Readiness for Change (ORC) was defined by Weiner as the shared commitment by members of an organization to implement a change, and a shared confidence that they can execute the change (Gurumurthy, Mazumdar, & Muthusubramanian, 2013; Weiner, 2009). Armenakis, Harris, & Mossholder (1993) also defined organizational readiness in terms of the organization’s members’ beliefs, attitudes, and intentions. UMPI stood out as a practical case, and the researcher chose to explore the campus’ culture to understand its cultural factors or characteristics.
Yin’s (2009) case study design and Schein’s Organizational Model of Culture (2010) informed a process that included multiple and varying methods, including observations, document reviews, and 35-65 minute in-depth interviews. The primary interview questions fell within the following three categories: leadership commitment and management support, training and education, and employee participation and involvement. These were the three areas identified in the review of the literature as the prevailing indicators that organizations are ready to implement LCI (Antony, 2014; Netland, 2016; Paris, 2007).

The researcher followed Yin’s recommendations for analyzing data from the study of a case within a particular setting. First, interviewees reviewed and approved or suggested changes to their transcribed comments, which ensured construct validity. Following several reviews of the data, the researcher defined nodes. She then used NVivo software to code the nodes, identified broad themes, and quantified the frequency of specific themes in each context (observations, document reviews, and in-depth interviews). The researcher compared similar terms to understand where they were distinct and where they overlapped. She then organized the findings into final themes and sub-themes and shared the final sets of themes with the interview participants and two impartial reviewers for consensus (Yin, 2009).

The analysis of data from this case study culminated in 4 overarching themes and 13 sub-themes. The first theme was Leadership, and the sub-themes within included Leadership vision and commitment, Communication, Leadership values students, and Leadership values employees. The second theme was Campus involvement, the sub-themes of which were Community, Engaged employees, and Working toward shared goals. The third theme was Perseverance, and the three sub-themes were Resolve, Barriers, and Difficult history. The fourth
and final theme was *Trust*, and the sub-themes were *Relationships, Empowered employees, and Honesty*.

The resulting sets of themes answered this study’s research question by suggesting administrators in higher education can apply LCI to an entire university if there is a strong culture of *Leadership*. This research revealed that Leadership included clear vision, communication, and leadership commitment to students and employees. Additional findings at UMPI indicated *Campus involvement* in the community and engaged employees working toward shared goals were priorities. *Perseverance* and the employees’ resolve and willingness to work through barriers were important. Finally, findings showed the culture was one that relied on *Trust* that developed from relationship building, honesty, and employees who were empowered to do their work. The challenges or obstacles to implementing LCI emerged as saturation of initiatives and not having enough resources. Together these findings present the characteristics or cultural readiness factors that are significant at a university adopting the widespread application of LCI.

The following sections of this chapter are organized by the four findings of this research. The findings will be presented in relation to existing literature. Each of the four findings will be examined and presented as either contributing to, or conflicting with, the literature. The chapter will present a conclusion and then discuss the implications of these findings in higher education and suggest opportunities for future research. The next section will present the first theme, *Leadership*, in relation to existing literature.
Leadership

The first finding of this study referenced Leadership, and its related sub-themes, Leadership vision and commitment, Communication, Leadership values students, and Leadership values employees, more than any other factor. Throughout all three layers of UMPI’s culture, there was a strong and consistent value for the campus’ leadership. Senior leaders reciprocated this through the value that it placed on students and employees.

The researcher explored UMPI through the first two layers of Schein’s model - Artifacts and Espoused Beliefs and Values – via observations and a review of documents. Evidence collected revealed a strong presence of leadership. Inside, the buildings were glistening and tidy. Colorful flyers, effective signage, and cheery paint choices on gleaming classrooms and offices reflected leadership’s vision and commitment to creating an intentional space for learning and creativity. The environment also demonstrated the campus’ high value for students and employees. Outside, the buildings complemented each other in style and effective signage accented the buildings with a clear and consistent branding. The Strategic Plan and organizational charts indicated a high level of transparency, communication, and vision.

Schein’s deepest layer – the campus’ Basic Underlying Assumptions – revealed the full impact of Leadership at UMPI. Interviews exposed an appreciation for who the leaders were, what they believed in, or how they operated. Staff and faculty referred to the President, members of his senior leadership team, and to the team as a whole. Respondents credited senior leaders for what they believed in, including the high value they place on students and employees. Further, they credited leaders for how they lead. Respondents singled out the President and the CBO for
their accessibility, and endorsed the entire senior leadership team for transparency and communicating clear expectations.

The evidence of pervasive leadership throughout UMPI’s culture strongly complemented the research. Cultural readiness factors varied depending on the industry, and most of the research did not focus on higher education. However, there is unmistakable agreement that regardless of industry the top factor required for successful change is Leadership (Achanga, Shehab, Roy, & Nelder, 2006; Al-Balushi, et al., 2014; Arasli, 2002; Balzer, Brodke, & Kizhakethalackal, 2014; Comm & Mathaisel, 2005; Flumerfelt & Banachowski, 2011). This aligned with data at UMPI, which showed that 710 out of 1808 total references to cultural factors in the deepest layer were explicitly about leadership. Again, those references pointed to who the leaders were, what they believed in, or how they operated.

Among the 710 references to Leadership at UMPI, 202 of them emerged as Leadership Vision and Commitment. Examples of leaders’ commitment and vision at UMPI included multiple references to the Strategic Plan work and ongoing implementation, the reorganization of the organizational chart to reflect lines of communication, and the commitment to innovative curricula and programmatic efforts like the Competency Based Education initiative.

Most references to cultural readiness factors in the literature – in any industry – specifically mentioned Leadership and Managerial Commitment and Support (Achanga, Shehab, Roy, & Nelder, 2006; Antony, 2014; Atkinson, 2014; Bortolotti, Boscari, & Danese, 2015; Brun, 2011; Gordon, 2002; Lu, Laux, & Antony, 2017; Motwani, 2003; Netland, 2016; Paris, 2007; Temponi, 2005; Vadhvani & Bhatt, 2016). Radnor and Bucci (2011) called for commitment from senior management, and Lomas noted the need for high-level management and leadership

Antony (2014) also published a paper focused on the readiness factors that appear in the pockets where LCI linked with Six Sigma, and specifically in higher education, which was rare. Six Sigma incorporates a series of methods for reducing variability in systems and processes, which according to Antony (2014) can complement LCI. Antony’s first three readiness factors are (RF1) Leadership and vision, (RF2) Management commitment and resources, and (RF3) Linking Lean Six Sigma to the University’s strategy. All three align tidily with the findings at UMPI. Other research also indicated that linking the change initiative, e.g. LCI, to the strategy of the organization is another indication that the organization’s culture is ready for change (Antony, 2014; Bhasin, 2012a; Zu, Robbins, & Fredendall, 2010). UMPI did this when it made LCI a key part of one of its strategic goals.

Another element of leadership included leader continuity or sustained leadership commitment, which was a key factor in sustaining lean organizations (Anderson & Kumari, 2009; Dombrowski & Mielke, 2013) and aligns with evidence from this study citing the President’s many years of commitment to UMPI. Effective listening skills, good personalities and working closely with employees were important factors in the literature (AL-Najem, Dhakal, Labib, & Bennett, 2013) as well as in this case study. Respondents noted President Rice’s skills as a relationship-builder and his approachable personality multiple times. Dombrowski and Mielke (2013) commented on the need for leaders to have strong self-awareness and respect.

The literature also indicated that organizations with a strong culture of communication and openness were more likely to be ready for change (Anderson & Kumari, 2009; Comm & Mathaisel, 2005; Martinez-Jurado & Moyano-Fuentes, 2013; Turesky & Connell, 2010;
Vadhvani & Bhatt, 2016; Zu, Robbins, & Fredendall, 2010). This research found communication and openness, or transparency, throughout UMPI’s three layers of culture. Interviewees viewed the President as accessible, to the point where faculty and staff worried about him burning out. Data also showed the campus leadership collected feedback on campus strategies and decisions.

The literature on cultural readiness factors for change did not include value for students, which was strong at UMPI. The reason for that is likely because this research had not been previously conducted institution-wide in higher education. There was evidence, however, of value for employees in other industries that complemented the findings at UMPI. Researchers discovered that several organizations supported their employees, particularly with training programs and reward systems. Studies indicated that organizations with structured training programs were either successful in the application of LCI or ready for a general type of change (Arasli, 2002; Comm & Mathaisel, 2005; Martinez-Jurado & Moyano-Fuentes, 2013; McLean, Antony, & Dahlgaard, 2015; Turesky & Connell, 2010). Others found that the presence of development or reward systems for employees were indicators of the organization’s readiness for change (Al-Balushi, et al, 2014; Dombrowski & Mielke, 2013; Vadhvani & Bhatt, 2016; Zu, Robbins, & Fredendall, 2010).

Given UMPI’s progress toward innovative curricula and programmatic initiatives, even casual observers would surmise that visionary leadership must be at its core; this data proved that to be the case. The emergence of Leadership as the highest factor at UMPI should not be a surprise, given the extraordinary support Leadership received in the literature as a readiness factor for change – when applied to any industry. This study fully complemented the strand of research relevant to applying LCI regardless of industry, and offered Leadership as a cultural factor specific to readiness for change in higher education. The following section highlights this
study’s second highest finding, *Campus Involvement*, and shares related evidence as it appeared in the general literature.

**Campus Involvement**

The second finding that emerged from this study was *Campus involvement*. Along with its related sub-themes, *Community, Engaged employees*, and *Working toward shared goals*, Campus involvement had the second highest set of factors in the evidence at the University of Maine at Presque Isle. At UMPI’s deepest layer, Basic Underlying Assumptions, the data produced 475 out of 1808 references to campus involvement.

References to Campus involvement and its sub-themes included evidence of the campus’ emphasis on community engagement, campus involvement, and collaborating to meet UMPI’s goals. First, campus members expressed a connection to the larger community. Second, employees were connected, involved, and referred to UMPI as ‘unique’ and a ‘special place’. Finally, leaders, employees, students, and community members collaborated on projects that benefitted the institution. Substantial evidence in this theme made it the second highest set of campus values, which aligned with existing literature. Researchers discovered Employee Participation and Involvement as the second key cultural factor (after Leadership) that indicated an organization was ready for change (Arasli, 2002; Netland, 2016).

Evidence of Campus involvement at UMPI appeared in data at each of Schein’s three layers of organizational culture. Artifacts at UMPI included multiple indications of the campus’s involvement in the campus and local community. Flyers in hallways and the café promoted an array of ways in which to get involved, either through volunteering in the community or attending presentations on campus. The website showed a particular focus on Community,
starting on UMPI’s home page. The campus’s next layer of culture, Espoused Beliefs and Values, emerged through document reviews that included the Strategic Plan and Mission Statement. Both made clear the campus’ value for, and involvement in, the community.

Finally, the deepest layer of Basic Underlying Assumptions confirmed the campus’ dedication to community. Faculty, staff, and administrators shared multiple examples of engagement, shared curricular and community involvement, and working toward collective goals through the university and beyond. Evidence of employee engagement and involvement in the campus were prevalent at UMPI. Interviewees readily recounted examples of charitable events, visiting scholars, presentations, and curricular engagement in the community via organized events and research. The President reported that 75-80% of the campus was involved in a variety of local (non-campus) activities, businesses, and agencies, whereas a few years ago it was closer to 50%. Volunteer, charitable, programmatic, and curricular efforts intentionally brought students, employees, and area organizations together. The studies in the literature relevant to this set of factors indicated that engaged employees were present in organizations where there was readiness for change (McLean, Antony, & Dahlgaard, 2015).

*Engaged employees* emerged as a factor in UMPI’s culture and appeared in the general literature on readiness factors for change and/or the application of LCI. The reality is that employee involvement in organizations that were ready for change makes sense; involvement, particularly if employees truly engage and are willing to participate as they were at UMPI, implies a positive connection between the employee and culture. If employees took an active role in the organization and the result was positive, they were more likely to continue.

The other findings relevant to this set of themes at UMPI – Campus involvement, Community, and Working toward shared goals did not appear in the general research. One might
explain the absence of campus involvement by the previous lack of this type of research in higher education. Another – arguably similar – discovery at UMPI, Empowered Employees, did appear in general research and surfaces later in this chapter as a sub-theme of Trust. Some research overlapped employee engagement with ownership and empowerment, and referred to management that is decentralized. The decentralized nature of the management structure allowed employees to take on more decision-making and ownership (Al-Balushi, et al, 2014; Muthukumar, Tamizhjyothi, & Nachiappan, 2014). Employee engagement also presented as employee involvement, or a willingness to get involved (Lam & Robertson, 2012; Radnor & Bucci, 2011).

Perseverance was the study’s third and highest finding. The following section highlights the finding shares relevant evidence as it appears in the general literature.

Perseverance

Perseverance, along with its sub-themes Resolve, Barriers, and Difficult History, emerged as the third most important finding in this study. There were fewer data at the levels of Artifacts and Espoused Beliefs and Values, but at the deepest level, there were 315 references out of 1808. Perseverance at UMPI referred to the hope and resolve expressed by employees. In instances where staff, faculty, or administrators admitted things had been difficult in the past, they did so in the context of ‘things are better now’. A few respondents mentioned that the abundance of new programs was challenging but not overwhelming. There was some concern that the campus was at a saturation point for initiatives but no one indicated being overwhelmed. Rather, the staff and faculty were hopeful and found the campus’ energy and the freedom to create ideas exhilarating.
Perseverance appeared in a few Artifacts, including a bulletin board, which encouraged students to persevere through to graduation. It also appeared in the Strategic Plan as an Espoused Belief and Value, because it listed *hard working dedicated employees* as an inherent campus strength. Primarily, however, evidence of resolve, overcoming barriers, and references to a difficult history emerged from the interview process.

Resolve emerged from the data although it was not a word spoken by any of the interviewees. Every time a respondent mentioned a barrier or a difficult time, he or she cushioned it with a comment that showed resilience, hope, or willingness to keep working. It was as if the difficult time was not making them feel less affection for UMPI, but rather helped create a cultural factor of doggedness.

The barriers that appeared in the data included saturation of initiatives, lack of communication, policies outside the control of the campus, and people. Respondents described the barriers as things that either could improve or already had improved. There seemed to be an understanding that many of the initiatives that keep them busy were of their own volition, even if the reasons for the initiatives were altruistic (to grow enrollment, support students, or create innovative offerings to meet the County’s needs.)

Occasionally people were seen as barriers, especially if they were holding onto past practices, grudges, or relationships. Participants labeled people who made progressive movement difficult “outliers” and not significant barriers that would impede positive change.

One of the largest barriers emerged as a lack of resources. Several positions remain unfilled after layoffs or attrition, causing some employees to do more work than they used to.
Despite this reality, staff and faculty indicated they understood the budget situation and felt leadership made effective decisions regarding strategic investments.

Difficult history arose as a sub-theme because prior leadership and substantial financial challenges held back the university in ways that had improved at the time of this research. The references to Difficult history were buoyed with comments about how things were so much better. Leadership, civility, and openness were now part of the campus culture in spite of a recent and more difficult past.

Perseverance and the related findings Resolve, Barriers, and Difficult history did not align with the general literature on organizational readiness for change or the application of LCI. There was one study, however, at an institution of higher education in Iraq that noted a similar finding. It demonstrated that only half of change initiatives were successful because they were hampered by employees’ past experiences, including fears or concerns for the future. (AL-Abrrow & Abrishamkar, 2013). The inverse of this finding complements the research at UMPI in that employees did not show fear or concerns for their future and change initiatives at UMPI were successful.

Neither Barriers nor Difficult history emerged in the literature on readiness factors or the application of Lean. There was a large strand of literature related to resistance to change, but this study did not explore that in the literature review nor did it emerge in the findings at UMPI. There is not enough information to say whether the findings are in conflict with the research, but it is interesting that while there is an awareness of barriers and a difficult history at UMPI, none of them appear limiting. For example, a few respondents mentioned the number of initiatives and concern they will be able to sustain them going forward, but they cushioned their comments with optimism and resilience.
Trust was the study’s fourth and final finding. The following section highlights this finding and shares relevant evidence as it appeared in the general literature.

Trust

The fourth and final finding in this research was Trust. Its sub-themes were Relationships, Empowered employees, and Honesty. Evidence of Trust appeared 308 times out of 1808 at the deepest level of UMPI’s culture, and much less so at the levels of Artifacts (24 times) and Espoused Beliefs and Values (5 times). The actual word ‘trust’ did not necessarily appear, but it emerged as a finding because staff and faculty exhibited great confidence and comfort with the work they own, with the ability to manage their own time, and with the ability to approach leadership with concerns. They were able to do all of the above because they trusted that there would be support from their peers and leadership.

Anderson & Kumari (2009) discovered the significance of trust and its relevance to creating a culture of continuous improvement in schools, and this aligned with the discoveries at UMPI. Staff, faculty, and administrators all remarked on their ability to manage their time, and to make improvements or suggest changes to their own work. One director of a department said she relied on her staff to work on their own in their areas of expertise before they all come together to collaborate and support each other. This complemented the literature, where Trust emerged as a key component to implementing LCI in an organization (Antony, 2014; Antony, Krishan, Cullen, & Kumar, 2012)

Building relationships was a key sub-finding in this study and found to be integral to meeting the needs of the community, the students, and developing programs with other institutions. There was a strong culture of collaboration at UMPI, on campus and off. The
President said that being in the community and building relationships was an important part of the work he did. He also said collaboration was one of UMPI’s most important values. Staff and faculty all over campus said that coming together across department lines was sometimes the only way to accomplish work, particularly at a small institution where there was a great reliance on each other. AL-Najem, Dhakal, & Bennett (2012) supported this finding and stated that relationships with suppliers and customers are essential. They also said that it is important to enhance department relationships and teamwork.

Of all of the sub-themes within Trust that were discovered at UMPI, the one with the strongest connection to the literature about applying LCI or readiness for change was the research on Empowered employees. Respondents in this study stated clear ownership over their work and for their own time. Every interviewee said they were trusted to suggest improvements to their work and were able to manage their work with support – rather than interference – from leadership. Bhasin said that empowering employees is essential (2012b). Arasli (2002) and Radnor & Bucci (2011) also stated the importance of empowerment. Other similar elements emerged in the literature including the willingness of employees to take risks (which implies trust) and the readiness and willingness to invest efforts in organizational change (AL-Abrow, & Abrishamkar, 2013; Antony, 2014).

Honesty did overtly not appear in existing research, but that also could be a misrepresentation because former studies might have assumed an inherent level of honesty on the part of interviewees. In this research, it emerged as explicit comments about honesty and as implied within the context of other topics. Respondents consistently expressed the ability to communicate honestly.
This complements the findings at UMPI perfectly, because *Empowering employees* had the most evidence (138 data points) compared with *Relationships* (81) and *Honesty* (89). Comm & Mathaisel also stated the importance of empowering employees (2005; 2003), and Hung, Martinez, & Yakir (2015) encouraged the empowerment of staff at all levels. Organizations need the continued support for the LCI initiative, but do not need leaders to micromanage (Dombrowski & Mielke, 2013). Honesty, the final sub-theme of Trust, did not appear in the literature as either a readiness factor for change or a condition of successful LCI applications.

The following conclusion will summarize these findings and cement them in the context of the general literature.

**Conclusion**

The purpose of this study was to understand the conditions and environments that prove successful in the application of LCI to an entire college or university. The researcher used a qualitative case study design to conduct a study at the University of Maine at Presque Isle (UMPI) through the theoretical lens of Schein’s Organizational Model of Culture. The guiding research question for this study was: *Under what circumstances or settings are the methods of LCI applicable to an entire university?* This study specifically asked *What factors or characteristics are significant in colleges or universities that adopt the use of LCI?* and *What challenges or obstacles might universities confront when applying LCI to their institution?* This study at UMPI was the first to discover the cultural conditions and factors significant to institution-wide application of LCI in higher education; however, the key findings of this study also support existing literature in other industries.
The first – and most prevalent finding of this research - supported existing research in other industries and in some pockets within higher education. This study found that Leadership, particularly Leadership vision and commitment, Communication, and Leadership’s value for employees were pervasive throughout UMPI, at each of Schein’s three levels. This supports extant research that stated the importance of leadership in a culture’s readiness for change or the application of LCI (Bortolotti, Boscari, & Danese, 2015; Dombrowski & Mielke, 2013; McLean, Antony, & Dahlgaard, 2015). Training and development opportunities, Employee engagement, and Empowered employees were other findings in this study that complemented existing research (Arasli, 2002; Bhasin, 2012b; Comm & Mathaisel, 2005; Dombrowski & Mielke, 2013; McLean, Antony, & Dahlgaard, 2015).

The findings of this study suggest that a university will be more ready for the institution-wide application of LCI if the campus has a culture that includes:

1. Strong leadership, including leadership vision and commitment, communication, and value for students and employees;
2. Campus involvement, including integration with the community, engaged employees, and a willingness to work toward shared goals;
3. Employees who express perseverance, including resolve and hope despite barriers and a difficult past history;
4. Trust, including the ability to build trusting and effective relationships, empowered employees, and honesty.

This study supported research conducted in other industries, and it expands upon it to include campus-wide application of LCI in higher education. Further, this research brought to light findings that are new to the research including Leadership’s value for students, Campus involvement, Community, Working toward shared goals, Barriers, Difficult history, and Honesty.
The newness of this research exploring factors in the widespread application of LCI in higher education explains why some themes emerged for the first time.

The findings of this research have the potential for significant impact on practice in higher education, and those implications are discussed below.

**Recommendations for Practice**

In the following section, the researcher discusses how the findings discovered in this research relate to the application of Lean Continuous Improvement (LCI) across entire universities and colleges. LCI encompasses a series of principles, methods, and tools; when successfully applied it helps organizations improve efficiency, save money, and increase customer satisfaction and employee morale. LCI helps organizations in pockets, but widespread application and sustainability is a challenge across industries. This study offers practical suggestions for improving the implementation of LCI in higher education, and could eventually lead to sustainability solutions as well.

Until now, the success of LCI in the University of Maine System (UMS) has relied upon the willingness of departmental managers to champion the implementation of LCI in their specific areas. In some pockets of UMS, there is great success whereas in others the interest has waned. This study explored the cultural factors at the University of Maine at Presque Isle (UMPI), a campus that has launched LCI and is beginning to implement process improvements. This research complemented research in other industries and brought to light new findings that can guide application of LCI in higher education.
This research will guide organizations like the UMS to apply LCI effectively where there is the greatest readiness for change. There are five areas where the potential for change is strongest. *First*, this study builds upon existing research that supports understanding the culture. Therefore, university administrators should engage a skilled facilitator to research the culture using Schein’s Model of Organizational Culture (2010) or a similar model that allows for investigating the culture at multiple levels. Using the multi-layered model will allow investigators to determine whether participants’ values are in alignment with the organization. When values are consistent throughout the organization the organization will be more likely to embrace a change initiative like LCI (Agnew & VanBalkom, 2009; Antony, 2014; Gregory, Harris, Armenakis, & Shook, 2009; Smollan & Sayers, 2009).

*Second*, explore a cross-section of the culture at the deepest level via interviews or a questionnaire. The exploration of the culture should specifically seek to understand the following:

1. Do campus leaders articulate a strong and consistent vision for the campus?
   a. Does the campus vision include a commitment to, and support for, employees and students?

2. Do systems and structures facilitate communication throughout the campus?
   a. Are leaders accessible?

3. Are employees engaged in the community?
   a. Do staff and faculty work together toward shared goals?

4. Do staff and faculty trust leadership and each other?
   a. Are they empowered to suggest improvements?
b. Are they able to be honest without fear of repercussions?

5. Do staff and faculty balance potential barriers (e.g., difficult history, saturation of initiatives) with a sense of resolve and perseverance?

Third, the facilitator and campus administrators should discuss the findings and ascertain whether the campus culture is ready for the widespread implementation of LCI. LCI relies upon leaders to express a consistent and strong vision for the campus. If the campus culture is not ready, it could be dangerous to launch LCI and risk setting the campus up for failure. To prepare for system-wide implementation campus leaders will need to commit to fostering a culture that supports the application of LCI. Of course, this could take some time, depending on the leadership and the history of the campus.

Fourth, structures and systems should facilitate implementing and sustaining LCI process improvements. Process improvements will only be successful in small pockets if the larger system is set up to empower employees at all levels and drive decision making as close to the source as possible. System leaders indicating they want efficiency throughout the organization is only the first step. They need to take action to ensure the vision is clear and allow staff and faculty to make effective decisions throughout the organization. Ultimately, leaders need to articulate the benefit of LCI on the campus. Staff and faculty need to feel safe to be honest about their work, and trust they can be truthful with campus leadership. The best thing leaders can do is to foster a culture of trust and empowerment that encourages employees to invest in the community, engage in the work, and innovate better processes.
Fifth, and finally, the University of Maine System has a remarkable opportunity – and one might add responsibility – to take a lead on effective systemic and structural improvements in the state of Maine. Without support for effective change with our systems and structures, our processes and programs will never be as efficient as they can. Of course, we must manage this with great attention to, and respect for, people. UMS and its broader partners in the state (including pre-K-12 and community colleges) can create great cultural desire for true Lean systems. For example, a true Lean model would not have only one or two start dates per year. Rolling starts would eliminate long lines on campus every September and January, and would better serve students who need classes on much more flexible and dynamic schedules.

**Recommendations for Future Research**

This research started to address an identified gap in the research by exploring characteristics and factors that aid in the university-wide application of LCI. There is much more to explore in this important field of research and this final section will begin to highlight opportunities for future research.

This research identified new factors that had not emerged in other industries, including Leadership’s value for Students, Campus involvement, Community, Working toward shared goals, Barriers, Difficult history, and Honesty. Further exploration of these themes would help to solidify or discount the strength of these findings. One way to do that would be to expand the scope of research to include students’ and community members’ perceptions of the community.

Several articles acknowledged the importance of organizational culture before taking on a new initiative, but organizational culture is a very broad brush. Is it referring to the readiness factors within a culture? This research referenced Weiner’s Organizational Readiness for Change
(ORC) model (2009) as the findings demonstrated support for the model. Other researchers referred to a culture’s environment for change, including positive environment for change (Antony, 2014; Bhasin, 2012a; Comm and Mathaisel, 2003), or a culture conducive to change (Al-Balushi, et al, 2014; Lomas, 2004; Wong, 2007; Zu, Robbins, & Fredendall, 2010). More opportunities to explore ORC and other models in higher education could potentially help administrators and facilitators who want to understand the university’s readiness for change.

Empowered employees emerged as a key sub-theme in this research and in existing research. Several people indicated a sense of comfort and pride in owning the work they do. It was a way to work together, to take responsibility, and to make the University better. This strong sense of owning work at UMPI was mentioned in contrast to possessing work. Possessing work was described as holding onto processes, an unwillingness to share duties, and a lack of cross training. Future research could certainly include seeking to understand the differences, advantages, and challenges related to empowering employees to own rather than possess their work.

A final suggestion for future research could consider which elements of culture in higher education distinguish it from other industries. Faculty and staff sometimes reference the uniqueness of higher education. The climate of higher education often includes working in teams, dedicating many years to the same institution (particularly at the lower levels of the hierarchy), and working in a system that is based upon 400 years of tradition. If higher education has a unique culture, researchers could seek to understand and draw a distinction between culture in higher education and other industries.
References


Baker-Tate, I. M. (2010). Organizational commitment patterns in higher education: A study of selected midlevel student services professionals (Doctoral dissertation). Retrieved from ProQuest LLC. UMI 3475087


http://www.timeshighereducation.co.uk/features/big-brother-in-the-academy/2016450.article


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THE WAY IT SHOULD BE

University of Maine at Presque Isle
2020 Strategic Plan
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Finalized 1/7/18
**Vision**

We will lead the State of Maine in delivering an affordable and accessible education with an innovative spirit and commitment to excellence.

**Mission**

We deliver exceptional experiences for learners of all ages to become informed leaders, engaged citizens, and prepared professionals within their communities and beyond.

**Institutional Values**

- Responsive
- Collaborative
- Supportive
- Ethical

**Service Promise**

Excellence, every day!
Goal One—Campus Culture: The University will enable all employees to achieve their potential while also enhancing a sense of community and campus pride.

Sponsors: Ben Shaw and Dori Pratt

Initiative 1.1: The University will enhance professional development for all employees.

Initiative 1.2: The University will implement lean initiatives to improve performance and increase efficiency.

Initiative 1.3: The University will strengthen a sense of community on campus and strive to improve the health and morale of all campus employees.

Initiative 1.4: The University will develop and maintain a comprehensive onboarding and offboarding program.

Metrics:

In 2020, Success Will Look Like:

- UMPI will rate in the top 10% on the Great Colleges to Work For survey, provided by the Chronicle of Higher Education.
- UMPI will have trained all supervisors in lean principles and will have implemented at least one lean initiative annually.
- 75% of UMPI employees will describe at least one professional development experience on their annual evaluations, and 100% of faculty will update their professional development plan annually.

Goal Two—Student Success: The University will improve student outcomes as measured by retention, persistence to degree completion, and academic achievement.

Sponsors: Academic and Student Deans

Initiative 2.1: The University will promote the development and implementation of proficiency based learning, high impact practices, and personalized learning.

Initiative 2.2: The University will ensure that living and learning environments (e.g. classrooms, residence halls, dining, and athletic facilities), are appropriately designed, configured, and equipped in support of practices maximizing student achievement and engagement.

Initiative 2.3: The University will ensure that all majors maintain comprehensive curricular pathways ensuring students’ ability to complete degrees within two or four years, that we provide best practices in regards to academic support services in their effort, and that we excel our peers in regards to the percentage of the student body completing degrees and other relevant credentialing within both four and six year cohorts.
Initiative 2.4: The University will maintain a comprehensive campus to career readiness program that ensures all students will develop and present an electronic portfolio demonstrating their accomplishments and career readiness.

**Metrics:**

*By 2020, Success Will Look Like:*

- UMPI will enroll at least 1,450 students in on-campus, online and early college programs.
- Residence halls will exceed 85% occupancy.
- Over 70% of first year students will be retained to the second year.
- The four-year and six-year graduation rates will exceed those of peer institutions as identified by Hanover Research.

**Goal Three—Community Engagement:** The University will meet the needs of regional employers by increasing the number of workforce-ready graduates who become employed and have successful careers.

**Sponsor: Ray Rice**

Initiative 3.1: The University will establish a Campus to Career Steering Committee and individual program advisory boards as appropriate to their disciplines to ensure academic programming and learning outcomes across our curriculum that is both relevant and responsive to the needs of today’s workforce.

Initiative 3.2: The University will work with employers to integrate internships, practicums, research opportunities, service learning or other work experiences into all academic programs.

Initiative 3.3: The University will encourage and facilitate student learning through travel experiences such as the National Student Exchange and Study Abroad.

Initiative 3.4: The University will engage alumni to provide campus to career opportunities for current students and graduates.

Initiative 3.5: The University will promote the growth of the region through increased cultural offerings for campus and community.

**Metrics:**

*By 2020, Success Will Look Like:*

- All UMPI students have the opportunity to obtain work experience in their area of interest prior to graduation.
- Within one year of graduation, 90% of graduates are professionally employed or enrolled in advanced study.
- The percentage of alumni who are actively engaged with the University has steadily increased.
Goal Four-Enrollment: The University will create an integrated marketing plan and brand, thereby creating relevancy and action among its constituencies to recruit and enroll right-fit students.

Sponsor: Deborah Roark

Initiative 4.1: The University will create a university branding strategy.

Initiative 4.2: The University will implement a marketing plan with objectives to recruit a diverse student population based on a variety of student types (early college, traditional, online, CBE, readmits, student athletes, in-state/out-of-state/international, transfer, etc.)

Initiative 4.3: The University will grow total enrollment through an integrated marketing and communication plan involving a variety of media channels (traditional, paid and social media marketing) that will move prospects from inquiry to enrollment by targeting and segmenting the market.

Initiative 4.4: The University will continuously analyze and develop student financial assistance strategies, thereby supporting the financial aid packaging needs of all students.

Initiative 4.5: The University will develop and implement a plan for increasing educational partnerships with K-12 and other educational and business entities to support the enrollment and seamless transition of students for undergraduate and graduate programs.

Metrics:

By 2020, Success Will Look Like:

- New student enrollment for the incoming class in Fall 2020 will exceed 350 students.
- The CBE program will boast at least 5 major program/concentration offerings, enrolling 25 new students per term.
- All Athletic Teams will have full rosters.
- Dual enrollment levels at 20% of overall credit hours.
- UMPI enrollment will exceed 1,450 students in on-campus, online and early college programs.
- Pathways for 2-4 graduate programs are established and students are enrolled.

Appendix A

History and Planning Process

In Spring 2013, President Linda Schott began leading a campus-wide discussion of a new vision for UMPI. The campus learned about the institution’s financial status and enrollment trends, forces disrupting higher education nationally, and changes in public education in Maine. During Summer 2013, the Executive Leadership Team worked together to envision what a highly successful UMPI would look like in 2020 and what steps could be taken to make that vision a reality. The team drafted a new vision, mission, and statement of institutional values and began disseminating those to all campus constituencies for discussion. The team used the ensuing
feedback to revise the statements and then presented the draft documents to the Board of Trustees of the University of Maine System for preliminary approval. The Board responded enthusiastically and encouraged UMPI leadership to move ahead with the formulation of a strategic plan based upon the revised vision and mission.

In December, the President constituted a Strategic Planning Committee (SPC) with representatives from all campus constituencies and engaged Bryan Thompson, UMPI Assistant Professor of Business, and his student, Abigail Poole, to facilitate the planning process. The SPC met twice, conducted a SWOT analysis, and identified five areas as key to the achievement of UMPI’s new vision: the personalization of pedagogy, the personalization of campus services, enrollment management, career preparation of students, and alumni engagement and community outreach. The President then organized sub-committees for each of these areas, identified additional campus and community members to serve on those sub-committees, and charged each sub-committee with delivering recommendations for key Strategic Directions by the end of February.

The President then distributed the recommendations of the sub-committees to the University Senate and the Faculty Assembly for comment and engaged the Executive Leadership Team to draft a strategic plan based upon the recommendations. The draft plan was then presented to the Strategic Planning Committee for comment and for suggestions about action steps and assessment targets. After additional revisions, the Executive Leadership Team and Professor Thompson presented the plan to various campus constituencies: the Executive Committee of the UMPI Foundation Board; the University Senate; the Faculty Assembly; the Alumni Board; and Student Government. The plan was also presented at two Open Forums on campus. Professor Thompson noted questions and suggestions, and the Executive Team prepared a final draft for presentation to the Board of Visitors and the Board of Trustees.

During the Fall 2017, President Ray Rice and his Cabinet updated the 2020 Strategic Plan, including revising the mission and vision of the university, as well as modifying the goals and initiatives in the plan.
Appendix B

SWOT Analysis

Strengths

- Highly motivated faculty
- Community involvement and support
- Small size
- Affordable with low level of student debt
- Gentile Hall
- Hard working dedicated employees
- Room to grow without dramatically increasing costs
- New, innovative programs being planned
- Sustainable energy initiatives

Weaknesses

- Customer service is sometimes poor
- Need better technology and support for it
- Department rivalries
- Marketing is virtually non-existent
- Some employees are reluctant to change
- Some programs are not well-connected to the community
- Most of the physical plant is old and in need of updating and repair
- Student engagement is low
- Low employee morale
- Name recognition is poor

Opportunities

- Community would welcome additional engagement
- Possibility of increasing online/digital programs
- Need for some IT related programs
- Increase recruitment of local high school graduates
- Develop partnerships with other academic institutions
- Develop internships for all fields
- Increase Grant Funding
- Desire for more STEM programs
- Fundraising can be expanded
- Community College Agreements can be expanded
- Alignment with proficiency based high schools
- Increase adult students and veterans
- Increase business from conferences and events
Threats

- Demographic trend for Aroostook County and Maine
- Decreasing state funding and tuition revenue
- Competition from other colleges
- Energy costs
- Slow economic recovery
- Availability of jobs for graduates
- No technology programs
- Declining enrollment
- Public skepticism of higher education
- Bad publicity from Payscale story in 2013
Appendix B: UMPI Organizational Chart (2016)