

# An Investigation of the Innovation Culture Driving Transformation at a Higher Education Institution

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by

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## Dedication

To my parents,  
for instilling in me a love of learning  
and always reminding me that I can do anything I put my mind to.  
Your love and encouragement mean the world.

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## **Executive Summary**

This project investigates the culture within the Innovation Center at Southern New Hampshire University (SNHU). The Innovation Center was established in 2015 and formalized in 2018. They are charged with future-proofing the institution. The Innovation Center takes on projects across the university that seek to improve the experience of learners all while creating pathways to opportunities for new learners to come aboard. As an institution SNHU has grown tremendously in the last decade. Similarly the Innovation Center has undergone tremendous growth in staff over the last two years. As the Innovation Center has grown, leadership has expressed an interest in identifying the innovation capabilities that have enabled them to build a distinct culture. They have seen success across their initiatives but they lack a solid understanding of what elements of their culture enable this level of engagement in the innovation process. The Innovation Center is the hub for a number of the initiatives that have launched SNHU to the forefront of online higher education. Their culture and the innovation environment that they have built are worth investigating, especially as they continue to look to the future and transforming the experience of learners in the next decade.

The unique context and the Innovation Center's specific phenomenon drove to literature in the areas of innovation and innovation culture. Two frameworks guided the study. First, Schein (1984) was identified to frame an understanding of organizational culture. Second, a framework was established to guide the understanding of innovation cultures using the work of Michaelis, Aladin, and Pollack (2018), Dombrowski, Kim, Desouza, Braganza, Papagari, Baloh, and Jha (2007), and Dobni (2008).

Two questions were created to guide the analysis of the phenomenon within the context of the Innovation Center. First, what elements of the organization's culture enable the Innovation

Center at SNHU's innovation process? Second, what elements of the organization's culture may be limiting the Innovation Center at SNHU's innovation process?

A case study approach was used to evaluate these questions leveraging a mixed-methods approach. A mixed-methods approach created an opportunity to develop a deep understanding of the organization's innovation culture. Data collection methods included a review of existing data, semi-structured interviews, observations, and the implementation of the Innovation Quotient Questionnaire (Rao & Weintraub, 2013), which required participants to rate the organization on 54 elements and provided the option to respond to two open-ended questions.

The data collected through semi-structured interviews, observations and the review of organizational literature were triangulated with the data collected from the Innovation Quotient Questionnaire, which led to a rich understanding of the innovation culture within the Innovation Center. The following are the findings that emerged from this analysis:

1. The Innovation Center embraces a commitment to innovation as a result of strong leadership and a focus on innovation that comes from the organization's C-suite.
2. The Innovation Center's innovation culture has a strong vision and mission that drive focus to add value, and address yet-to-be realized future challenges.
3. The Innovation Center has cultivated a safe space where employees are valued as integral to driving innovation and encouraged to be creative, experiment, and embrace ongoing learning.
4. Senior leadership drives the innovation agenda.
5. Community participation in innovation idea generation beyond Innovation Center staff is limited.

Drawing on these findings and connecting to the identified guiding questions three recommendations for adoption by the Innovation Center are proposed. These recommendations are directed at supporting the Innovation Center in enhancing and sustaining their innovation culture.

1. The Innovation Center should seek out opportunities for staff to engage members of the greater university community to enable increased knowledge sharing.
2. The Innovation Center should emphasize a greater balance in where projects come from, reducing the current top-down innovation approach.
3. The Innovation Center should identify and nurture idea sponsors to enhance community participation in innovation.

This study focused specifically on the unique environment within the Innovation Center at SNHU. The findings and recommendations identified are therefore limited to this specific context. The study is also limited by the level of participation by Innovation Center staff. The Innovation Quotient Questionnaire had a 36% response rate and there was not total participation across the semi-structured interviews and observations. Data collection occurred shortly before the COVID-19 pandemic and the subsequent stay at home orders. The timing of the pandemic created limitations and challenges in collecting additional data.

While the focus of this study was the Innovation Center, additional questions surfaced throughout the investigation that extended beyond the confines of the Innovation Center. The findings of this study may be improved upon with further investigation into the innovation environment across the institution as a whole. Data on the innovation environment across SNHU as a whole could enhance the understanding of the innovation culture within the Innovation Center and some of the identified barriers to participation that they have experienced.

## **Review of the Literature**

*“Innovation is important for many reasons, and one of the most compelling is its relationship to organizational performance” (Dobni & Klassen, 2015, p. 105).*

*“Culture creates a connective thread among diverse people, reminding them of what they are doing and why” (Bartel & Garud, 2009, p. 108).*

Innovation is widely embraced as a powerful mechanism for organizational change and value creation. When it comes to innovation Dobni, Klassen and Nelson (2015) found that “companies that “get it” prove to be industry leaders. Not only do they create new value on a consistent basis, they often redefine the competitive landscape” (p. 4). Given the transformational potential of innovation and its ability to drive value creation it could be said that innovation should be embraced across organizations—but that is not the case and there are reasons why some organizations are successful at embracing innovation and others are not. What is it that enables an organization to embrace innovation and embed it within their strategy? What is the relationship between culture and innovation? Are there elements widely agreed upon as contributing to a successful innovation culture or others that present as barriers to the innovation process? This paper draws on two areas of literature to build a foundation of understanding: innovation and innovation culture.

### **DEFINING INNOVATION**

Innovation as a term is broadly used to the point where the term is now considered to be somewhat generic (Dobni, 2008). Organizations embrace innovation to categorize numerous organizational activities from having creative employees to engaging in market driven change initiatives. Across the literature the definitions of innovation are diverse.

Baragheh, Rowley, and Sambrook (2009) emphasize process in their comprehensive definition: “innovation is the multi-stage process whereby organizations transform ideas into

new/improved products, service or processes, in order to advance, compete and differentiate themselves successfully in their marketplace” (p. 1334). Steele and Murray (2004) emphasize change and describe innovation as: “the introduction of change via something new” (p. 317).

Crossan and Apaydan (2010) more extensively define innovation as:

a production or adoption, assimilation, and exploitation of a value-added novelty in economic and social spheres; renewal and enlargement of products, services, and markets; development of new methods of production; and establishment of new management systems. It is both a process and an outcome. (p. 1155).

Hamel (2006) embraces a broad definition as: “a marked departure from traditional management principles, processes, and practices, or a departure from customary organizational forms that significantly alters the way the work of management is performed” (p. 4).

The diversity of these definitions is reflective of the contextual nature of innovation.

Dobni (2008) expands the conversation by noting, “innovation is often expressed through behaviors or activities that are ultimately linked to a tangible action or outcome” (p. 540) This statement captures the essence of innovation. As a concept innovation is multi-dimensional and it involves the engagement of people and organizations in behaviors that lead to changes in process or new products. Innovation work is often pursued in response to changing conditions or to be proactive to future challenges. This emphasis on innovation as a future thinking approach is consistent across much of the literature (Akman & Yilmaz, 2008; Shoemaker, Heaton, & Teece, 2018; Euchner, 2017). Firms who embrace innovation and take this forward thinking approach benefit from the widely-recognized fact that through innovation organizations have an opportunity to further their competitive advantage (Baregheh, Rowley, Sambrook, 2009; Akman & Yilmaz, 2008; Khazanchi, Lewis & Boyer, 2007; Crossan & Apaydan, 2010; Dobni &

Klassen, 2015; Wang & Ahmed, 2004; Steele & Murray, 2004). Wang and Ahmed (2004) and Steele and Murray (2004) stress the importance of this competitive advantage as integral to not just value creation but to an organization's survival. Important to achieving this competitive advantage however is the ability to be successful in innovation—this is where culture comes in as a construct equally important to creating a competitive advantage (Barney, 1986)

## INNOVATION CULTURE

*"Put simply, having a high innovation culture is profitable"* (Michaelis, Aladin, & Pollack, 2018, p. 123).

The key to success in innovation is organizational culture (Buschgens, Bausch, & Balkin, 2013). Schein (1984) is a significant early work in organizational development and outlines a highly-regarded framework of organizational culture. Schein (1984) defines organizational culture as:

the pattern of basic assumptions that a given group has invented, discovered, or developed in learning to cope with its problems of external adaptation and internal integration, and that have 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 (p. 3)

Barney (1986) takes the definition a step further and associates culture with determining who relevant stakeholders are and how these stakeholders interact. Using these definitions organizational culture as a construct can be understood as a means of shaping the values, norms and behaviors within an organization and a defining force in how organizations conduct business. It has been argued that an organization's culture can provide distinct advantages to a firm. In their research Barney (1986) found that in order to see these advantages an organization's culture had to meet three conditions. First, the culture must have value that

enables activity leading to strong financial performance. Second, the culture has to be rare, containing attributes that are not common across other firms. Third, the culture must not be easily imitated. Barney (1986) found that should a firm meet these three conditions their culture would serve as a distinct differentiator from other firms leading to increased financial performance and a strong competitive advantage. There is support for Barney's assertions across the literature. Dobni and Klassen (2015) for example, found that a distinct source of competitive advantage for a firm came from the inability of other organizations to imitate their culture. They note that while you can theoretically imitate a strategy the intricate nature of organizational culture makes it difficult to replicate.

Across the literature there is agreement that both innovation and organizational culture create competitive advantages for organizations. There is also agreement that together these two constructs create opportunities for differentiation and increased market value. As Michaelis, Aladin, and Pollack (2018) note, "it is widely recognized that an innovation culture is related to increased organizational performance" (p. 117). This improved performance comes from a culture that supports innovation activity by establishing a climate where innovation is an institutionalized priority (Naqshbandi, Kaur, & Ma, 2014). The elements that constitute an innovation culture vary across the literature but are largely centered around a number of characteristics: visionary leadership, participative with a focus on creativity, a willingness to take risks, employee empowerment, organizational learning, a competitive market and value driven orientation, collaborative and boundary spanning approach, and psychological safety.

The strength of an innovation culture is greatly influenced by leadership and their approach to fostering an environment conducive to innovation. Organizations successful in innovation have support and a clear innovation strategy from the C-suite (Dobni, Klassen, &

Nelson, 2015). Support from the C-suite allows for appropriate resource allocation towards emerging opportunities and ensures that appropriate structures are in place to support an innovative environment. Key characteristics of innovation leaders are that they live the mission and vision of an organization and create the foundation for a culture that is motivated towards a common goal (Dombrowski, Kim, Desouza, Braganza, Papagari, Baloh, & Jha, 2007; Sarros, Cooper, & Santora, 2008). Through living the vision leaders positively influence the environment and encourage the adoption of innovation capabilities by their employees (Dobni, 2008). A key capability developed as a result of the example set by leadership is that employees have a mission focused approach and embrace the singular focus of working towards the betterment of the organization rather than working for the sake of self-promotion. Beyond a focus on the mission, leaders in an innovation culture are keenly aware of the value of their people and place an emphasis on creating a safe space where employees feel supported and are encouraged to think creatively and take risks (Sarros, Cooper, & Santoro, 2008; Dobni & Klassen, 2015).

Across the literature there is acknowledgement that innovative leaders walk a sensitive tightrope of providing flexibility while also asserting some level of control. Flexibility enables individuals to be creative and take risks while control is important to establishing focus and discipline. In their work Khazanchi, Lewis, and Boyer (2007) discussed the flexibility-control tension and found that effective managers are successful because they are able to “provide independence, while interacting frequently” (p. 882). Leaders who are unable to find this balance risk diminished innovation as too much control has been found to adversely influence intrinsic motivation (McLean, 2005). Innovation leaders then are supportive without being overbearing.

While C-suite and upper level management support is a necessary element in an innovation culture, successful organizations embrace leadership and support for innovation at multiple levels of the organization, a key to advancing innovation (Dobni & Klassen, 2015). An example of this type of leadership comes in the way of idea sponsors who have the capacity to further innovation work across an organization (Dombrowski et al., 2007). Idea sponsors have the skills necessary to both support individuals through innovation ideation and the ability to persuade top management of the value of an innovation idea. Not all management possess this skill set but those identified as idea sponsors are critical sounding boards in an organization (Dombrowski et al., 2007).

Leadership plays a key role in establishing the foundation of an innovation culture and creating a space that is conducive to the other defining elements of these types of organizations. A participative environment is another key element of innovation cultures. Participation creates a space where employees feel empowered and are active in decision-making (Hurley & Hult, 1998). This type of participation has been characterized as democratic communication and is highlighted as a key element of innovation cultures across the literature (Dombrowski et al., 2007; Michaelis, Aladin, & Pollack, 2018). Enabling greater participation across an organization supports incremental improvement and encourages greater idea sharing. Strong innovation cultures ideate across the organization. While participation is integral to innovation there can be tension when ideas challenge the interests of the C-suite (Dombrowski et al., 2007). Acknowledging this tension and continuing to encourage participation is integral to creating a thriving innovation culture. Dobni (2008) addresses this tension by focusing on the importance that employees have in innovation:

Managers have to understand that innovation is achieved through an imperative internalized by employees...it is not the organization that is innovative; rather it is the sum of the people, who, through the way they think and act, allow the organization to be innovative. (p. 43).

The role of employees in successful innovation cultures cannot be understated. Organizations with a thriving innovation culture have active participation from employees who are not just motivated to innovate but also capable of innovating (Martin-de Castro, Delgado-Verde, Navas-Lopez, & Cruz Gonzalez, 2013). This means that employees possess the necessary capabilities to take on innovation work and support the organization in enhancing their value. Part of engaging employees in this way is acknowledging their value to the organization and fostering an environment of trust and respect (Dobni, 2008). These participative environments are widely recognized as valuing creativity, experimentation and encouraging risk-taking (Dobni, 2008; McLean, 2005; Brettel & Cleven, 2011). Embracing experimentation and risk inevitably will result in failure on occasion but it can also lead to unplanned successes. Innovation cultures are capable of absorbing these failures and unexpected wins and supporting employees through them. Dobni (2008) characterized this balance of creativity and risk as the “very essence of innovation” (p. 47). Further stating that organizations with an innovation DNA embrace risk and are “tolerant of the mistakes that will occur and allow for recovery and learning from dead ends and failures” (Dobni, 2008, p. 47).

Creativity and risk taking are values supported by the learning orientation of innovation cultures. A focus on learning is of critical importance to establishing and sustaining an innovation culture. Some researchers have gone so far as saying a learning orientation is an antecedent to innovation (Hurley & Hult, 1998; Sadegh & Ataei, 2012). The focus on learning and development enables employees to develop capacity, supports the development of problem

solving skills, and boosts creativity (Hurley & Hult, 1998). Organizations emphasizing the importance of learning, is another reflection of the investment made in human capital in innovative organizations. This orientation enables employees to develop sensemaking skills, identify emerging opportunities, and share knowledge across the organization (Tuzovic, Wirtz, & Heracleous, 2018). Dyer, Gregersen, and Christensen (2020) found five skills that are present in innovative entrepreneurs, of which four are tied to learning. They found that innovators ask a lot of questions, spend time observing the behaviors of key stakeholders to develop key insights, actively experiment, and embrace any opportunity to network with others to expand their knowledge base (Dyer, Gregersen, & Christensen, 2020).

Part of the learning orientation of innovation cultures is that employees are constantly learning from one another and that knowledge is shared across the boundaries within an organization. Swan, Scarbrough, and Robertson (2002) found that communities of practice have the potential to promote learning across an organization and create opportunities for knowledge transfer to enable greater adoption of innovation. Knowledge sharing in innovation cultures also occurs through narratives. Narratives support the development of new ideas but also allow for others to learn from the past experiences of their peers (Brown & Duguid, 1991). These narrative experiences are often shared in informal networks, or communities of practice and lead to knowledge transfer across internal boundaries (Brown & Duguid, 1991). Leaders also leverage narratives. In doing so they share past experiences and create flexibility in the narrative for employees to engage with the story in a way that allows them to apply it to their context (Bartel & Garud, 2009). Knowledge sharing through storytelling is a characteristic of the learning orientation of innovation culture and supports the connectivity between the people and the vision they are working towards.

Another key characteristic of learning in innovation cultures is that it spans boundaries and encourages collaboration. Boundaries exist in organizations—whether between hierarchy levels, departments, or other subunits. Boundary spanning allows for communication across these boundaries enabling greater potential for innovation success (Dombrowski et al., 2007; Michaelis, Aladin, & Pollack, 2018). The act of boundary spanning can look different depending on the organizational context and the ways to go about it can also differ but the essential component of the concept is that innovation requires communication across the organization. Through boundary spanning ideas can be shared across project teams and emerging changes can be integrated into the organizational fabric. Sharing information across boundaries poses potential risks, such as breaching confidentiality (Dombrowski et al., 2007). To mitigate these risks an organization must consider how they will structure their boundary spanning practices and how they can create efficiencies for those serving as boundary spanners (Dombrowski et al., 2007).

For boundary spanning to occur there has to be a spirit of collaboration within an organization. A collaborative approach encourages knowledge sharing across the organization and creates opportunities for cross-pollination of ideas and solutions (Hurley & Hult, 1998). Through collaboration diverse perspectives can come together. For true collaboration to occur the environment has to support power sharing and individuals have to trust their colleagues (Dombrowski et al., 2007). Through one example, Dombrowski et al. (2007) note that collaboration has the potential to supplement not replace the work of project participants and when the barriers come down it “allows the boundaries between internal and external knowledge to become porous in pursuit of market advances” (p. 198).

As has been previously noted, innovation cultures are characterized by risk-taking, creativity, participative decision-making, and collaboration. In order for these elements to exist successfully innovation cultures have to foster psychological safety and create safe spaces for employees to engage innovation work. Sadegh Sharifirad and Ataei (2012) note that psychological safety “can help the staff to capitalize their mental power to release and unleash the groundbreaking ideas leading to new productions” (p. 508). In a psychologically safe environment individuals will feel safe taking risks and not be in fear of facing a negative repercussion if an idea fails. Dombrowski et al. (2007) characterize these safe spaces as often existing in defined spaces where employees are removed from more typical business practices. These safe spaces are noted for encouraging play, experimentation, and free flowing communication between participants (Michaelis, Aladin, & Pollack, 2018).

Through all of these innovation-oriented behaviors, organizations pursue innovation in hopes of benefiting from the competitive advantage associated with successful innovation. Organizations who are successful in achieving a strong innovation culture take a market and value driven orientation. This means that innovation cultures engage in “value seeking and solutions oriented” work to push the organization forward (Dobni, 2008, p. 544). Strong innovation cultures are aware of the market context and the needs and challenges of various stakeholders. This awareness allows them to focus their energy on creating solutions that enhance the value experienced across stakeholder groups. Through these pursuits there is a focus on reinventing the value proposition associated with a particular product or process (Tuzovic, Wirtz, & Heracleous, 2018). An emphasis on value and a market orientation is a driving factor in enabling innovation organizations to be industry leaders who push the needle forward. As competitors respond and bring new products and processes to market, organizations with

innovation cultures survive and maintain relevance because they have already taken a future-focused approach to secure their place in the market (Wang & Ahmed, 2004).

The presence of the aforementioned elements supports the development of a sustained innovation culture. That said, the literature suggests that some of these elements have the potential to serve as barriers to innovation if not properly balanced. As previously mentioned, control can act as a barrier if not moderated properly with flexibility (Khazanchi, Lewis, & Boyer, 2007). Others have noted that poor resource allocation, resistance to change, and lack of appropriate skills can serve as impediments to innovation adoption (D'Este, Iammarino, Savona, & von Tunzelmann, 2012; Naqshbandi, Kaur, & Ma, 2014; Govindarajan & Trimble, 2005). These barriers can present differently depending on the context and may affect new and more established firms differently, with newer firms more likely to struggle with mismatched skill sets and established firms more likely to suffer from resistance to change (D'Este, Iammarino, Savona, & Von Tunzelmann, 2005). Innovation cultures are further compromised when faced with hierarchical structures that do not allow for boundary spanning and participative engagement.

**Table 1***Literature Review Table*

<b>Focus Area</b>	<b>Literature</b>
Innovation	Crossan & Apaydin (2010), Hamel (2006), Baregheh, Rowley & Sambrook (2009), Quintane, Mitch Casselman, Sebastian Reche, & Nylund (2011)
Innovation Culture	Akman & Yilmaz (2008), Barney (1986), Buschgens, Bausch, & Balkin (2013), Bartel & Garud (2009), Brettel & Cleven (2011), Brown & Duguid (1991), Christensen & Overdorf (2020), D'Este, Iammarino, Savona, & von Tunzelmann (2012), Dobni (2008), Dobni (2008), Dobni & Klassen (2015), Dobni, Klassen, & Nelson (2015), Dombrowski, Kim, Desouza, Braganza, Papagari, Baloh, & Jha (2007), Dyer, Gregersen & Christensen (2009), Euchner (2017), Govindarajan & Trimble (2005), Hurley & Hult (1998), Khazanchi, Lewis, & Boyer (2007), Martin-de Castro, Delgado-Verde, McLean (2005), Naqshabandi, Kaur, & Ma (2014), Navas-Lopez, & Cruz-Gonzalez (2013), Michaelis, Aladin, & Pollack (2018), Sadegh Sharifirad & Ataei (2012), Sarros, Cooper, & Santora (2008), Schein (1984), Schoemaker, Heaton, & Teece (2018), Steele & Murray (2004), Swan Scarborough, & Robertson (2002), Tuzovic, Wirtz, & Heracleous (2018), Wang & Ahmed (2004)

## **Introduction and Context**

### **PARTNER ORGANIZATION**

Southern New Hampshire University (SNHU) has experienced tremendous enrollment growth in the last decade as they have seen the number of degree-seeking students increase from 8,600 students to over 120,000 students (Blumenstyk, 2018). As they transformed from a regional university to a powerhouse in the online education world they have embraced an innovative approach to enhance the educational experience of students. Their entrepreneurial spirit is apparent in a center charged to embrace innovation and drive transformative projects across the institution. The Innovation Center at SNHU is the focus of this study.

The Innovation Center was originally created in 2015 as a unit tasked with addressing strategy and innovation across the institution. By 2018, SNHU's Board of Trustees, with the intention of future-proofing the institution, formally created the Innovation Center (SNHU Innovation Center). Now in their fifth year, the Innovation Center is a driving force behind the initiatives pushing for social justice and greater equity in access to pathways to higher education. They maintain a future focus to prepare the institution for the uncertainty that lies ahead. As a community of learners, the Innovation Center staff embraces risk and uncertainty while leaning on research and strategic planning to forge ahead and influence change to the benefit of current and future learners.

The Innovation Center is comprised of four areas (Table 2) that work collaboratively to develop technology, process, and competency innovations (SNHU Innovation Center). These teams support stakeholders across the community from students and faculty to the Chief Executive Officer to ideate and develop solutions to complex problems. Problems that are embraced by the Innovation Center must be aligned with the mission of the institution, provide a solution that positively impacts learners, and be future focused.

**Table 2**

*Innovation Center Area Functions*

Area	Function
Sandbox Collaborative	Conceptualize new ideas
Innovation Management Office	Manage emerging innovations
SNHU Labs	Test technology solutions
Incubator	Pilot new concepts

The center leverages a specific process to manage the project intake and lifecycle process. This project intake and lifecycle process drives the innovation work and serves as a benchmarking

tool for measuring where each project is in the innovation cycle and when it is prepared to advance from idea to full-scale launch.

## **PHENOMENON DESCRIPTION**

The Innovation Center, much like SNHU as a whole, has grown tremendously. Over the last two years the Innovation Center has more than doubled as it grew from 18 employees to just over 40. Leadership has noted that they are thrilled with the growth but with it comes a number of concerns. First and foremost the leadership of the Innovation Center lacks clarity in understanding what elements of their culture enables their innovation process. As they have brought in new employees they have not improved their onboarding practices to ensure that they are prepared to embrace innovation work and yet they continue to see success. Leadership wants to know what elements make up their culture and contribute to the creation of a unique and dynamic environment that enables the innovation process. They do not have a clear understanding of what enables them to see such a high level of success and there is a need to develop a better understanding of the elements present within the Innovation Center driving their innovation process. As they continue to grow and work towards future-proofing the institution they need to understand what capabilities enable them to function at a high level. The Innovation Center has been integral to the transformation SNHU has undergone over the last decade. What factors contribute to their innovation culture that allows them to pursue meaningful transformative work, and how can the knowledge of these factors be leveraged towards strengthening the Innovation Center for the future? Additionally, how can this information be leveraged for the purpose of developing better ways to specify it so that it can be measured for the sake of development and improvement?

As the Innovation Center continues to grow and serve the greater SNHU community the leadership team would like to better understand the elements of their innovation culture. This project is targeted at addressing this need and creating an understanding of the elements within their culture that support their innovation process to enable them to specify it so that measurements can be developed. To support them in understanding their culture this project will investigate the elements present amongst staff as well as the role of leadership in creating an environment where innovation thrives. Research focused on the innovation landscape and innovation culture will help Innovation Center leadership better understand how their innovation capabilities, processes, and practices align with innovation behavior research. As a unit, their work is in flux and projects can change at any moment and yet together they are able to adapt and achieve. The culture of the environment and the role of leadership are worth investigating. Recommendations for improvement are grounded in literature and will inform their practice while also allowing them to understand the elements contributing to their innovation culture.

The Innovation Center at SNHU is a unique context. As a unit they have supported leadership in developing some of the most significant initiatives that have led to the institution's growth as a leader in online higher education. Their ability to leverage innovation practices to implement large-scale improvement in an industry that is dealing with enormous challenges across the country is worth investigating. As higher education continues to see costs trending upwards and students continue to take on student debt SNHU has challenged the status quo and sought to offer an enriching education at an affordable price without sacrificing the student experience. There is much to be learned from investigating this unique space and the innovation culture they have embraced.

The Innovation Center is integral to the execution of initiatives tied to SNHU's strategic plan. This study provides valuable insight to both Innovation Center and university leadership to support them in understanding the elements of the Innovation Center's culture that support their innovation process. The success of the Innovation Center is central to the institution's success. As they continue to grow and focus on meaningful work the results of this study can shape their conversations around culture and potential changes that could be made to support innovation work. The findings and recommendations are grounded in the literature and create an opportunity for the organization to better understand their context in relation to existing research. Those in higher education and innovation work will also benefit from the findings presented in this quality improvement study. While unique to this specific context this case study on innovation culture could inform the development of innovation communities elsewhere.

## **KEY TERMS**

Innovation is defined broadly across the literature. For the purpose of this study three keywords, innovation, innovation capability and innovation culture, will be used frequently to explore the phenomenon. This study uses the following definitions for these key terms:

- *Innovation* is defined as “production or adoption, assimilation, and exploitation of a value-added novelty in economic and social spheres; renewal and enlargement of products, services, and markets; development of new methods of production; and establishment of new management systems. It is both a process and an outcome” (Crossan & Apaydan, 2010, p. 1155).
- *Innovation capability* is defined as “an important factor that facilitates an innovative organizational culture, characteristics of internal promoting activities and capabilities of

understanding and responding appropriately to external environments” (Akman & Yilmaz, 2008, p. 79).

- *Innovation culture* is defined as “a multi-dimensional context, which includes the intention to be innovative, the infrastructure to support innovation, operational level behaviors necessary to influence a market and value orientation, and the environment to implement innovation” (Dobni, 2008, p. 540).

These definitions will support the investigation into the Innovation Center’s culture and the development of recommendations for improvement.

## **Guiding Questions**

Two questions were established to support the investigation into the culture of the Innovation Center. The questions allowed for a holistic investigation of the phenomenon and ultimately the development of recommendations for improvement. After experiencing substantial growth in a short window of time the organization’s leadership wanted to understand the elements within their culture that supported their innovation process. The following questions were used to guide this work:

1. What elements of the organization’s culture enable the Innovation Center at Southern New Hampshire University’s innovation process?
2. What elements of the organization’s culture may be limiting the Innovation Center at Southern New Hampshire University’s innovation process?

## **Conceptual Frameworks**

Innovation success is driven by a strong innovation culture. As this study sought to understand the elements contributing to success within the Innovation Center two concepts

formed the conceptual framework guiding this quality improvement study. First, it was necessary to frame the work in an understanding of what constitutes organizational culture. Second, it was necessary to have a frame for understanding the elements of innovation cultures.

## **ORGANIZATIONAL CULTURE**

The organizational culture framework (Schein, 1984) guided the understanding of the organization. Schein (1984) defined organizational culture as:

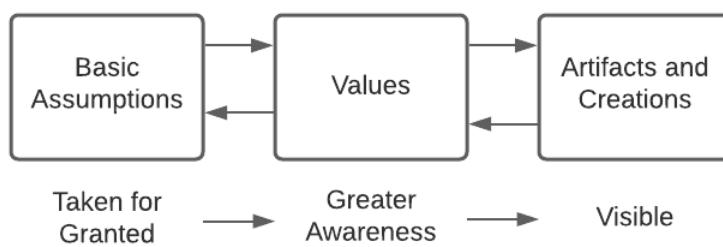
the pattern of basic assumptions that a given group has invented, discovered, or developed in learning to cope with its problems of external adaptation and internal integration, and that have worked well enough to be considered valid, and therefore, to be taught to new members as the correct way to perceive, think and feel in relation to those problems. (p. 3)

Schein (1984) provided a framework for understanding the elements that make up an organization's culture. These elements serve as a glue to hold an organization together through "a source of identity and strength" (Schein, 1984, p. 14). For Schein (1984) understanding an organization's culture requires an analysis at multiple levels. The levels of analysis and their interaction are outlined in Figure 1. Artifacts are the first level of analysis and are the most visible elements of an organization's culture. Artifacts include things such as the physical structures and spatial arrangements, visible behaviors, technology, attire, and the organization's publically available documents (Schein, 1984). While visible and often obvious what is less clear about these artifacts are the reasons driving the behaviors. To understand why a group behaves a certain way it requires a second level of analysis through an evaluation of their values (Schein, 1984). Values are less visible but often discernible through inferences made during interviews and observations. These inferences however are framed around behavior and an

outward articulation of how someone explains their own behavior rather than an understanding established through the examination of the unconscious drivers of behavior (Schein, 1984). To get to a full picture of an organization's culture a third level of analysis is required. This third level examines the basic underlying assumptions that frame "how group members perceive, think, and feel" (Schein, 1984, p. 3).

**Figure 1**

*Levels of Culture and Their Interaction (Schein, 1984)*



The evaluation of assumptions is where a true understanding of values and behaviors comes together. Schein (1984) writes:

[underlying] assumptions are themselves learned responses that originated as espoused values. But, as a value leads to a behavior, and as that behavior begins to solve the problem which prompted it in the first place, the value gradually is transformed into an underlying assumption about how things really are. As the assumption is increasingly taken for granted, it drops out of awareness. (p. 4)

These assumptions are powerful and expose potential clashes or tensions within an organization. This can occur when an assumption is brought up and participants refuse to engage in conversation or try to brush something off as irrelevant (Schein, 1984).

This framework has important implications for the approach of this study. Embracing Schein's (1984) constructs and three levels of analysis enabled an examination that delved deep into not just the surface layer artifacts shaping the culture within the Innovation Center but also the hidden assumptions that exposed potential areas of improvement or disconnects across levels within the Innovation Center.

## **ELEMENTS OF INNOVATION CULTURE**

This study required going beyond just establishing the levels of organizational culture as presented in the first framework. A second framework was necessary to guide the understanding of what constitutes an innovation culture and allows an organization to embrace the competitive advantages characteristic of the types of cultures. The work of Michaelis, Aladin, and Pollack (2018), Dombrowski, Kim, Desouza, Braganza, Papagari, Baloh, and Jha (2007), and Dobni (2008) provided a comprehensive understanding of the elements that support an innovation culture and drive success in innovation organizations. The elements driving an innovation culture that are referenced throughout this study are outlined in Figure 2.

**Figure 2**

*Elements of Innovation Culture*



These elements are defined as:

- Leadership: the activities pursued by leaders in support of innovation, includes acts such as idea sponsorship and serving as innovation champion (Dombrowski et al., 2007; Michaelis, Aladin, & Pollack , 2018).
- Participative/democratic communication: characterized by employee engagement in decision-making, decentralization that supports the exchange of ideas, and open communication (Dombrowski et al., 2007; Michaelis, Aladin, & Pollack, 2018).
- Creativity and empowerment: characterized by “the creative capacity of employees and the amount of creativity that employees are allowed to express in their work...and the ability of employees to improvise and enact at will” (Dobni, 2008, p. 551).
- Market orientation: characterized by a contextual awareness of their industry and customers and an ability to generate interpretations that lead to competitive advantages for the firm (Dobni, 2008).

- Value orientation: characterized as an emphasis on adding value to the product or experience provided to clients and/or customers (Dobni, 2008).
- Organizational learning: access to training and development in pursuit of innovation objectives (Dobni, 2008).
- Safe spaces: characterized by the presence of psychological safety, employees are able to freely discuss ideas and explore without fear of negative consequences (Dombrowski et al., 2007; Michaelis, Aladin, & Pollack, 2018).
- Boundary spanning: characterized by knowledge sharing and communication across the boundaries of an organization (Dombrowski et al., 2007; Michaelis, Aladin, & Pollack, 2018).
- Mission/vision focus: characterized by the pursuit of working towards an organization's common goal (Dombrowski et al., 2007; Michaelis, Aladin, & Pollack, 2018).
- Flexibility: characterized by capacity for job design and opportunities for exposure across the organization's various contexts and business processes (Dombrowski et al., 2007; Michaelis, Aladin, & Pollack, 2018).

These elements along with Schein's (1984) organizational culture framework supported a rich understanding of the environment of the Innovation Center and the drivers and inhibitors of their success.

## **Methodology**

### **CASE STUDY APPROACH**

To answer this studies guiding questions this work took the form of a case study that utilized a mixed-methods approach. Babbie (2018) prescribes the use of a case study to investigate a specific context with the intention of developing an in-depth understanding of that

particular space. This research strategy was appropriate given the nature of the capstone and the intention to understand the specific innovative environment within the Innovation Center. Figure 3 outlines the study design. A mixed-methods approach allowed for the use of multiple data sources that leveraged both quantitative and qualitative methods. The use of mixed-methods supported the creation of a broader picture and through the combination of quantitative and qualitative data richer answers to the research questions emerged (Wilson, 2018).

### Figure 3 Research Strategy



This study originally intended to utilize five data collection methods:

- Review of existing data
- Semi-structured interviews
- Observations
- Innovation Quotient Questionnaire
- Workshop

Qualitative data allowed for a deeper understanding of how individuals experienced their unique context (Merriam & Grenier, 2019). Multiple forms of qualitative data also allowed for a

rich interpretation of how individuals within the Innovation Center interacted with one another and constructed a culture that supports their innovation process. To that end, the study was designed to incorporate four qualitative data collection methods. A review of existing data was conducted to look at the organization's documentation, which supported a deeper understanding of the existing innovation capabilities and how the organization framed themselves to the public. Semi-structured interviews with various members of the Innovation Center staff helped to build a narrative of individual experiences and these stories informed the exploration of innovation culture and the role of leadership in building that culture. Observations increased the richness of the narrative through a participatory experience in the Innovation Center that exposed both formal and informal practices driving their innovation culture. The fourth method of qualitative data was intended to come in the form of a workshop. As a result of shifted priorities due to the pandemic, this workshop was eliminated from the final data collection plan.

Quantitative data came in the form of survey responses through the selected instrument, the Innovation Quotient Questionnaire (Rao & Weintraub, 2013). This instrument measured the strength of the organization across six building blocks of innovative cultures. The survey data was collected simultaneous to the on-site observations and interviews and provided quantitative context to the qualitative data when reviewed at the conclusion of the observation period.

## **QUALITATIVE**

A number of qualitative methods were utilized that leveraged in-person interaction, existing organizational literature, and an examination of open-ended responses from the survey instrument. These methods established greater clarity and led to a richer understanding of the organization's culture and their innovation process.

### ***Semi-structured Interviews***

Semi-structured interviews helped construct a narrative of the culture within the Innovation Center and the elements behind their success. Interviews were conducted in person prior to the COVID-19 stay at home order and a shift to remote work. Interview participants were selected out of convenience. Staff members available during the dates of observation were invited to sit for an interview. The objective was to complete 4 to 10 interviews and ultimately four were conducted. The sample would have been larger had the pandemic not occurred in the middle of the observation period. Fortunately, conversations occurred with employees at each of the designated staffing levels within the organization.

Interview questions were created to support the study's guiding questions. The questions targeted each of the areas identified in the research questions and also provided flexibility for respondents to provide additional insight into the environment with the Innovation Center. The questions supported a triangulation with the other qualitative data and the data collected through the survey instrument. The full list of interview questions are outlined in Appendix A.

Interview transcripts were reviewed multiple times for context and coding. The first analysis centered on establishing context and trends and allowed for key excerpts to be highlighted. The subsequent reviews served the purpose of aligning excerpts with thematic codes (Table 3) established based on the elements of innovation culture.

**Table 3***Qualitative Coding Themes*

Leadership
Participative/Democratic Communication
Creativity and Empowerment
Market Orientation
Value Orientation
Organizational Learning
Safe Spaces
Boundary Spanning
Mission/Vision Focus
Flexibility

***Observations***

Observations created the opportunity to examine the formal and informal practices within the Innovation Center. Observations took place across multiple days with various levels of activity on-site. This created a clearer picture of the practices of Innovation Center staff and leadership. Observations occurred in March 2020 on dates selected based on mutual convenience and based on the greatest opportunity for staff interaction. Over the course of one week, three days were spent at the organization. The first day was categorized as a normal day at the Innovation Center. Staff were in and out of meetings and went about their “normal” work routines. The second and third days the observations centered around a workshop that involved members of the Innovation Center and the greater community as they worked through a key institutional initiative. The observations capped off with a social gathering held to recognize the work of the team over the course of the workshop.

Comprehensive notes were taken each of the observation dates and at the end of each day observation field notes were collected that provided a high level summary of the day’s takeaways. Observation notes were multifaceted and included both explicit examples of things that occurred and interpretations of the environment and the activity that was witnessed. Notes

were organized around constructs that were anticipated to appear during the on-site sessions, such as mission related comments, leadership's example, and creativity, but they also left room to capture unanticipated events, such as side comments of participants or attitudes expressed that were not originally expected. This format allowed the notes to capture who was present, how participants communicated, and what resources were utilized as the participants engaged in the innovation process. The intention was to return to the Innovation Center for additional observations however shortly after the initial observations the campus went remote as a result of COVID-19. That said, there was a great deal of variety in the activities captured during the observations and the data collected provided additional context to the narrative which allowed for further triangulation of data.

### ***Open-ended Survey Responses***

Additional qualitative data came from the two open-ended questions included with the Innovation Quotient Questionnaire. These responses provided additional context and were evaluated and categorized along the established elements of innovation cultures codes. Nine of the fifteen survey participants completed the open-ended survey responses, which equated to 60% participation rate by respondents.

### ***Review of Existing Data***

The Innovation Center provided robust documentation on their mission, processes, and strategic plan. This documentation was reviewed and supplemented the narratives collected through observations and interviews. Documentation was examined using the same thematic coding structure outlined for semi-structured interviews and observations. This documentation represented not only the outward representation of the organization and how they chose to publically portray themselves but also provided context to the data collected through the survey, interviews, and observations.

## QUANTITATIVE

This project utilized the Innovation Quotient Questionnaire, which provided quantitative support to the qualitative data collected. The instrument developed by Rao and Weintraub (2013) evaluated innovation culture along six categories that they identified as drivers of innovation culture. This survey was selected to provide additional context around the innovation culture within the Innovation Center at SNHU. While the instrument lacks content validity the elements described and ultimately the results added to the narrative established through the qualitative data collection process. As the survey was not the primary framework for understanding the organization's innovation environment and only a supporting component of the data the lack of validity was not deemed to be detrimental.

The selected survey instrument evaluated the innovation environment across six building blocks broken into 18 factors that were made up of 54 elements, available in Table 4 (Rao & Weintraub, 2013). Each of the elements had an assigned description attached to it that was shared with survey respondents to determine its rating. Survey respondents were asked to rate the organization in the strength of each element. The element scores were then averaged to create factor averages, which were used to calculate building block averages (Rao & Weintraub, 2013). The scores for each of the six building blocks were then averaged to determine the Innovation Quotient (Rao & Weintraub, 2013).

**Table 4***Innovation Quotient Questionnaire Elements (Rao & Weintraub, 2013)*

Block	Factor	Element	Block	Factor	Element
Values	Entrepreneurial	Hunger	Processes	Ideate	Generate
		Ambiguity			Filter
		Action oriented			Prioritize
	Creativity	Imagination		Shape	Prototype
		Autonomy			Iterate
		Playful			Fail smart
	Learning	Curiosity		Capture	Flexibility
		Experiment			Launch
		Failure OK			Scale
Resources	People	Champions	Climate	Collaboration	Community
		Experts			Diversity
		Talent			Team work
	Systems	Selection		Safety	Trust
		Communication			Integrity
		Ecosystem			Openness
	Projects	Time		Simplicity	No bureaucracy
		Money			Accountability
		Space			Decision-making
Behaviors	Energize	Inspire	Success	External	Customers
		Challenge			Competitors
		Model			Financial
	Engage	Coach		Enterprise	Purpose
		Initiative			Discipline
		Support			Capabilities
	Enable	Influence		Individual	Satisfaction
		Adapt			Growth
		Grit			Recognition

Survey participants rated the organization in each element category. Respondents rated the organization on a scale of 1-5 (1 – not at all, 2 – to a small extent, 3 – to a moderate extent, 4 – to a very great extent, and 5 – to a very great extent). Each survey respondent was also asked to provide an overall innovation score and was given the opportunity to respond to two open-ended questions. Those questions, created by Rao and Weintraub (2013) are:

1. What are the things/areas your organization is doing well in its innovation effort?
2. What are the things/areas you would like your organization to improve in terms of innovation?

The 42 staff members who worked across the various areas of the Innovation Center were asked to participate. The survey was conducted electronically. Staff were invited to participate by email and were encouraged to participate during the on-site observations and semi-structured interviews. Of the 42 employees seventeen started and fifteen completed the survey. The survey achieved a 36% response rate. Of the fifteen respondents nine completed the optional open response questions. Staff at each of the defined levels (executive leadership, director, and staff) completed the survey. A representation of the sample is outlined in Table 5. Additional biographical characteristics were not collected so determinations were not made around gender, age, and time employed. Overall there was a disproportionate number of directors compared to staff in the sample compared to the composition of the entire staff. This difference is likely attributed to the greater exposure to director level staff compared to those at the staff level on-site. An additional factor that contributed to the disproportionate representation was the director level staff's increased investment in the outcomes of the work. Additional consideration was made to the timing of the survey, which launched just before the COVID-19 shutdown.

**Table 5**

*Survey Respondents by Staff Level*

	Survey sample	All staff
Executive Leadership Team	7%	5%
Director	27%	12%
Staff	67%	83%

Analysis started with the calculation of the averages of the element scores, the factor averages, building block averages, and ultimately the Innovation Quotient. A one-way repeated measures ANOVA was conducted on the 15 respondents scores to examine the differences in responses between the building blocks. Results (Table 6) showed that there were statistically significant differences in the building block responses. ( $F(5,70) = 16.34287$ ,  $p<0.001$ ).

**Table 6**

*One-way Repeated Measures ANOVA Results*

SUMMARY				Count	Sum	Average	Variance
Values				15	58.33333	3.888889	0.201058
Resources				15	55.22222	3.681481	0.246678
Behaviors				15	59	3.933333	0.243034
Processes				15	45	3	0.620811
Climate	15	55.88889	3.725926	0.220223			
Success	15	59.22222	3.948148	0.4301			
Source of Variation		SS	df	MS	F	P-value	F crit
						3.05E-	
Respondents	19.20905		14	1.372075	11.63112	13	1.835683
Blocks	9.639506		5	1.927901	16.34287	1.18E-	
Error	8.257613		70	0.117966		10	2.345586
Total	37.10617		89				

Fifteen paired t-tests were conducted across the six variables to determine the statistically significant differences in means. Results (Table 7) showed statistical significance between the means of values and processes, resources and processes, behaviors and processes, climate and processes, and success and processes.

**Table 7*****T-test Results***

T-Test Results: 6 constructs with 15 paired tests , p-value for each of those tests was .003. A value less than .003 results in statistical significance.																							
		Values		Resources		Values		Behaviors		Values		Processes		Values		Climate		Values		Success			
Mean		3.888888889	3.681481481	Mean		3.888888889	3.933333333	Mean		3.888888889	3	Mean		3.888888889	3.725925926	Mean		3.888888889	3.948148148				
Variance		0.201058201	0.246678424	Variance		0.201058201	0.24303351	Variance		0.201058201	0.620811287	Variance		0.201058201	0.2202223398	Variance		0.201058201	0.430099941				
Observations		15	15	Observations		15	15	Observations		15	15	Observations		15	15	Observations		15	15	Observations		15	
Pearson Correlation		0.597912198		Pearson Correlation		0.745992698		Pearson Correlation		0.606530327		Pearson Correlation		0.754339457		Pearson Correlation		0.758685666		Pearson Correlation			
df		14		df		14		df		14		df		14		df		14		df			
t Stat		1.88592357		t Stat		-0.50917077		t Stat		5.489492613		t Stat		1.958805655		t Stat		-0.533672281		t Stat			
P(T<=t) one-tail		0.040112683		P(T<=t) one-tail		0.309279976		P(T<=t) one-tail		3.98572E-05		P(T<=t) one-tail		0.035181156		P(T<=t) one-tail		0.300969595		P(T<=t) one-tail			
		Resources		Behaviors				Resources		Processes				Resources		Climate				Behaviors		Processes	
Mean		3.681481481	3.933333333	Mean		3.681481481	3	Mean		3.681481481	3.725925926	Mean		3.681481481	3.948148148	Mean		3.933333333	3	Mean		3.933333333	0.620811287
Variance		0.246678424	0.24303351	Variance		0.246678424	0.620811287	Variance		0.246678424	0.2202223398	Variance		0.246678424	0.430099941	Variance		0.246678424	0.430099941	Variance		0.246678424	0.430099941
Observations		15	15	Observations		15	15	Observations		15	15	Observations		15	15	Observations		15	15	Observations		15	15
Pearson Correlation		0.713825295		Pearson Correlation		0.558347408		Pearson Correlation		0.820759508		Pearson Correlation		0.519621457		Pearson Correlation		0.826371722		Pearson Correlation			
df		14		df		14		df		14		df		14		df		14		df			
t Stat		-2.605492392		t Stat		4.024528403		t Stat		-0.59284436		t Stat		-1.775740405		t Stat		7.674208866		t Stat			
P(T<=t) one-tail		0.010377125		P(T<=t) one-tail		0.000627138		P(T<=t) one-tail		0.28136997		P(T<=t) one-tail		0.048752844		P(T<=t) one-tail		1.1072E-06		P(T<=t) one-tail			
		Behaviors		Climate				Behaviors		Success				Processes		Climate				Processes		Success	
Mean		3.933333333	3.725925926	Mean		3.933333333	3.948148148	Mean		3	3.725925926	Mean		3	3.948148148	Mean		3.725925926	3.948148148	Mean		3.725925926	3.948148148
Variance		0.24303351	0.220223398	Variance		0.24303351	0.430099941	Variance		0.620811287	0.2202223398	Variance		0.620811287	0.430099941	Variance		0.220223398	0.430099941	Variance		0.220223398	0.430099941
Observations		15	15	Observations		15	15	Observations		15	15	Observations		15	15	Observations		15	15	Observations		15	15
Pearson Correlation		0.8409253456		Pearson Correlation		0.74952462		Pearson Correlation		0.677319772		Pearson Correlation		0.544393755		Pearson Correlation		0.635333141		Pearson Correlation			
df		14		df		14		df		14		df		14		df		14		df			
t Stat		3.029398872		t Stat		-0.132016372		t Stat		-4.820597585		t Stat		-5.255064176		t Stat		-1.690308509		t Stat			
P(T<=t) one-tail		0.004505327		P(T<=t) one-tail		0.448367735		P(T<=t) one-tail		0.000135921		P(T<=t) one-tail		6.08595E-05		P(T<=t) one-tail		0.056551195		P(T<=t) one-tail			

A second analysis was conducted to compare the responses of the staff compared to those in the director and executive leadership category. Given that only one respondent represented the executive leadership team their data was included with those respondents from the director level. The results (Table 8) showed that there was not a statistically significant difference in responses based on staff level.

**Table 8***One-way Repeated Measures ANOVA Results – Staff versus Director/Leadership*

<i>SUMMARY</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>
Staff	6	21.95556	3.659259	0.141663
Director/Executive	6	22.62222	3.77037	0.116675
Values	2	7.766667	3.883333	0.000556
Resources	2	7.344444	3.672222	0.001543
Behaviors	2	7.922222	3.961111	0.013889
Processes	2	6.088889	3.044444	0.035556
Climate	2	7.466667	3.733333	0.000988
Success	2	7.988889	3.994444	0.03858

**ANOVA**

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Level	0.037037	1	0.037037	3.424658	0.123456	6.607891
Blocks	1.237613	5	0.247523	22.88737	0.001861	5.050329
Error	0.054074	5	0.010815			
Total	1.328724	11				

The case study strategy using a mixed-methods approach created an opportunity to evaluate multiple forms of data to build a rich narrative of the environment within the Innovation Center. The use of qualitative and quantitative data collection methods resulted in a clear picture of the elements contributing to the success of the Innovation Center and the innovation culture that has enabled that success. The inclusion of staff across each of the defined levels as well as the varied nature of the observations created a robust account of what allows the Innovation Center to perform at a high level. The data is limited however by the abrupt lockdowns that occurred as a result of COVID-19 and the need for staff to pivot and focus on institutional priorities. The overall impact of COVID-19 will be addressed in the discussion and limitations section. It should be noted that an examination of the innovation environment in the aftermath of

COVID-19 could result in useful data and an even deeper understanding of the strengths of the organization.

## Findings

*Question 1: What elements of the organization's culture enable the Innovation Center at Southern New Hampshire University's innovation process?*

**Finding #1: The Innovation Center embraces a commitment to innovation as a result of strong leadership and a focus on innovation that comes from the organization's C-suite.**

The literature review highlighted leadership as essential to cultivating an innovation culture. Across the literature, senior leadership was identified as integral to an organization in adopting an innovation agenda and establishing the structures necessary to pursue innovation work. Dobni (2008) noted that leaders have this level of impact through living the vision and encouraging the adoption of innovation capabilities by their employees. Leaders are also important in innovation cultures as they can provide key support and a safe space for employees to think creatively and take risks (Sarros, Cooper, & Santora, 2008; Dobni & Klassen, 2015).

Strong leadership was identified as a key element driving success of the Innovation Center across each data collection method. Comments across the interviews highlighted the important role that leaders have in framing the organization's commitment to innovation. That leadership starts at the top with the president's innovation mandate; this top level support is key to innovation success (Dobni, Klassen, & Nelson, 2015). As one interviewee noted:

Our president has a strong vision and that vision carries down to the community and so much of it manifests within the work that we do here in the Innovation Center.

The president's strong leadership was characterized as keenly aware of the challenges facing the organization and there was consistently an emphasis on meeting these challenges before they

come to a reality. This strong market orientation driven by leadership was a factor contributing to the Innovation Center's focus on innovation. Others shared the value leaders bring to the organization as experienced innovators:

It's hard not to be inspired by our leadership. I mean, there is a ton of experience at the top and when it comes to innovating they know what they are doing.

They know what they're talking about. When any of them get going on innovation you stop and listen because you're going to learn something.

They lead by example; they come up with ideas even when it's risky.

Beyond their expertise it was apparent throughout the interviews and observations that leaders fostered an incredible amount of support across their employees. Repeatedly through the facilitation of a multiday workshop a member of the leadership team said:

How can we help? What do you need from me to be successful?

The work you're doing has my support but also the president's. We all want to see you succeed.

What's standing in your way? Are there ways I can eliminate that barrier?

Or as one employee noted:

They're always checking in and making sure we're okay. They know my spouse and my child and they always ask how we're doing before ever diving into business. They set the tone.

Having leadership support was integral to the success of the Innovation Center. Beyond the comments made in interviews and observations their critical role came through in the results of the Innovation Quotient Questionnaire. Element scores noted that leaders inspire a future focused vision, serve as innovation champions, and model innovation behaviors.

The Organizational Culture framework enhances the explanation of leadership's role in the Innovation Center in driving their innovation process. From a visible, artifact level leaders have created the space, shape the language around innovation, and processes used in pursuit of innovation. Leaders are also responsible for shaping values through their interactions with staff and modeling behavior. Finally, through storytelling and time they have established the foundation of the organization's underlying assumptions; assumptions as straightforward as being an innovative organization.

**Finding 2: The Innovation Center has a strong vision and mission driven focus tailored to add value and address yet-to-be realized future challenges.**

The Innovation Center staff were driven by a common purpose and the pursuit of enhancing the vision set forth by the institution's president. This is a key element of driving the innovation process in this innovation culture as outlined in the literature review and highlighted in the works of Dombrowski, Kim, Desouza, Braganza, Papagari, Baloh, and Jah (2007), Dobni (2008), Sarros, Cooper, and Santora (2008) and Michaelis, Aladin, and Pollack (2018). Innovation cultures are successful because employees take a mission focused approach and embrace the singular focus of working towards the betterment of the organization. Dombrowski et al. (2007) stressed the significance of working towards a singular goal, "imagine how much an organization would gain if it had a culture of working for the common goal of furthering organizational performance" (p. 193). The Innovation Center embodied this idea of working towards furthering organizational performance by pursuing a singular goal.

Across the Innovation Center work was pursued that drove towards the common goal of the institution. That pursuit was reflected in the project intake process outlined in the Innovation

Center's literature. Staff used three questions to assess whether or not a project aligns with their vision, these three questions were:

1. Does the project align with the institution's mission?
2. Does the project prepare the institution for the future?
3. Does the project offer a solution that benefits learners?

Through those three questions the Innovation Center showed a commitment to only work on projects that aligned with the strategic commitments of the institution. Their process of asking these questions throughout a project's cycle ensured that they only devoted time to projects that advanced the institution's mission. Employees noted the commitment to vision and the role of leadership in instilling this commitment:

Our president has a strong vision and that vision carries down to the community and so much of it manifests within the work that we do in the Innovation Center.

People really buy-in. The vision is clear and there's so much enthusiasm for being a part of this. I think that is a big part of what keeps us coming to work is the excitement of working towards something we believe in.

Another participant noted the importance of mission alignment across the work being done across the Innovation Center;

We have to be forward thinking, you know, and ultimately everything's aligned with the mission of the university so those are the sorts of things that drive the choices we make.

The commitment to a singular vision of preparing the university for the future was readily apparent throughout the course of observations and interviews. The commitment was also reflected in design elements throughout the space referencing the world in 2030. It was apparent that the focus of initiatives was not on the present but on addressing value creation opportunities

to meet the needs of learners of the next decade. This commitment was echoed in the survey responses collected through the Innovation Quotient Questionnaire. The organization had high marks in elements related to vision and consistency in acting in accordance with the institution's espoused values.

**Finding 3: The Innovation Center has cultivated a safe space where employees are valued as integral to driving innovation and encouraged to be creative, experiment, and embrace ongoing learning.**

The literature review showed the importance of people in constructing a strong innovation culture. Dobni (2008) stressed the importance of a participative environment in which employees are valued and trust and respect are clearly cultivated. Innovation cultures are successful when their employees are recognized as integral to pushing innovation forward and enhancing the organization's value. Part of showing employees they are valued is giving them the space to be creative and explore new ideas without fear of consequence. The Innovation Center embodied these ideals and leaders clearly crafted an environment where employees felt valued.

A number of comments were made that captured the importance of people in the organization's success in innovation and the emphasis placed on bringing the right people into the Innovation Center:

It's all about the people and making the right hires. When everything goes wrong and you have to call home and say you're missing dinner are you with people you want to be with?

This is an environment characterized by colleague support.

We've definitely hired internally but also externally and the thing that we always keep in mind is what is the value add to the team dynamic. I think it's just as important for us as the skills a new hire is bringing.

So much of what we're doing centers around the human experience and that starts with recognizing the human experiences of those around us pursuing this work. In that way leaders are very supportive.

The dynamic and support that we provide each other is what makes us so successful.

Support seems to be a key factor in our culture.

All of these comments were made in an environment where it was obvious that staff and leadership got along and really enjoyed being around one another. That level of support and care for each other created a space where employees felt comfortable to try new things and explore new ideas. Comments that spoke to this community support included:

There is a lot of genuine camaraderie. We work hard and we play hard.

It has always stood out to me that I'm cared for here.

You don't need to know it all because the people around you step up to fill gaps that may exist.

This support was echoed by a survey respondent:

Staff and leadership support for teams working in innovation is outstanding, considering the intellectual, emotional, and physical needs of those doing the work.

As a result of the supportive environment and safety created, the Innovation Center was able to place an emphasis on being creative, experimental, and constantly pursuing learning opportunities. These factors were consistently referenced across the literature as integral to developing and sustaining an innovation culture. For Dobni and Klassen (2015) empowering

employees to be creative is a driver of innovation. Whereas Dombrowski et al. (2007) stressed the importance of creating a climate where employees felt safe to engage in experimentation without restrictions. Numerous comments were made about the role of creativity, experimentation, and continuous learning in the Innovation Center, with several focusing on the role of curiosity driving that experimentation and an urge to learn:

I try to bring curiosity and a forward thinking approach to my work every day. I've learned to be flexible working in this space. Our team brings that curiosity too and we bring motivation to look forward to the future, keeping in mind that we have to be practical in our experimentation.

Our ongoing curiosity and our ongoing quest to continue learning...I think that is what sets us apart as a group.

It's a safe space to play around with ideas and experiment. If you're not learning, you're probably not doing your job.

Projects are treated like clay, they're malleable and we can build things up as we go.

Other participants noted the professional and personal development that supported their innovation efforts:

In terms of professional development we always ask how are we bringing those newly developed skills and knowledge back to the organization.

Plenty of opportunity to work on projects that excite me...that's something that I really enjoy. The personal development in a lot of ways bleeds into the work life.

The safe space was also characterized by the support of failure and the idea that through failure learning can occur:

Failure is going to happen. We don't love it and can be hard headed at times but we know as long as we take something away from that failure it is valuable.

When it comes to failure I think what's most important is that when we do fail we ask how we can learn from it.

These comments reflected the ideas presented by Dobni (2008) that innovation cultures embrace risk and are tolerant of mistakes because of the learning that can occur through failure. One leader commented on the importance of owning mistakes during the multi day workshop:

We've all made mistakes to get to this place [referencing an innovation project' but we need to own that and move forward. We can't let it stop us.

The elements of the Innovation Center's culture that contributed to a safe space where employees felt comfortable to experiment and play were reinforced by the results of the Innovation Quotient Questionnaire. Across the instrument's values building block the organization earned some its highest marks in the factors of creativity, entrepreneurial, and learning. These factors contribute to the Innovation Center's ability to pursue change initiatives that enable SNHU to be at the forefront of emerging technologies in higher education.

*Question 2: What elements of the organization's culture may be limiting the Innovation Center at Southern New Hampshire University's innovation process?*

**Finding 4: Senior leadership drives the innovation agenda.**

Leaders are essential to establishing an environment where an innovation culture can thrive. The literature however identified the important balance that leaders must strike to get the most out of the organization's innovation potential. Khazanchi, Lewis, and Boyer (2007) characterized this balance as a combination of flexibility and control. The leaders within the Innovation Center found this balance in providing employees with independence as they navigate

the innovation process while at the same time frequently interacting. Also essential to a thriving innovation culture is active participation across the organization in bringing ideas to the innovation agenda (Martin-de Castro, Delgado-Verde, Navas-Lopez, & Cruz Gonzalez, 2013). A basic assumption (Schein, 1984) presented by leadership is that ideas are brought forth across the institution but the data collected found that leaders drove the innovation agenda.

A number of comments identified the focus placed on projects identified by the institution's leaders:

All of our projects come from executive leaders within the organization and are automatically worked on because of who requested it.

There is a focus on ideas that come from the top.

Another member noted that the focus on leadership led projects is apparent but that there is a potential shift:

There are a lot of top down initiatives that are fed to the Innovation Center staff but we have begun to see other groups bring ideas to the table.

Survey data also noted the focus on idea generation being leader focused with the respondents rating the organization below average for generating ideas from diverse sources. These comments highlighted the ways that leaders while still encouraging innovation can hinder the organization embracing its full innovation potential. While the Innovation Center leadership team has been vital to cultivating a strong innovation culture and establishing a foundation for a thriving innovation process the emphasis on leadership driven projects could be holding back the organization from being even more innovative.

## **Finding 5: Community participation in innovation idea generation beyond Innovation**

### **Center staff is limited.**

Boundary spanning and participative engagement are key elements to a successful innovation culture. Hierarchical structures that do not allow for these elements can compromise an organization's ability to reach their full innovation potential. While the Innovation Center has been very successful in their innovation pursuits the data collected showed that greater community participation could enhance their efforts as current structures emphasize leadership-focused initiatives. As a physical space the Innovation Center is open to the community. Participants noted that members of the greater campus community often use the space for meetings and various activities. One participant stated:

Sure there are a lot of people that come here, even if just for the workspace and the environment. People will come here and camp out in a booth like we're doing, small meetings here, and using the drywalls. Obviously the auditorium around the corner, people will book half-day sessions and come here for retreats or to do strategic planning. Really consistently different parts of the university come over here. The space was built for team working and strategizing so people come over to use it for that.

These statements of the space being used for meetings is in contrast to the comments collected in the survey regarding community members actively participating in innovation and make a distinction between people using the space and people using the space in pursuit of innovation. The survey responses highlighted the lack of community inclusion in innovation conversations. Responses to the open-ended questions included:

We need to diversify the voices being brought into the conversation.

[We can improve by] adding more voices to the conversation.

Too often we let politics guide decision making.

Other responses noted the lack of awareness of innovation efforts across the institution and the desire for more opportunities to engage in knowledge sharing characteristic of boundary spanning:

[We need] more visibility of ongoing efforts [and the] ability for more of the team to troubleshoot or offer insight. [We also] need a better intake process and clarity for outsiders.

In the future I hope to see more opportunities to build communities of practice for likeminded individuals throughout the three horizons of the University to innovate together.

One interviewee noted that perhaps the problem of community participation is a lack of awareness or knowledge of what the purpose of the Innovation Center is:

I don't know how many people know that this is the kind of thing [innovation and idea generation] that we can help with. I think a lot of people do know but they may be hesitant but I don't know the reasons for that. Or it could be that people don't know as much as we think that they do. It could go either way.

## Discussion

*Question 1: What elements of the organization's culture enable the Innovation Center at Southern New Hampshire University's innovation process?*

*Question 2: What elements of the organization's culture may be limiting the Innovation Center at Southern New Hampshire University's innovation process?*

The two guiding questions sought to identify the elements that contributed the Innovation Center's innovation process and the elements that perhaps limited their innovation potential. The

data collected led to the identification of a number of key characteristics present across the Innovation Center that closely aligned with the characteristics identified as supportive of innovation cultures in the literature review and also highlighted some areas that had room for improvement.

## **LEADERSHIP**

The literature review honed in on the critical role that leaders have in constructing an organizational culture that supports the innovation process. These innovative leaders are characterized as champions of innovation and ardent supporters of employees (Dombrowski et al., 2007; Michaelis, Aladin, & Pollack, 2018). Across the Innovation Center leaders were critical to establishing the innovation focus and set the tone for a singular vision. This vision saw the organization driven to future-proofing the institution and developing programs to enhance the experience of their learners. Leaders were identified by their staff as innovation experts and valued resources throughout the innovation process. Innovation Center leaders cultivated an environment with incredible support for each member of the team. Staff across the center were identified as not just valued but critical to the success of the operation. Leadership set the tone for how individual team members treated each other and ultimately created an environment with strong colleague support.

While leaders were noted as integral to the creation of an innovation culture that supports a strong innovation process they were also identified as potential barriers to reaching their full innovation potential due to their level of control over the innovation agenda. Leaders were very supportive and also gave staff the flexibility to pursue their work but the focus on what projects were selected was largely tied back to having importance to leaders. Khazanchi, Lewis, and Boyer (2007) noted that the imbalance of control and flexibility could serve as an impediment to

innovation. This disparity in providing staff the flexibility to do their work but not necessarily engaging ideas outside of the leadership focus highlighted a problematic underlying assumption.

## **PARTICIPATIVE/DEMOCRATIC COMMUNICATION**

Support for idea sharing and collaboration was apparent across the Innovation Center. Staff were encouraged to participate and contribute so their voices were represented. The decentralization and support of employee participation in communication is referred to as participative or democratic communication across the literature (Dombrowski et al., 2007; Michaelis, Aladin, & Pollack, 2018). The staff in the innovation center are clearly valued. Staff as integral to a high functioning innovation process was a clear underlying assumption. They did not have to constantly say it but it was apparent that the Innovation Center cared about the well-being of staff and understood that they were essential to achieving their innovation goals. The data however pointed to a disconnect between the voices within the Innovation Center and those from the rest of the community. While innovation is identified as a key value of the entire university the current structures do not appear to enable maximum communication across the community, which the literature suggests is imperative to achieving the greatest level of success in innovation.

## **CREATIVITY AND EMPOWERMENT**

Innovation cultures embrace employee creativity and encourage employees to step out of their comfort zone and pursue their curiosities. The ability for employees to be creative, improvise, and play in the workplace are critical to the innovation process. Dobni (2008) noted that innovation cultures flourish when employees have this type of creative capacity and freedom as they engage in their work. The data showed that the Innovation Center employees embraced creativity and play and took pleasure in being curious at work. Through this type of creativity

and curiosity employees in the Innovation Center focused on identifying solutions to problems that the institution identified as future threats. An emphasis on creativity was reinforced by leadership who referenced their work as similar to working with clay. Staff thrive because they are able to adapt and make changes based on the nature of their work.

The encouragement of creativity and empowerment was evident across the organization's culture. Through conversations and observations it was clear that there was validity to the underlying assumption that this organization embraces creativity (Schein, 1984). As both a hidden assumption and a talked about value, creativity contributes greatly to the organization's success and the formation of a strong innovation culture.

## **MARKET ORIENTATION**

Innovative organizations have a strong contextual awareness and are able to take a forward thinking approach to meeting the needs of their customers. This type of market orientation helps to fuel the competitive advantage of innovation cultures (Dobni, 2008). The Innovation Center demonstrated a high level of awareness of their market and focused resources on identifying what the future challenges of students would be. Staff had robust conversations around who their competitors were and the industries they were comparing their work to. There was a clear understanding that they had to know the landscape and create opportunities to outperform those identified as peers. They then devoted substantial energy towards identifying solutions to secure the institution's place in the market. This market awareness enabled the organization to establish a robust online education program that catapulted enrollment from under 10,000 to over 100,000. Their future-proofing, market based approach is critical to their innovation process and is a key characteristic of their innovation culture.

## **VALUE ORIENTATION**

Innovation cultures are also noted as focused on adding value and enhancing the experiences of their customers (Dobni, 2008). The Innovation Center only took on projects that created a value add to the learner experience. Projects that did not relate to a solution that impacted learners were not taken on by the Innovation Center. This commitment tied into the leadership team's focus on future-proofing the institution by identifying improvements to meet the needs of the next generation of learners. This value was both spoken about by the staff and highlighted in the nature of the projects selected by the organization.

## **ORGANIZATIONAL LEARNING**

Innovation Center leadership created an environment that encouraged employees to constantly embrace learning opportunities. Access to training and development and the pursuit of learning for the sake of innovation objectives was identified as a key driver of success in innovation cultures (Dobni, 2008). Innovation Center staff were constantly encouraged to participate in professional development opportunities, attend global conferences, and network with peers and colleagues outside of the institution. They immersed themselves in spaces where they could learn about the best up and coming initiatives across education and tech. This type of learning focus was key to pushing their innovation agenda forward and enabling their innovation process.

## **SAFE SPACES**

Innovation environments have high levels of psychological safety where staff are encouraged to freely discuss ideas and explore without being concerned about negative consequences (Dombrowski et al., 2007; Michaelis, Aladin, & Pollack, 2018). The staff of the Innovation Center felt safe and secure in their environment. They knew that their leaders

supported them in exploring the best path forward with projects and that through exploration and engagement with their peers they would see positive results. Leadership were critical to creating this safe space. The Innovation Center environment was constructed to encourage this type of interaction and leadership made their presence known but presented as supportive figures there to help not hinder. The data identified that failure and discussion around mistakes while not a favorite activity across the staff was embraced as important to advancing their mission and maximizing learning.

## **BOUNDARY SPANNING**

Boundary spanning across the Innovation Center was abundant. Knowledge sharing and communication amongst staff was apparent and highly encouraged by leadership. That said, the literature highlighted that the most successful innovation cultures experience this type of knowledge sharing and communication across boundaries within the organization (Dombrowski et al., 2007; Michaelis et al., 2017). The data showed that there was a desire amongst staff to increase the level of participation and interaction with those outside of the Innovation Center but internal to the university. The Innovation Center is still a relatively new entity having been established in 2015 and there is a need to create opportunities for knowledge sharing beyond those on the staff. Innovation was identified as a value of the entire institution but they are limiting their potential by not creating opportunities to bring more voices into the conversation. It was spoken that they wanted to hear innovation ideas from the community but it did not appear to be something they actively focused on. Enhancing opportunities and exposure of staff to new perspectives across campus would enhance the innovation agenda and lead to a more robust innovation process.

## **MISSION/VISION FOCUS**

Successful innovation organizations pursue work that is aligned with a common goal. This goal comes from leadership and is embodied in all work that the organization pursues (Dombrowski et al., 2007; Michaelis, Aladin, & Pollack, 2018). The Innovation Center showed incredible purpose in their commitment to pursuing transformational changes in higher education to future-proof the university and meet the needs of tomorrow's students. Leadership were integral in establishing this approach. Staff took on the charge and the commitment was also reflected in the design of the facility, which was decorated with elaborate chalk drawings calling out both the university's mission and the pursuit of meeting the needs of 2030's students.

## **FLEXIBILITY**

Innovation cultures were also noted as creating opportunities for staff to gain exposure to different business contexts and processes and have the capacity for job design (Dombrowski et al., 2007; Michaelis, Aladin, & Pollack, 2017). The Innovation Center staff were able to get involved in different projects across the organization's workflow and interact with different elements of innovation work.

The Innovation Center's culture is integral to their commitment to innovation and a strong innovation process. The climate created by leadership has enabled the university to expand exponentially and secure their place in the market. Innovation creates security and in the case of the Innovation Center they have built a culture that enables the organization to take on innovation work in the pursuit of future-proofing the institution and creating a learning experience ready to handle the needs of the next generation of learners. Their approach has driven value and created financial opportunities beyond what the traditional campus experience

enabled. There are opportunities for the organization however to further enhance their innovation culture and in doing so improve their innovation process.

## Recommendations

### *Guiding Question 1*

**Recommendation 1: The Innovation Center should seek out opportunities for staff to engage members of the greater university community to enable increased knowledge sharing.**

Finding three determined that the Innovation Center staff are valued employees who are encouraged to be creative and experiment in their pursuit of innovation. That said, the literature noted that it is critical that this type of creativity and experimentation extend beyond the confines of organizational boundaries and that organizations who embrace knowledge sharing across an organization are likely to achieve greater innovation success (Dombrowski et al., 2007; Michaelis, Aladin, & Pollack, 2017). To enhance the institution's innovation culture and see a more robust innovation process beyond the Innovation Center the organization should embrace the existing human resources and identify opportunities for boundary spanning. In embracing greater boundary spanning the Innovation Center will have greater access to perspectives across campus that will enhance their understanding of the challenges that they could be focusing on.

This recommendation is also supported by finding two which identified that the organization's innovation culture contributed to a thriving innovation process because of a strong focus on addressing future challenges. To have a full understanding of the needs of the market the Innovation Center must be in touch with what is happening on the ground across the institution. A strength of the organization is that they are collaborative and eager to work with

one another by opening up opportunities to engage with other members of the community they would only enhance their innovation potential.

Dombrowski et al. (2007) noted that managers have to be sensitive in how they create opportunities for boundary spanning. Innovation Center leadership should start by establishing more defined opportunities for boundary spanning. One way that leadership could enable these opportunities is to survey staff on their secondary interests and create opportunities for staff to join committees or subgroups on campus. These interactions would create opportunities for natural knowledge sharing and would increase exposure of the Innovation Center's work. More informally staff could be encouraged to tap into their communities of practice to again enhance the knowledge sharing capacity of the organization. Swan, Scarborough, and Robertson (2002) found that communities of practice have the potential to positively impact innovation and that they promote learning across the organization. They stressed the value that can be derived from sharing knowledge across these informal boundaries and that they can enable greater adoption of innovation. The Innovation Center has shown that across their staff they have a strong innovation process and a thriving innovation culture and this recommendation creates an opportunity to further solidify their capacity for innovation across the institution.

#### *Guiding Question 2*

#### **Recommendation 2: The Innovation Center should emphasize a greater balance in where projects come from, reducing the current top-down innovation approach.**

Finding four determined that leaders control the innovation agenda and are largely responsible for determining which projects staff focus on. The most successful innovation cultures are characterized as having low levels of hierarchy and bureaucracy and for enabling staff to use their creative orientation to enact innovation (Dobni, 2008; Dombrowski et al., 2007;

Michaelis, Aladin, & Pollack, 2018). In focusing primarily on innovation projects identified as important to leadership the organization is missing out on potentially embracing more important and impactful innovation that may be identified as a need from elsewhere. If the underlying assumption that the entire organization values and embraces innovation is to be true then there is a need for greater inclusion in the innovation ideation process.

The Innovation Center should create a system for tracking the number of problems that are driven by leadership compared to those brought about by staff or community members. Embracing greater democratic communication will enable increased sharing of ideas that could lead to value oriented initiatives and a more inclusive innovation process. Dombrowski et al. (2007) noted that it can often be a challenge for organizations to embrace increased democratization. There can be a fear that ideas will clash with those identified as important to senior leadership but those organizations who can embrace this conflict and see it as an opportunity to advance their place in the market are more likely to benefit from the positive results attributed with innovation.

**Recommendation 3: The Innovation Center should identify and nurture idea sponsors to enhance community participation in innovation.**

Finding three determined that community participation in idea generation across the university is limited. To address this finding and support recommendation two, the organization should identify and nurture idea sponsors to encourage greater community participation in idea generation and innovation efforts. Dombrowski et al. (2007) defined idea sponsors as individuals across an organization who serve as sounding boards who are able to share expertise and advise those with innovation ideas. Idea sponsors across an organization create greater opportunities for participation as they have an understanding of what it takes to be successful in innovation and

also have the relational and organizational skills required to nurture someone who has an idea and then advocate for the adoption of that idea. In embracing idea sponsors the Innovation Center has an opportunity to improve community participation in the innovation process.

The Innovation Center appears to have an ideation problem. As noted in finding four, leadership are driving the innovation agenda and projects are largely selected based on who presented the idea. In order to expand the funnel and increase their innovative capacity the Innovation Center should identify idea sponsors across the other departments at SNHU. These idea sponsors should be trained and provided with the tools necessary to support the members of their teams and communities of practice through the idea generation process. Idea sponsors would be allies to the Innovation Center across campus. As a relatively new entity, having only been on campus for five years the Innovation Center would benefit from increased exposure and idea sponsors and innovation champions across departments would enable greater knowledge sharing and creative endeavors across the university.

## **Limitations**

Like any study this project has a number of limitations. All members of the Innovation Center staff were invited to participate in the study. However, there was not 100% participation in any method used over the course of the case study. All staff were sent the Innovation Quotient Questionnaire but the sample ultimately achieved a 36% response rate. The validity of the results would be stronger with a larger sample size across the staff. That said, the sample did represent a cross-section of all levels of employees within the Innovation Center. Additionally it was not possible to interview every member of the staff. The interviews were done by a convenience sample so those who participated happened to have availability during the dates on-site. This

could have resulted in an exclusion of voices who may have had contradictory opinions or experiences.

COVID-19 presented a number of challenges to the data collection process. The timeline of data collection was fortunate in that on-site interviews and observations occurred in March 2020 just before stay-at-home orders were announced. Had it not been for the stay-at-home orders the observations would have extended to a second week. Similarly, additional interviews were scheduled to take place in person that were unable to occur as a result of the shifting of priorities.

This work is also limited by the specific nature of the organization. The findings are tied to the specific context and do not have widespread applicability. Limitations also exist in the decision to focus solely on the Innovation Center rather than the entire institution. There is valuable data to be collected on innovation at the institutional level that has the potential to impact the findings of the data found within the Innovation Center. The institution has embraced innovation as a core tenet and identifying whether or not the same strengths exist across the university would add meaningful insight.

## Conclusion

The purpose of this quality improvement study was to investigate the environment within the Innovation Center at SNHU and the elements of their culture driving their innovation process. Through this investigation the intention was to understand the capabilities present and the role of leaders in creating a unique culture that has led to a strong focus on innovation. Findings showed that the environment benefits from strong leadership who emphasize the importance of the mission and cultivate a safe space where employees are valued and encouraged to be creative, experiment, and embrace ongoing learning. They also showed the innovation

agenda is largely driven by senior leadership and participation in innovation is not as strong across the institution.

The Innovation Center as a physical space creates a playful environment that lends itself to experimentation. While the environment plays a role in fostering a culture of innovation the distinguishing feature of the organization are its people, in particular the leaders. The role of leadership in creating the culture within the Innovation Center cannot be understated. These individuals are credited with providing strong vision and support and the findings overwhelmingly identified these individuals as experts in innovation driving the work. Strong leadership enables the Innovation Center to have access to key resources that support their initiatives.

This investigation presented specific elements of the organization's culture that contributed to the Innovation Center's innovation process. In doing so, this investigation put names to the elements and identified recommendations to support improvement across the Innovation Center and the greater SNHU community. Innovation Center leadership can leverage this information to identify measures to incorporate into their innovation process and identify opportunities for improvement across their innovation efforts.

SNHU has charged the Innovation Center with future-proofing the university. As the institution and the Innovation Center continue to grow, embracing the recommendations for improvement creates the potential to further ensure that they sustain their innovation culture and see continued success across their initiatives.

## References

- Akman, G. & Yilmaz, C. (2008). Innovative capability, innovation strategy and market orientation: an empirical analysis in Turkish software industry. *International Journal of Innovation Management*, 12, 66-111.
- Babbie, E. (2018). *Basics of social research*. Cengage Learning.
- Baregheh, A., Rowley, J., & Sambrook, S. (2009). Towards a multidisciplinary definition of innovation. *Management Decision*, 47, 1323–1339.
- Barney, J. (1986). Organizational culture: Can it be a source of sustained competitive advantage? *The Academy of Management Review*, 11(3), 656–665.  
<https://doi.org/10.5465/amr.1986.4306261>
- Bartel, C., & Garud, R. (2009). The role of narratives in sustaining organizational innovation. *Organization Science* 20(1), 107–117. <https://doi.org/10.1287/orsc.1080.0372>
- Blumenstyk, G. (2018, November 16). *Meet the new mega-university*. The Chronicle of Higher Education. <https://www.chronicle.com/article/meet-the-new-mega-university/>
- Brettel, M., & Cleven, N. (2011). Innovation culture, collaboration with external partners and npd performance. *Creativity and Innovation Management*, 20, 253–272.
- Brown, J., & Duguid, P. (1991). Organizational learning and communities-of-practice: Toward a unified view of working, learning, and innovation. *Organization Science*, 2(1), 40–57.  
<https://doi.org/10.1287/orsc.2.1.40>
- Büschgens, T., Bausch, A., & Balkin, D. (2013). Organizational culture and innovation: A meta-analytic review. *The Journal of Product Innovation Management*, 30(4), 763–781.  
<https://doi.org/10.1111/jpim.12021>

Christensen, C. M., & Overdorf, M. (2020, March 2). *Meeting the challenge of disruptive change*. Harvard Business Review. <https://hbr.org/2000/03/meeting-the-challenge-of-disruptive-change>.

Crossan, M., & Apaydin, M. (2010). A multi-dimensional framework of organizational innovation: a systematic review of the literature. *Journal of Management Studies*, 47(6), 1154-1191.

D'Este, P., Iammarino, S., Savona, M., & von Tunzelmann, N. (2012). What hampers innovation? Revealed barriers versus deterring barriers. *Research Policy*, 41(2), 482–488. <https://doi.org/10.1016/j.respol.2011.09.008>

Dobni, C. (2008). Measuring innovation culture in organizations: The development of a generalized innovation culture construct using exploratory factor analysis. *European Journal of Innovation Management*, 11(4), 539–559. <https://doi.org/10.1108/14601060810911156>

Dobni, C. (2008). The DNA of innovation. *Journal of Business Strategy*, 29(2), 43–50. <https://doi.org/10.1108/02756660810858143>

Dobni, C. , & Klassen, M. (2015). Advancing an innovation orientation in organizations: Insights from North American business leaders. *Journal of Innovation Management*, 3(1), 104-121.

Dobni, C., Klassen, M., & Nelson, W. (2015). Innovation strategy in the US: top executives offer their views. *The Journal of Business Strategy*, 36(1), 3–13. <https://doi.org/10.1108/JBS-12-2013-0115>

- Dombrowski, C., Kim, J., Desouza, K., Braganza, A., Papagari, S., Baloh, P., & Jha, S. (2007). Elements of innovative cultures. *Knowledge and Process Management*, 14(3), 190–202. <https://doi.org/10.1002/kpm.279>
- Dyer, J. H., Gregersen, H. B., & Christensen, C. M. (2009) *The innovator's DNA*. Harvard Business Review. <https://hbr.org/2009/12/the-innovators-dna>.
- Euchner, J. (2017). Creating a culture of innovation. *Research-Technology Management*, 60(6), 10–11. <https://doi.org/10.1080/08956308.2017.1373043>
- Govindarajan, V., & Trimble, C. (2005). Organizational DNA for strategic innovation. *California Management Review*, 47(3), 47–76. <https://doi.org/10.2307/41166306>
- Hamel, G. (2006). The why, what and how of innovation management. *Harvard Business Review*, 84(2), 72-84.
- Hurley, R., & Hult, G. (1998). Innovation, market orientation, and organizational learning: An integration and empirical examination. *Journal of Marketing*, 62(3), 42–. <https://doi.org/10.2307/1251742>
- Khazanchi, S., Lewis, M., & Boyer, K. (2007). Innovation-supportive culture: The impact of organizational values on process innovation. *Journal of Operations Management*, 25(4), 871–884. <https://doi.org/10.1016/j.jom.2006.08.003>
- Lakiza, V. (2018). Relationships between performance measurement systems, intrapreneurial culture and innovation capabilities: A longitudinal field case study. Retrieved from <http://search.proquest.com/docview/2081832642/>
- Lakiza, V., & Deschamps, I. (2018). How to develop innovation KPIs in an execution-oriented company. *Technology Innovation Management Review*, 8, 14-30.

Lakiza, V., & Deschamps, I. (2018, March 25-28). Case study: Innovation KPIs development challenges within an execution-oriented culture. Paper presented at The ISPIM Innovation Forum, Boston, MA.

Martín-de Castro, G., Delgado-Verde, M., Navas-López, J., & Cruz-González, J. (2013). The moderating role of innovation culture in the relationship between knowledge assets and product innovation. *Technological Forecasting & Social Change*, 80(2), 351–363.  
<https://doi.org/10.1016/j.techfore.2012.08.012>

McLean, L. (2005). Organizational culture's influence on creativity and innovation: A review of the literature and implications for human resource development. *Advances in Developing Human Resources*, 7(2), 226–246. <https://doi.org/10.1177/1523422305274528>

Merriam, S. B., & Grenier, R. S. (2019). *Qualitative research in practice: Examples for discussion and analysis*. Jossey-Bass.

Michaelis, T., Aladin, R., & Pollack, J. (2018). Innovation culture and the performance of new product launches: A global study. *Journal of Business Venturing Insights*, 9, 116–127.  
<https://doi.org/10.1016/j.jbvi.2018.04.001>

Naqshbandi, M., Kaur, S., & Ma, P. (2014). What organizational culture types enable and retard open innovation? *Quality & Quantity*, 49(5), 2123–2144. <https://doi.org/10.1007/s11135-014-0097-5>

Quintane, E., Mitch Casselman, R., Sebastian Reiche, B., & Nylund, P. (2011). Innovation as a knowledge-based outcome. *Journal of Knowledge Management*, 15, 928-947.

Rao, J., & Weintraub, J. (2013). How innovative is your company's culture? *MIT Sloan Management Review*, 54, 29-37.

- Sadegh Sharifirad, M., & Ataei, V. (2012). Organizational culture and innovation culture: exploring the relationships between constructs. *Leadership & Organization Development Journal*, 33(5), 494–517. <https://doi.org/10.1108/01437731211241274>
- Sarros, J., Cooper, B., & Santora, J. (2008). Building a climate for innovation through transformational leadership and organizational culture. *Journal of Leadership & Organizational Studies*, 15, 145-158.
- Schein, E.H. (1984), Coming to a new awareness of organizational culture, *Sloan Management Review*, 25(Winter), 3-16.
- Schoemaker, P., Heaton, S., & Teece, D. (2018). Innovation, dynamic capabilities, and leadership. *California Management Review*, 61(1), 15–42.  
<https://doi.org/10.1177/0008125618790246>
- SNHU Innovation Center. Organization original documents.
- Steele, J., & Murray, M. (2004). Creating, supporting and sustaining a culture of innovation. *Engineering, Construction and Architectural Management*, 11(5), 316–322.  
<https://doi.org/10.1108/09699980410558502>
- Swan, J., Scarbrough, H., & Robertson, M. (2002). The construction of 'communities of practice' in the management of innovation. *Management Learning*, 33(4), 477–496.  
<https://doi.org/10.1177/1350507602334005>
- Tuzovic, S., Wirtz, J., & Heracleous, L. (2018). How do innovators stay innovative? A longitudinal case analysis. *Journal of Services Marketing*, 32(1), 34–45.  
<https://doi.org/10.1108/JSM-02-2017-0052>

- Wang, C., & Ahmed, P. (2004). The development and validation of the organisational innovativeness construct using confirmatory factor analysis. *European Journal of Innovation Management*, 7(4), 303-313.
- Wenger, E. (1998). Communities of practice: Learning as a social system. *Systems thinker*, 9(5), 2-3.
- Wilson, V. (2016). Research methods: mixed methods research. *Evidence Based Library and Information Practice*, 11(1(S)), 56–59. <https://doi.org/10.18438/B8QS53>

## Appendices

### APPENDIX A: SEMI STRUCTURED INTERVIEW PROTOCOL

#### Semi-structured Interview Questions

1. How do you define innovation?
2. What is it about the culture of the Innovation Center that supports the innovation process?
3. What is the role of leadership in fostering an environment that supports innovation?
4. Do you think it is possible to measure the innovation process?
5. Did you have any involvement in prior attempts at KPI development at the Innovation Center? If so, can you tell me about that experience?
6. Do you believe there is a need for KPIs at the Innovation Center? What do you think is motivating this initiative?
7. What types of KPIs make sense for an innovative context such as the Innovation Center?

## APPENDIX B: INNOVATION QUOTIENT QUESTIONNAIRE RESULTS

<b>Block</b>	<b>Factor</b>	<b>Element</b>	<b>Element Score</b>	<b>Factor Average</b>	<b>Building Block Average</b>	
Values	Entrepreneurial	Hunger	4.00	3.98	3.89	
		Ambiguity Tolerance	4.13			
		Action oriented	3.8			
	Creativity	Imagination	3.6	3.89		
		Autonomy	3.93			
		Playful	4.13			
	Learning	Curiosity	4.07	3.80		
		Experiment	3.67			
		Failure OK	3.67			
Resources	People	Champions	4.67	4.36	3.68	
		Experts	4.2			
		Talent	4.2			
	Systems	Selection	3.53	3.22		
		Communication	2.87			
		Ecosystem	3.27			
	Projects	Time	3.33	3.47		
		Money	3.87			
		Space	3.2			
Behaviors	Energize	Inspire	4.27	3.93	3.93	
		Challenge	3.6			
		Model	3.93			
	Engage	Coach	3.6	3.65		
		Initiative	3.27			
		Support	4.07			
	Enable	Influence	4.2	4.22		
		Adapt	4.33			
		Grit	4.13			

Block	Factor	Element	Element Score	Factor Average	Building Block Average	
Processes	Ideate	Generate	2.73	2.84	3.00	
		Filter	2.93			
		Prioritize	2.87			
	Shape	Prototype	3.2	2.89		
		Iterate	2.8			
		Fail smart	2.67			
	Capture	Flexibility	3.87	3.27		
		Launch	2.6			
		Scale	3.33			
Climate	Collaboration	Community	3.87	3.98	3.73	
		Diversity	3.67			
		Team work	4.4			
	Safety	Trust	3.8	3.71		
		Integrity	3.67			
		Openness	3.67			
	Simplicity	No Bureaucracy	3.07	3.49		
		Accountability	4.13			
		Decision making	3.27			
Success	External	Customers	4.13	3.93	3.95	
		Competitors	3.93			
		Financial	3.73			
	Enterprise	Purpose	4.53	4.24		
		Discipline	4.13			
		Capabilities	4.07			
	Individual	Satisfaction	3.73	3.67		
		Growth	3.8			
		Recognition	3.47			