Fall 2013

Innovation and Self-Leadership: The Effects of Self-Leadership Knowledge on the Innovation Landscape

Lynn Eliason
Marquette University

INNOVATION AND SELF-LEADERSHIP: THE EFFECTS OF SELF-LEADERSHIP KNOWLEDGE ON THE INNOVATION LANDSCAPE

By

Lynn Eliason, B.S.

A Professional Project submitted to the Faculty of the Graduate School,
Marquette University,
In Partial fulfillment of the Requirements for
The Degree of Master in Leadership Studies

Milwaukee, Wisconsin

November 2013

ABSTRACT
INNOVATION AND SELF-LEADERSHIP: THE EFFECTS
OF SELF-LEADERSHIP KNOWLEDGE ON THE
INNOVATION LANDSCAPE

Lynn Eliason, B.S.

Marquette University, 2013

The open innovation landscape of today allows any individual the ability to work, use their creative ideas, and receive external ideas for innovation. Innovators are no longer the chosen few behind closed doors who are at the right level in an organization, at the right place, and at the right time. The open innovation environment requires individuals who are self-leaders with the skills and abilities to lead innovation projects. This study explores how the organizational position of individuals can affect how they feel about innovation and their perception of their innovative abilities. This information can help to guide organizations on where to focus self-leadership awareness and training and to match individuals with high innovator natural tendencies and perceptions with those in an organization that need to build their self-leadership skills for innovation.

Keywords: self-leadership, open innovation landscape, entrepreneurship

ACKNOWLEDGEMENTS

Lynn Eliason, B.A.

I wish to thank various people for their contributions to this project: Dr. Caulfield for her patient guidance, encouragement, and willingness to help me meet my tight schedule; Felisa Paris for her guidance on finding the right advising team and outlining my schedule; Amanda Ahrndt for facilitating a quick turn-around review; and Bonnie LeSourd for her excellent guidance under extremely short timelines.

Finally, I wish to thank my family for their patience, support, and encouragement throughout this project.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

Innovation and Self-Leadership: The Effects of Self-Leadership Knowledge on the Innovation Landscape

Consumers in the marketplace of today are well informed and demanding. They know what they want and understand the concept of value in their purchases. Consumers expect to get the most for the price point in which they are buying and continue to demand product innovation. Consumers not only demand product innovation, they demand it quickly, with high quality standards, and they want a voice in the product features. People are also becoming increasingly conscientious about the environment, the costs of everyday items in their households, and the current economic situation. Innovation must occur to meet the demands and concerns of the global population, but how will organizations continue to ensure they are cultivating a culture that is poised to meet future demands?

Due to the high demand for creative and useful new products, innovation improvements focus on the processes that help get the innovative ideas to fruition quickly and with no defects. There is often less attention placed on studying people within the innovation process and the leadership types needed to foster an open innovative environment. Yet, many business and academic leaders have readily said that self-leadership and the right leaders are two of the most important cornerstones of innovation.

Purpose

The purpose of this study is to highlight the positive effect self-leadership could have on innovation in organizations and the open innovation landscape. Cultivating a culture that thrives on openness and the ability to allow all individuals in an organization to feel and be innovative is important for growth. Knowing where to concentrate self-leadership knowledge and education within organizations can be a key driver of innovation success especially in light of the open innovation landscape of today.

Research Questions

Do organizations that cultivate self-leadership knowledge and skills have employees that are more ready for an open innovation environment? Is how innovative an individual feels affected by the person's role within an organization or profession? What is the most effective area to concentrate self-leadership knowledge transfer and training to increase individual levels of self-leadership for the open innovation environment?

This pilot study will gather data on perceptions and feelings individuals have toward their role in innovation and self-leadership. Outlining patterns in innovation perceptions and self-leadership knowledge can highlight where self-leadership awareness and training will provide the most value to an organization. The value will be in having an organization with individuals who can self-manage the open innovation environment.

The literature review addresses the current challenges in the open innovation landscape, designing and managing the innovation environment, and the innovation ecosystem. This section also examines various aspects of managing in the innovation environment including managing ideas into successful innovations, managing part-whole relationships, and managing institutional leadership. In addition, the literature review discusses self-leadership/leader concepts and innovation, promoting self-leadership for organizational innovation, and self-leadership and entrepreneurial success.

Literature Review

Current Challenges in the Open Innovation Landscape

A Price Waterhouse Cooper survey of 399 global executives found innovation to be their top strategic challenge. Innovation was cited as a top strategic challenge over globalization,

industry convergence, and e-business in achieving their business growth. Executives believe that their ability to innovate has the most potential for business growth, but they do not know exactly how to improve performance in this area (Drucker, 1985). While this information is historical, the same problems still exist today. A 2010 study by the Boston Consulting Group (BCG) found that 72% of senior executives cited innovation-led growth as one of their top three strategic priorities (Adner, 2012). Many companies implement think tanks and departments with freedom to explore innovations of any sort to further the company, which include open innovation concepts; but the reality of the situation is that many companies still rely on the traditional silos of expertise, such as product development and marketing/sales, to understand the needs of their customers. Often, there is very little direct interface of internal teams with customers.

The concept of open innovation is on the forefront of best practices in innovation, which highlights the need to look outside of traditional information points to open up new streams of information. The Aberdeen Group (2008) defined open innovation as not only reaching outside the traditional research and development organization, but also reaching outside the four walls of the organization to tap into ideas of others to drive innovation in product development. The concept of open innovation has become a big topic for many companies, big and small, some successfully using the concept, and some wanting to use the concept successfully. The Internet has allowed companies to achieve open innovation by posing questions, managing contests, understanding trends, managing living labs, crowd sourcing, and creating open forums for discussion. The use of open innovation requires the involvement of outside streams of information and input, which drives toward user involvement. This topic is gathering such interest that when Henry Chesbrough, an expert in the open innovation field, ran a search on open innovation, there were 483 million links versus just 200 page links in 2003 (Pop, 2013).

There are two distinctions Chesbrough makes in regards to open innovation: outside-in and inside-out open innovation. The outside-in open innovation involves a company opening its innovative processes to the outside for input, feedback, and contributions. The inside-out open innovation involves the company sending its unused and underutilized ideas out to others to employ. The inside-out open innovation is not widely used, but the outside-in open innovation concept is facing a tipping point where companies are looking for real business results (Pop, 2013). As the business landscape moves into the future of outside-in open innovation, there are challenges and barriers to success in this landscape.

Designing and Managing the Innovation Environment

The creation of a true open innovative environment involves the right management and leadership styles to support and create leaders and tools for the environment. There must be people collaborating side-by-side and people moving from one organization to another to create boundary spanning roles that connect knowledge from different sources (Pop, 2013). Lindegaard and Chesbrough (2013) stated,

> The internally oriented, centralized approach to R&D is becoming obsolete in many industries. Useful knowledge is widely disseminated, and ideas must be used with alacrity. If not, they will be lost. Such factors create a new logic of open innovation, in which the role of R&D extends far beyond the boundaries of the enterprise. ("The Plus," para. 2)

According to Lindegaard and Chesbrough (2013), companies will need to let go of control and allow employees and collaborators to post freely without work flow or approvals. This change requires employees who are self-leaders to self-censure themselves, because they are representing themselves and their company. Lindegaard and Chesbrough (2013) stated,

> People tend to self-censure when they are representing themselves professionally – regardless if they are a customer, partner, or employee – and this has made the moderation of the site much less intensive than first expected. And, when someone raises a sensitive issue, you learn as a company that it's not the end of the world, and you deal with the issue. In the end, people tend to be happy that they were heard and that their problem was solved. ("Lessons from the Front," para. 6)

Anna Ystrom explains the major examples of leadership and managerial practices that will be required in the open innovation environment. The leadership and managerial practices will be identity building, nurturing the spirit of collaboration, constantly working on the relationships with various organizations, understanding and making use of political maneuvers, and creating meaning in the environment in which you are working (Örmgård, 2013). All of these practices will require a self-leader who is aware of self-efficacy and knows how to use it to build relationships and further collaboration. Employees, as self-leaders in larger companies, will need to assume the role of business owner with an entrepreneurial spirit.

Understanding the Innovation Ecosystem

An open innovation environmental challenge is the ability to understand the entire ecosystem around the innovation. Many innovations that should succeed often fail, because while the customer was a main consideration, the product or service did not consider the entire ecosystem. The innovation ecosystem must include the partners and the innovation required of their partners in order for the product or service to succeed (Adner, 2012). According to Adner (2012), successful innovation remains the exception rather than the rule with only one out of four innovations reaching the stage of commercial launch. Within that group, only 45% meet their profit goals. Innovators must take a wide-lens approach to the innovation ecosystem. This wide-

lens requires self-leaders who have the self-awareness to know they will not succeed without including the entire ecosystem and without building the relationships within that ecosystem to succeed. Adner (2012) states,

> Greatness on your part is not enough. You are no longer an autonomous innovator. You are now an actor within a broader innovation ecosystem. Success in a connected world requires that you manage your dependence. However, before you can manage your independence, you need to see it and understand it. Even the greatest companies can be blindsided by this shift. (p. 10)

Historical reviews of challenges in innovation reveal four issues that still exist in the new open innovation environment. These issues are as relevant today as they were in the 1980s to understand the role of innovation and entrepreneurship for social and economic development (Van de Ven, 1986). The four challenges discussed by Van de Ven (1986) include the human problem of managing attention, managing ideas into successful innovations, managing part-whole relationships, and managing institutional leadership.

Managing Attention

Employees are often led to focus on current work practices rather than pay attention to new ideas. This focus creates the challenge of triggering employee thresholds to pay attention and create new ideas. Many current organizational structures work to maintain the attention and focus of the employees on routine practices and procedures, not on innovation. This approach is particularly true in older, large, successful organizations as their systems and structures discourage innovation while encouraging small improvements or tinkering. These existing organizational practices often make employees inattentive to shifts in the organization's environment and the need for innovation (Van de Ven, 1986).

Managing Ideas into Successful Innovations

Like the modern concept of innovation ecosystems, Van de Ven (1986) discussed this concept as the energy and coalitions of interest groups needed to develop an innovation. As the appreciation of an idea starts, a disruptive event initiates the currency of an idea or the legitimacy. The central focus on ideas is the rally point around collective action and the vehicle that connects stakeholders to come together and contribute their unique frames of reference to the innovation process (Van de Ven, 1986). Idea generation's challenge is premature abandonment due to short-term problem orientation in individuals and organizations. Organizations and individuals alike often put up a façade demonstrating progress, and the appearance of progress makes the organization move on to the next problem before the initial problem was really solved or innovation really happened (Van de Ven, 1986).

Managing Part-Whole Relationships

The proliferation of ideas, people, and transactions over time is a little understood characteristic of the innovation process. It comes with complexity, interdependence, and the basic structural problem of managing part-whole relationships (Van de Ven, 1986). A single innovative idea, once expressed to others, proliferates into multiple ideas, because people have diverse frames of reference. The diverse frames of reference are amplified by proliferation of transactions or relationships among people and organizational units as the innovation progresses (Van de Ven, 1986). This proliferation of transactions is part of the ecosystem that needs to be managed as part of an innovation. As Adner (2012) states, organizations need a wide-lens to ensure they manage all the relationships for an innovation.

Managing Institutional Leadership

Innovation in an organization requires the creation of an institutional environment that fosters innovation and links the innovation to overall mission and strategy. The creation of the institutional context lends itself to the last challenge Van de Ven (1986) discusses, which is having the right leadership in place to create an infrastructure that is conducive to innovation and organizational learning. All of the above challenges and topics lend themselves to empowering self-leadership to develop employees and individuals that can understand innovation challenges and work within the organization to manage these challenges.

Self-Leadership/Leader Concepts and Innovation

Past research on contingency models of leadership and psychological empowerment suggests that follower self-leadership should be encouraged when the leader wants followers who are committed, independent, creative, and psychologically empowered (Houghton & Yoho, 2005). Open innovation of today requires individuals who can build an identity, collaborate, build relationships, understand political maneuvers, and create meaning in their work environment (Örmgård, 2013). These requirements for open innovation success directly relate to empowered self-leadership. Open innovation is moving toward decentralized organizations and highlights the need for more participatory management concepts such as employee empowerment and self-leadership.

The concept of self-leadership in today's open environment has impressive potential for application in organizations characterized by empowerment and decentralization (Houghton & Yoho, 2005). Self-leadership is defined as a systematic set of strategies through which individuals can influence themselves toward higher levels of performance and effectiveness (Manz & Neck, 2004). Houghton and Yoho (2005) explain three primary categories of self-

leadership: behavior-focused strategies, natural reward strategies, and constructive thought pattern strategies. Behavior-focused strategies are designed to increase self-awareness leading to successful management of necessary tasks. These behavior strategies include self-observation, self-goal setting, self-reward, and self-correction (Houghton & Yoho, 2005). Self-observation and self-goal setting can directly lend success to the requirements of individuals in an open innovation environment to build an identity and to create meaning in their work environment.

Natural reward strategies concentrate on the inherently enjoyable aspects of work or tasks so a person feels rewarded by the work or motivated by the task. The two primary approaches in natural reward strategies involve building pleasant features into an activity that is naturally rewarding and focusing on the rewarding aspects, so perceptions are shaped toward the positive (Manz & Neck, 2004). This reward structure can lead to increased feelings of competence and self-determination, which can lead to enhanced activity performance (Houghton & Yoho, 2005). This increased activity performance could be in the form of innovation, and the increased feelings of competence will keep individuals from serial premature abandonment of ideas.

Constructive thought pattern strategies involve three primary tools for shaping self-leadership thinking patterns: self-analysis and improvement of belief systems, mental imagery of successful performance outcomes, and positive self-talk (Manz & Neck, 2004). Increased mental imagery of oneself can help lead to the natural reward structure of increased competence and self-determination, which makes a person more confident to collaborate, build and manage relationships, and understand and react to political maneuvers.

Manz (1992) has argued that self-leadership skills lie at the very heart of the empowerment process, and these self-leadership skills are essential for employees to perform successfully in autonomous situations. The autonomous nature of the open innovation ecosystem

and all the individuals in the ecosystem leads itself to ensuring employees understand and employ self-leadership. The contingency model Houghton and Yoho (2005) present in their research (Figure 1) highlights that empowering leadership with self-leadership strategies will lead to predictable follower outcomes, which an innovative environment seeks. The follower outcome is a highly committed employee that can work independently with a high degree of creativity and innovation with high psychological empowerment for self-leadership.

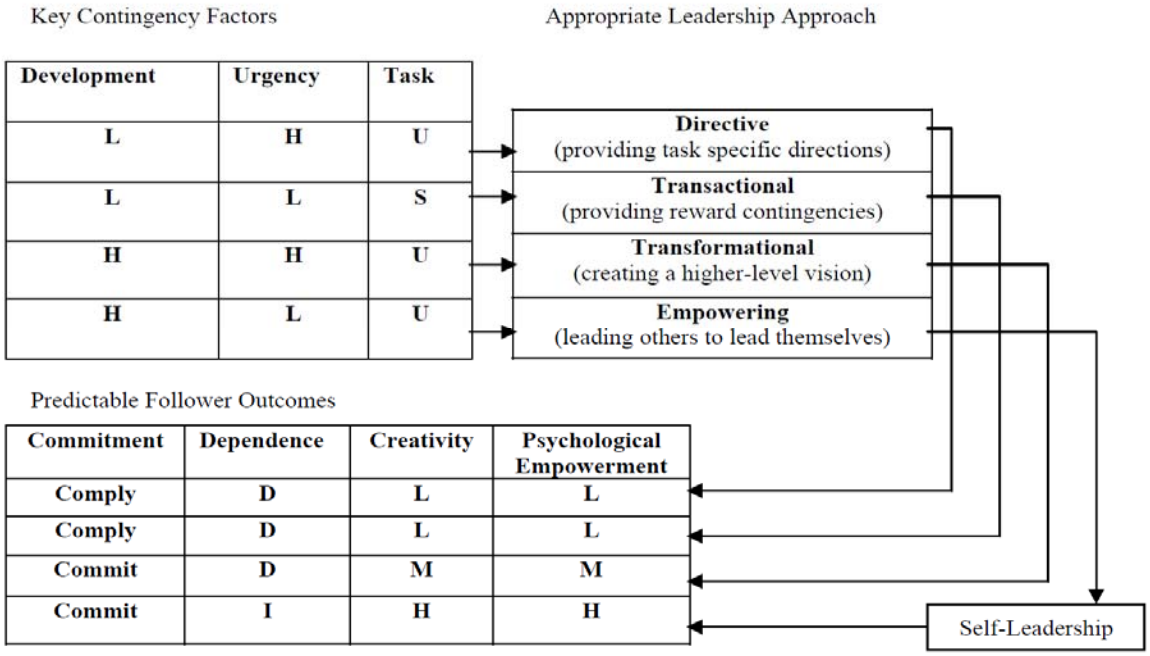

Figure 1: A contingency model of leadership and psychological empowerment.
Note: L = Low, H = High, U = Unstructured, S = Structured, D = Dependence, I = Independence, M = Mixed or Moderate. Adapted from "Toward a contingency model of leadership and psychological empower: When should self-leadership be encouraged?" by J. D. Houghton and S. K. Yoho, 2005, *Journal of Leadership and Organizational Studies, 11*(4), p. 71.

Charlene Li (2010) defines open leadership as "having the confidence and humility to give up the need to be in control while inspiring commitment from people to accomplish goals" (p. 14). Li comments that the new landscape of today, with the new technologies available and employed, should allow less control with the ability to continue to be in command. Inexpensive

communication tools give communities, companies, and individuals the ability to be intimately familiar with what is happening in their particular environments without traditional strong man leadership. The open leadership environment requires leaders to embrace ideas from outside their control and requires the building of new types of relationships. Leaders must shift focus from trying to retain what little control they have in this new environment to choosing where and when to be open to embrace newly empowered players (Li, 2010). The problem of leaders embracing the idea of relinquishing control is one of confidence and allowing others to take power and perform as expected. A leader in the open innovation landscape must be able to have faith that the people who will take the power and control will act responsibly and be successful. Within an open innovation environment, how leaders lead is a key aspect of enabling the cultivation of self-leaders that will work to understand and accomplish goals.

The type of leader needed in the new open innovation environment is the SuperLeader defined by Charles Manz and Henry Sims, Jr. (1991). Manz and Sims (1991) indicate, “The most appropriate leader is one who can lead others to lead themselves” (p. 18), which is called SuperLeadership. The SuperLeader views leadership as developing influences from within a person rather than influences from outside factors. With this in mind, a SuperLeader maximizes others’ contributions to understand and accomplish goals needed in the new open innovation environment. A SuperLeader helps to facilitate self-leadership within individuals by letting them recognize their right to guide their own destiny rather than bending to the will of another (Manz & Sims, 1991). World competition, the workforce’s desire for greater meaning in their work, and open innovation contribute to a greater need for self-leadership in individuals and leaders who are adept at developing human resources or followers who become self-leaders.

Views on successful leadership have changed and developed over time, which provides the contrast in leadership views still in place in many organizations today. There are four main types of leaders throughout history that still exist today – strong man, transactor, visionary hero, and the SuperLeader (Manz & Sims, 1991). The strong man is the earliest view of leadership, which emphasizes an autocratic, male-dominated position that uses force and command to get subordinates to comply. This leader often sees himself as being the only one that knows what needs to be done and delivers firm commands or threats to accomplish it. The strong man leader takes his power from his position in the organization, and followers simply comply but truly believe in or follow the leader (Manz & Sims, 1991). This type of leader is ineffective in an open innovation environment where individuals are privy to all the same information as the leader and have relationships in the open environment that allow them to have better and faster avenues of information to solve problems.

The transactor leader focuses on the exchange of rewards for work performed and incentives to get the most work out of individuals. This leader focuses on goals and rewards and obtains his power through the ability to provide the followers' rewards. The source of wisdom still lies with the leader, and subordinates, in this situation, tend to take a calculated view of their leader by continuing to perform as long as the rewards keep coming (Manz & Sims, 1991). This type of leader is ineffective in the open innovation environment, because the work performed may take years to complete with limited budgets. The rewards often are not realized until the end or release of the project, which will not keep individuals tied to a project just for the reward. There must be an intrinsic drive and reward to keep the followers moving to the end goal.

The visionary hero is a type of leader that focuses on the creation of highly motivating and absorbing visions for the organization. The idea is that if the leader can create a vision that

brings meaning and life to the followers' work, then that vision will be the clarifying beacon that leads to success and engagement. The focus is still on the leader with followers relating to his vision and to the leader themselves. The leader represents the source of wisdom and direction (Manz & Sims, 1991). Visionary leaders often receive considerable attention, especially when these leaders are successful, but visionary charisma can be the undoing of a leader. Visionary leaders often become inflexible, convinced of their own infallibility, and slow to change (Manz & Sims, 1991). The most effective leaders are not afraid to develop strength in their followers and give them the ability to succeed on their own for the good of an organization. The visionary hero leader can be inspiring in an open innovation environment, but without a solid group of self-leaders with autonomous power to act, the vision rarely leads to the success of objectives and goals.

The SuperLeader focuses largely on the followers. The SuperLeader becomes *super* by being able to unleash the abilities of the followers or self-leaders that work with them. Power is more evenly shared between leaders and followers. A leader's task is to help followers to develop the skills to become self-leaders and contribute more fully to the organization's success. In this leadership environment, the leader and self-leaders (followers) both provide the wisdom and direction for the organization, which in turn makes the self-leaders have more commitment and ownership in their work (Manz & Sims, 1991). This type of leader is most effective in the open innovation environment, because this environment requires leaders to embrace ideas from outside their control and to build new types of relationships. Leaders need to build self-leaders who are working with them instead of for them. The leaders should check their power at the door and should provide guidance and encouragement to the self-leaders to accomplish goals.

Manz and Sims (1991) state that an essential ingredient for creating self-leaders is the ability to be optimistic about the potential of ordinary people to accomplish extraordinary things. Self-leadership creation in organizations is often not one of the goals, and little time is taken to educate followers/employees formally on the concept. Three basic assumptions on self-leadership are important for organizations to recognize: (a) everyone practices self-leadership to some degree, but not everyone is effective as a self-leader; (b) self-leadership can be learned; and (c) self-leadership is relevant to all employees including executives and managers. An effort must be made to shift employees to lead themselves. Employees must learn how to set their own goals and develop a confidence in their abilities to achieve them. In an open innovation environment, the ability of employees to set their own goals, for the achievement of the greater goal, will allow a psychological commitment that can energize the employee to greater and greater achievements (Manz & Sims, 1991).

Self-leadership involves many aspects of an individual. Self-efficacy is a key tool in the open innovation environment to help develop self-leaders, who create successful innovations. Innovations often require individuals to have a strong belief in their ideas and to have the confidence that it will work and be successful. Adaptive organizations are more resilient as more of their members hold beliefs of self-efficacy (Feser, 2012). Innovation requires self-leaders, who believe in their ideas and their abilities, to execute tasks and actions to succeed. Therefore, self-efficacy is a part of self-leadership that helps lead to successful innovation. People who doubt their capabilities and lack self-confidence shy away from difficult tasks in certain areas. In contrast, people who have strong beliefs in self-efficacy believe in their abilities and have confidence to approach difficult tasks as challenging rather than threatening. Fostering self-efficacy can be a powerful tool for adapting to change and out-performing competitors (Feser,

2012). Self-efficacy is a part of self-leadership that is important and can be learned by individuals. In order to make innovations successful, individuals must believe that their ideas and abilities are strong and have confidence in them. Leaders need to foster self-efficacy in their followers and provide an atmosphere to enhance their self-efficacy. The atmosphere should include role modeling and working toward mastery in a particular area, which builds the follower's confidence and abilities.

Charlene Li (2010) states that a good open innovation leader is authentic and transparent and has the ability to develop other open leaders. Li's description of a good open innovation leader aligns to the SuperLeader in that a good open innovation leader must have the ability to develop other open leaders or open innovation self-leaders. The focus on authentic and transparent leadership is the key to an open innovation environment where self-leadership should be cultivated. In a world where relationships and business are influenced heavily by social media, a new set of leadership qualities or characteristics is necessary.

Authenticity is a characteristic that must be attributed to a leader, and not one that a leader can say he has. A leader cannot look in the mirror and say, "I'm authentic" (Goffee & Jones, 2005, p. 87). According to Goffee and Jones (2005), "authenticity is largely defined by what other people see in you and, as such, can to a great extent be controlled by you"(p. 87). Leaders in an open innovation environment must be authentic to both their direct followers, who they work with on a daily basis, and their indirect followers in social media and technologies. Leaders must not only cultivate their own authenticity but also encourage their followers or self-leaders to cultivate authenticity. The ability to self-regulate as a leader is a part of being authentic. Leaders need to manage their authenticity to know when and how much of themselves or their company to share. People can be too authentic and over share while others are risk

adverse and share nothing. The middle ground allows followers to get a feeling of trust, integrity, and honesty that makes them want to work with a company or person. Good leaders know this middle ground and know which parts of their identities and personalities to show to whom and when (Li, 2010).

In an open innovation environment, the second focus of a good leader is transparency. Transparency does not mean full disclosure all the time but rather the right information at the right time. Greater transparency of information to other self-leaders can lead to greater trust, empowerment, and higher performance. Transparency is also a characteristic that is measured by others, not by the leader. To create a workforce of self-leaders, leaders must understand how much information people need in order to trust individuals with their jobs, money, and business (Li, 2010). In the open innovation landscape, leadership is not defined by the position you hold but by the people who follow you (Li, 2010). This statement means that any employee or potential self-leader can move freely and quickly around an organization using social networking to influence others just as much as a person in a high position. Historically, the connections and influence within an organization were reserved for those in high positions, but those connections and influence are now at all levels. Self-leadership concepts and skills are important to cultivate when influence and connections can now come from anywhere within or outside your organization.

Promoting Self-leadership for Organizational Innovation

"Innovation is the intentional introduction and application within an organization of ideas, processes, products or procedures new to the unit of adoption, designed to significantly benefit the organization or wider society" (West & Farr, 1990, p. 3). This definition of innovation lends itself to wanting to know what practices and processes need to be in place

within an organization to introduce and create successful innovations. Organizations can have a significant impact on individuals and how innovative they feel as well as how much an individual will commit to sharing the learning or creative ideas with others. Research has demonstrated that new products and technology enhance market share and stock market value, as well as ongoing survival (Shipton, Fay, West, Patterson, & Birdi, 2005). Organizations that wish to grow and prosper must develop individuals that have self-leadership skills and networks that enable individuals to create, transfer, and institutionalize innovative knowledge (Shipton, Fay, West, Patterson, & Birdi, 2005). Self-Leadership can be affected, directly and indirectly, by leader influences and organizational culture that sets the foundation for innovative performance (Hunter & Cushenbery, 2011).

The creation of new ideas or knowledge involves individuals being open to the possibility of growth and learning experiences. An organization must build a workforce with at least moderate levels of creative potential so that there is a workforce in place that is capable of generating original ideas and novel thinking. The environment will need many self-leaders who are able to refine, further develop, and implement ideas. Organizational environments where only the leaders are seen as the innovators will have a difficult time being innovative over the long-term (Hunter & Cushenbery, 2011). Successful, sustained innovation requires a creative workforce with self-leadership skills as well as the leadership to support creative efforts in an organization (Bilton, 2007). In order for an organization to promote creative leadership and creative efforts, an organization should implement the processes required to allow individuals to search for and acquire knowledge to innovate (Shipton, Fay, West, Patterson, & Birdi, 2005). Knowledge to innovate includes learning self-leadership concepts such as self-efficacy, self-

awareness, the ability to work with others, and communication skills, which could help to unlock creativity and communicate results throughout an organization.

Leaders in an innovative environment must realize that the creative process is not linear and must learn how to be patient with projects that stall, start over, or even fail. Innovation requires persistence, and leaders who become frustrated can hinder the creative process or innovation progress (Shipton, Fay, West, Patterson, & Birdi, 2005). Leaders should be cognizant that creative individuals may value greater autonomy over their work or being assigned to tasks where they can continue to innovate (Amabile, 1985). Creative innovators value the ability to be self-leaders and have the autonomy to communicate their ideas among many individuals and groups. Transferring knowledge within an organization involves developing a shared understanding between individuals and work groups so self-leaders, who are given the ability to communicate more freely within an organization, will aid in the successful transfer of knowledge for successful innovations (Shipton, Fay, West, Patterson, & Birdi, 2005).

Implementing knowledge and innovations may require a change in the way an organization conducts activities or the way individuals in the marketplace work or live (Shipton, Fay, West, Patterson, & Birdi, 2005). Leaders within an organization should understand how to appeal to stakeholders while preserving their innovators' creative and exploratory environment, which is key to successful implementation of innovations (Hunter & Cushenbery, 2011). Leading for innovation can be challenging, but having the right individuals in the right positions can foster an environment where self-leadership can prosper and innovations are successful.

Self-Leadership and Entrepreneurial Success

In an open innovation society, everyone has the access to become an entrepreneur in any setting. Everyone has access to communication channels and resources, but not everyone has the

capabilities to lead himself or herself to success. Self-leadership can help entrepreneurs to lead themselves effectively by learning and applying specific behavioral and cognitive strategies to improve their lives and their entrepreneurial business ventures. Entrepreneurship tends to be more of an individually focused endeavor that works in a social nature rather than a team atmosphere (D'Intino, Goldsby, Houghton & Neck, 2007).

The ideals of open innovation allow any individual the promise of entrepreneurship, and self-leadership ideals can assist in the success of an entrepreneurial endeavor. Entrepreneurs and innovators can increase their level of self-leadership understanding by learning about their own individual differences in areas such as optimism, happiness, personality, locus of control, self-monitoring, autonomy, and emotional intelligence. Learning about these self-leadership concepts and strategies can help to shape and assist an individual in understanding the value proposition and risk associated with innovations or entrepreneurial endeavors (D'Intino, Goldsby, Houghton & Neck, 2007). The self-leadership strategy of optimism suggests that an optimistic explanatory style and positive self-talk can help innovators and entrepreneurs to endure bad events and to see the bad events or failures as impersonal and temporary, allowing them to keep moving forward. The self-leadership strategy of happiness suggests that by changing perceptions of the external environment, innovators could increase their individual happiness. An increase in happiness can help entrepreneurs build businesses that play to their strengths and create a work environment where they realize continuous involvement and growth. Personality plays a large role in determining if an individual has natural predispositions to be a self-leader or if an individual needs to learn and practice to develop self-leadership skills (D'Intino, Goldsby, Houghton & Neck, 2007). Self-leaders and entrepreneurs have a strong tendency toward an inner locus of control and believe that their choices and behaviors can directly shape their businesses or

innovations. High self-monitoring often is present in natural self-leaders, as they tend to use self-leadership strategies to manage their self-presentation. The high need for autonomy also suggests a natural tendency for self-leadership, as these individuals are eager to express their individual initiative and have the space to achieve success.

Individual innovators and entrepreneurs can discover and improve these personality characteristics. If individuals do not have natural tendencies, they can learn self-leadership strategies. Successful self-leaders and entrepreneurs are emotionally stable and have the ability to both control their own emotions as well as react to other people's emotions in a constructive way. The four elements of emotional intelligence – self-awareness, self-management, social awareness, and relationship management – are areas in which innovators and entrepreneurs can benefit from learning self-leadership strategies (D'Intino, Goldsby, Houghton & Neck, 2007).

Methodology

Project Overview

This pilot survey study entails gathering data to understand perceptions and attitudes regarding self-leadership and innovation. Participant innovator perceptions are important, because the level of self-mental imagery (or self-perception) can highlight how much natural self-leadership and self-reward structure are present in the participants. High innovator perception levels could indicate a natural tendency toward self-leadership, self-efficacy, and confidence. Low innovator perception levels could indicate a learning opportunity for self-leadership and self-efficacy concepts. It is important to highlight where self-awareness and training will bring the most value in light of the open innovation environment.

Sample

A purposeful, convenience sample was used in collection of the data. While Miles and Huberman (1984) note that using the convenience sample is at the expense of information and credibility, Patton (1990) notes that the logic and power of purposeful sampling lies in selecting information-rich cases from which one can learn a great deal about issues of central importance to the purpose of the research. The participants chosen were from the community, organizations, and companies known for entrepreneurial or innovative characteristics or endeavors. The sample was chosen due to the researcher's direct knowledge of the community entrepreneurs and their success or past participation in successful organizations.

Survey Tool

An electronic survey instrument (see Appendix A) was developed to gather data from individuals involved in professions that require innovative and entrepreneurial skills. The qualitative type of survey does not aim at establishing frequencies, means, or other parameters, but is aimed at determining the *diversity* of some topic of interest within a given population to find meaningful variation within a population (Jansen, 2010). All of the participants had full access to information systems that allowed them to answer the survey, limiting the need for dual-media surveys (Trochim & Donnelly, 2007). The survey questions were developed with a mix of closed-ended questions with explanations and open-ended questions that required the participant to provide written thoughts. The open-ended questions were written to allow participants the ability to express how they felt and what they knew about innovation and self-leadership. The participants' expressions were needed in order to extrapolate the perceptions the participants have of themselves as innovators and entrepreneurs. This survey instrument was created to gather information in order to understand the following:

1. Do individual self-leadership perceptions vary with the position or title of an individual?
2. How hard do they work to nurture an entrepreneurial, self-leader spirit if an individual self-leadership perception changes?
3. Does the individual understand self-leadership concepts?
4. Has the individual had self-leadership training?

All of these questions are aimed at understanding how individual perceptions can highlight where self-leadership training and knowledge transfer will be most effective for an organization in light of a more open innovation environment. The questions used in the survey are outlined in Table 1. The survey was distributed to 25 participants and 17 responded.

Table 1

Innovation and Self-Leadership Survey Questions

Question Number	Question
Q1	Consent for data and secure storage – Y or N
Q2	What is your position or role at your work place?
Q3	Do you have a business or hobby outside of your primary job?
Q4	What does innovation mean to you?
Q5	What type of innovative work do you perform?
Q6	Do you consider yourself an entrepreneur?
Q7	Do you feel innovation and entrepreneurial spirit is encouraged at your job?
Q8	What do you know about self-leadership? (Type a few phrases.)
Q9	How much self-leadership training have you received at work?

Informed Consent

All participants received an online consent notification letter (see Appendix B), and the survey tool specifically asked each participant for consent to use the data. The consent letter and survey results was stored on the researcher's secure laptop, which is located in a secure, limited access, locked office. The study was performed under Marquette University Internal Review Board's approval and no data was collected prior to the approval (see Appendix C). The survey involved minimal risk to the participants.

Confidentiality

The participants in this study were not identified by any coding system. No link between collected data and research participants exists. The results of the study were presented in aggregate form, and the data will not be available to anyone other than the Marquette University IRB, the sponsor, and the researcher.

Findings

Results

The results of the survey instrument were analyzed in two ways. First, the open-ended questions were evaluated by doing a comparison of professions in the survey against the answers in Q4, Q5, Q8, and Q9. The close-ended questions, Q3, Q6, and Q7 were evaluated as a percentage of the total sample surveyed. The results of the closed-ended questions were used to lend further credibility to the patterns seen in the data. The open-ended questions were put into a spreadsheet to compare the answers across all participants to look for patterns in the responses. Two main patterns emerged from the data analysis. The first pattern identified that approximately75% of the participants wrote that innovation meant developing new and creative

ways to solve problems, generate business ideas, explore possibilities, and implement or act on creative ideas for business growth. The participants in this group were all at a high-level position in their organization, such as President, Owner, Professor, Director, and CEO. The participants in this pattern were more likely to strategically think about innovation and link it to business growth. All of the participants in this group seem to use their natural tendency toward self-leadership to realize innovations and their entrepreneurial spirit. Fifty percent of the participants in group one said they did not know anything about self-leadership and had no self-leadership training.

The second pattern identified was that the remaining 25% of the participants noted innovation from a more pragmatic view such as managing budgets, managing manpower, developing applications, applying engineering tools for cost reductions, and construction techniques. The participants in this group were at a mid-level position within their organizations such as Engineer, Program Manager, Engineering Manager, and Engineer/Business Owner. The participants in the second group were more likely to put innovative work they performed into their work context instead of into a strategic context. Fifty percent of the participants in the second pattern or group did not know anything about self-leadership, but fifty percent in the group related self-leadership to their personal goals, skill development and how they would positively use their development to improve self-awareness. Figure 2 visually demonstrates the two patterns identified in the survey data.

The figure highlights the two separate patterns seen in the survey data. The left side of the diagram outlines Pattern 1, where the participants had a high perception of their innovation and entrepreneurial skills, which appeared to give the participants more confidence to apply their natural self-leadership abilities. The participants in Pattern 1 cultivated a personality that made

them feel responsible for innovation. Personality plays a large role in determining if an individual has natural predispositions to be a self-leader. Self-leaders and entrepreneurs have a strong tendency toward an inner locus of control and believe their choices and behaviors can directly shape their businesses or innovations (D'Intrino, Goldsby, Houghton & Neck, 2007). The participants represented in Pattern 1 had definite entrepreneurial thinking, which may have attributed to their strategic thinking. Entrepreneurs often start businesses so they are at higher level positions or owners and often do less pragmatic work on a daily basis.

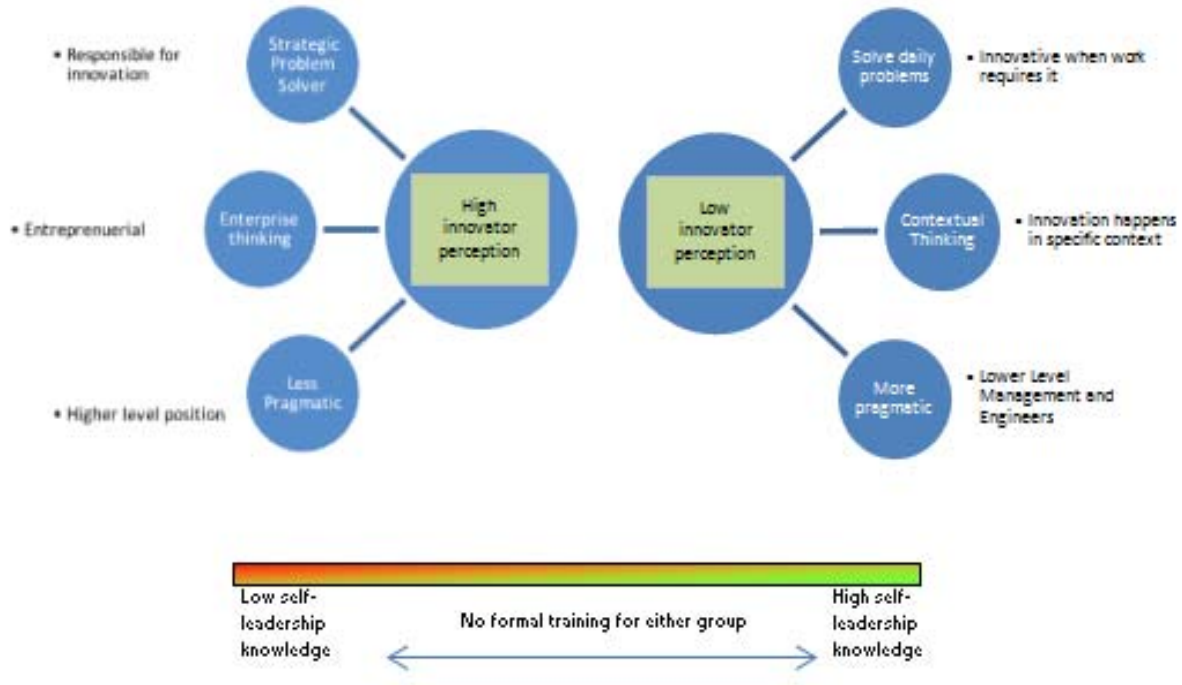

Figure 2: Individual perceptions on innovative endeavors.

The right side of the diagram outlines Pattern 2 found in the survey data. The participants on this side of the diagram had lower innovator perceptions with pronounced pragmatic feelings expressed in their comments such as manage budgets, develop software, develop products, and

apply engineering tools for cost savings. The participants in this group appeared to have lower ownership of innovation and only innovate when their specific work requires it. The participants did not appear to have as strong natural self-leadership tendencies as the group in Pattern 1. Personality could play into the natural self-leadership tendency, helping to identify whether an individual needs to learn and practice to develop self-leadership skills (D'Intrino, Goldsby, Houghton & Neck, 2007).

The two patterns are further supported by additional survey data that asks participants if they consider themselves entrepreneurs and if the entrepreneurial spirit is encouraged at their current job. The results for the two questions were closely related to the two main patterns seen in the data. Seventy-six percent considered themselves entrepreneurs while twenty-four percent did not consider themselves entrepreneurs. One of the comments that was highlighted in the 24% was, "There are aspects of my work that require entrepreneurial thinking, but I don't consider myself an entrepreneur." Pattern 2 results show knowledge of self-leadership, but further awareness and training in self-efficacy could improve perceptions of entrepreneurship. The participants and employees in a company that assume roles like that of business owners, CEO's, etc., with higher self-efficacy levels, can lead employees that work independently to develop and create highly innovative products.

Eighteen percent of the participants felt that an entrepreneurial spirit is not encouraged at their work place. Comments such as "not in my corporate job" and "must balance entrepreneurial spirit with pragmatic business execution" imply that the participants felt leadership within their organization does not value an entrepreneurial spirit or encourage innovation. These comments could explain the highly pragmatic view of innovation that helped to define Pattern 2. The

participants in that comprised Pattern 2 felt like they had a lower impact on innovation, because it was not valued in their organization. No culture embraces open innovation for all positions.

Discussion

In this study, the focus was to understand how individuals perceived their innovative abilities and to determine if they had knowledge of self-leadership concepts. The study aimed to explore whether an individual's position within an organization or profession affected how innovative an individual felt. Finally, the study was a pilot to learn where an organization can get the most value from self-leadership awareness and training. By having more individuals within an organization aware and practicing self-leadership, success in an open innovation environment is more likely. Enhancing learning and awareness at all levels to affect change and innovation requires managing people to release their full creative potential in organizations (Shipton, Fay, West, Patterson & Birdi, 2005). As the world and society move toward an open innovation environment, organizational structures become more decentralized and organic in nature. Individuals at all levels have the ability to gain information and communicate externally at any time, and organizations should recognize and train their workforce for this open environment. The continuing trend of open innovation is going to require organizational forms that focus attention on self-leadership and entrepreneurial spirit and that know how to build leaders within the new organizational forms (Houghton & Yoho, 2005).

This study was able to highlight that individuals within an organization that perform more pragmatic work perceive themselves as having lower innovative abilities and opportunities. All participants in the study were lacking self-leadership, concept awareness, communication, or training; but different patterns emerged based on their positions at an organization or profession. Participants that were in a more autonomous, higher level position or profession were more apt

to view themselves as innovators with entrepreneurial thinking and with strategic problem solving skills. These individuals would benefit from self-leadership awareness and training to recognize their natural tendencies toward innovation and entrepreneurship. The high perception innovators could become SuperLeaders (Manz & Sims, 1991), who mentor and teach others. As stated in the literature review, a SuperLeader's strength can be measured as the ability to maximize the contributions of individuals who perceive their innovative abilities to be lower. The high perception innovators could lead others to lead themselves. Even in light of the technology advances and open innovation environment, many organizations still operate under a model that encourages conformity and adherence rather than one that emphasizes how leaders can lead others to lead themselves (Manz & Sims, 1991). Drucker (1985) also suggests that the most effective leaders are not afraid to develop others within an organization.

Participants who perceived their innovation abilities as lower were more likely to be at lower levels within an organization or profession. These individuals would benefit from self-leadership awareness and training as well as mentoring programs. Organizations could create strategies to grow their staff as self-leaders with perceptions of meaningfulness, purpose, self-determination, competence, and self-efficacy (Houghton & Yoho, 2005). Previous research has highlighted that there is a multi-directional relationship between self-leadership and psychological empowerment. In other words, individuals experiencing feelings of self-determination, competence, purpose, and self-efficacy may be more likely to engage in self-leading behavior than those who are not experiencing psychological empowerment (Houghton & Yoho, 2005).

The culture of an organization plays a role in the development of self-leaders with high innovator perceptions. Drucker (1985) indicates there is a tremendous premium on having clear

organizational goals and a demanding organizational mission to support self-leadership goals and values. An organization should work to set clear self-leadership goals with the ability to measure success in both development of self-leaders and growth in innovation. One way to develop self-leaders is to ensure there are SuperLeaders (Manz & Sims, 1991) identified for role modeling. Once the individuals with an already high perception of their innovator abilities are aware and trained in self-leadership/entrepreneur concepts, they could become the models and mentors for the individuals with lower innovator perceptions. Past research referred to modeling by observation as social learning theory. Leaders often serve as the role models to set what is appropriate behavior for self-leadership. Individuals are more likely to learn and adopt self-leadership concepts and behaviors from role models they admire and respect who are already modeling the behavior (Hunter & Cushenbery, 2011).

Self-leadership awareness and training are growing in importance as the open innovation environment grows in both numbers and importance. Training and education in an open environment is important in order to change mindsets and behaviors. Self-awareness is a key attribute of open innovation leaders, because it points to how you approach being open in other aspects of your life (Li, 2010). Today's market conditions are driving organizations to be more open, and organizations in turn need to respond by developing a work force that is aware of self-leadership concepts for growth and success. Developing individuals with the continued potential for innovation and leading innovation will require substantial commitment to skill development that allows individuals to change their perceptions of their innovation ability and to build self-efficacy around innovation (Hunter & Cushenbery, 2011).

Conclusion

Research Limitations

Despite the present study providing a baseline for where self-leadership in an open innovation environment can be best focused and how individuals' innovation perceptions of themselves can affect innovation levels, there are two important limitations of the study. First, the convenience sample consisted of individuals who are involved in innovative professions, which could affect the generalizability of these results. However, the sample chosen seems appropriate to that of an exploratory pilot study because the primary focus of this study was to gather baseline qualitative data from a relatively small sample. Second, the study could contain participant bias in social desirability as the convenience sample consists of individuals who are accustomed to providing the right answers. The participants could have reviewed the questions and researched for perceived right answers. The survey questions were developed to explore how participants felt and to determine what they knew about self-leadership and innovation rather than having them provide answers from media sources.

Future Research

Future research should focus on gathering empirical data using mixed methods. It would be ideal to use case studies to gauge actual results when self-leadership training series were applied to select case groups within an organization. A case study that applies self-leadership awareness and training to one group of individuals and compares the outcomes to a separate group of individuals can help to determine if there is a statistically significant difference in the variation between the groups. Qualitative methods could be applied to the groups as a form of intervention and evaluation. A most significant change approach, as highlighted by Trochim and Donnelly (2007), could be used to interact with the participants by asking them to describe how

awareness, education, and knowledge on self-leadership affected their innovative feelings and innovation success.

Concluding Remarks

The central point emerging in this study is that the new open innovation environment requires an organization's entire workforce to develop self-leadership awareness and competency. It is not enough to have just a select few that lead innovation with natural tendencies and high perceptions of their innovation capabilities. Everyone has the ability to communicate ideas externally and receive ideas from external sources toward innovative projects. Everyone must know how to apply their self-leadership skills to bring those ideas to innovation success.

References

Aberdeen Group. (2008). Open innovation: The new paradigm driving profitable product development. Retrieved from: http://www.aberdeen.com/access/research_studies/default.asp

Adner, R. (2012). *The wide lens: What successful innovators see that others miss.* New York: Portfolio Trade.

Amabile, T. M. (1985). Motivation and creativity: Effects of motivational orientation on creative writers. *Journal of Personality and Social Psychology*, 48, 393-399.

Bilton, C. (2007). *Management and creativity: From creative industries to creative management.* Malden, MA: Blackwell.

D'Intino, R. S., Goldsby, M. G., Houghton, J. D., & Neck, C. P. (2007). Self-leadership: A process for entrepreneurial success. *Journal of Leadership and Organizational Studies, 13*(4), 105-109. doi: 10.1177/10717919070130040101

Drucker, P. (1985). *Innovation and Entrepreneurship* (1st ed.). New York: Harper Collins Publishers, Inc.

Feser, C. (2012). Foster self-efficacy for innovation and growth. *Leadership Excellence, 29*(4), 13-14.

Goffee, R., & Jones, G. (2005, December). Managing authenticity: The paradox of great leadership. *Harvard Business Review, (83)*12, 87-94.

Houghton, J. D., & Neck, C. P. (2002). The revised self-leadership questionnaire: Testing hierarchical factor structure for self-leadership. *Journal of Managerial Psychology, 17*(8), 672-691.

Houghton, J. D., & Yoho, S. K., (2005). Toward a contingency model of leadership and psychological empowerment: When should self-leadership be encouraged? *Journal of Leadership and Organizational Studies, 11*(4), 65-83.

Hunter, S. T., & Cushenbery, L. (2011). Leading for innovation: Direct and indirect influences. *Journal for Advances in Developing Human Resources, 13*(3), 248-265. doi: 10.1177/1523422311424263

Jansen, H. (2010). The logic of qualitative survey research and its position in the field of social methods. *Qualitative Social Research, 11*(2), Art. 11. Retrieved from: http://nbn-resolving.de/urn:nbn:de:0114-fqs1002110

Li, C. (2012). *Open leadership: How social technology can transform the way you lead* (1st ed.). San Francisco: Jossey-Bass.

Lindegaard, S., & Chesbrough, H. (2013). Lessons from the front lines of open innovation. Retrieved from The Build Network website: http://thebuildnetwork.com/team-building/open-innovation-challenges

Manz, C. C. (1992). Self-leadership … The heart of empowerment. *The Journal for Quality and Participation*, *15*, 80-89.

Manz, C. C., & Neck, C. P. (2004). *Mastering self-leadership: Empowering yourself for personal excellence* (3rd ed.). Upper Saddle River, NJ: Prentice Hall.

Manz, C. C., & Sims, H. P. Jr., (1991). SuperLeadership: Beyond the myth of heroic leadership. *Organizational Dynamics*, *18*, 18-35. doi: 10.1016/0090-2616(91)90051-A

Miles, M. B., & Huberman, A. M. (1984). *Qualitative Data Analysis* (2nd ed.). Newbury Park, CA: Sage Publications.

Örmgård, C. (2013, September 24). Open innovation collaboration puts new demands on leadership. Retrieved from Phys.Org website: http://phys.org/news/2013-09-collaboration-demands-leadership.html

Patton, M. Q. (1990). *Qualitative Evaluation and Research Methods* (2nd Ed.). Newbury Park, CA: Sage Publications.

Pop, O. (2013). Open innovation past and present: An exclusive interview with Henry Chesbrough. Retrieved from InnovationManagement.se website: https://www.innovationmanagement.se/2013/07/17

Shipton, H., Fay, D., West, M., Patterson, M., & Birdi, K. (2005). Managing people to promote innovation. *Journal of Creativity and Innovation Management, 14*(2), 118-128.

Trochim, W. M. K., & Donnelly, J. P. (2007). *Research Methods Knowledge Base* (3rd ed.). Mason, OH: Thomson Corp.

West, M. A., and Farr, J. L. (1990). Innovation at work. In M. A. West, & J. L. Farr (Eds.), *Innovation and creativity at work. Chichester, England: John Wiley & Sons*, (pp. 3-13).

Van de Ven, A. H. (1986). Central problems in the management of innovation. *Management Science, 32*(5), 590-607.

Appendix A: Electronic Survey Instrument

Project: Innovation and Self-Leadership: The effects self-leadership knowledge could bring to the open innovation landscape.

Type of Instrument: Electronic Survey

Description: This electronic survey instrument was developed to gather data from individuals involved in professions that require innovative and entrepreneurial skills.

---

1. Do you understand that you are giving consent for your data to be used in a study and that you will not be identified in any manner by your answers? The data will be kept in secure storage for 3 years after the survey. (Y, N)

2. What is your position or role at your work place? (open)

3. Do you have a business or hobby outside of your primary job? (open)

4. What does innovation mean to you? (open)

5. What type of innovative work do you perform? (open)

6. Do you consider yourself an entrepreneur? (Y, N)

7. Do you feel innovation and entrepreneurial spirit is encouraged at your job? (open)

8. What do you know about self-leadership? (Type a few phrases.) (open)

9. How much self-leadership training have you received at work? (Open)

Appendix B: Online Consent Notification Letter

Marquette University – Online Research Consent

Self –Leadership and Innovation Survey

Lynn Eliason – Professional Studies

As a valued colleague, I would like to invite you to help me understand the impact self-leadership has on innovation in the workplace and home. The purpose of this research study is to understand if self-leadership concepts play a role in the effort put forth by individuals to further innovation and entrepreneurial projects in organizations. You will be one of approximately 15 participants in this research study.

This is your opportunity to voice your opinion on leadership and innovation to further the scholarly study in this area. By completing this survey, you will help inform my work in this area and your opinion is very important to me. This survey should take no more than twenty (20) minutes of your time to complete. The risks associated with participation in this study will not increase from your normal expected work demands and interactions. There are no direct benefits to you for completing the survey.

The closing date for the survey is 31 October 2013. Please be assured that all information you provide will be held in the strictest confidence and no data will be made attributable to any individual or institution. The data will be destroyed no later than 3 years after the completion of the study.

Please click the link below to start the survey. Be sure to hit the done button once you are finished with the survey.

http://www.surveymonkey.com/s/ZBRQ77T

If you have any questions regarding this study, please contact Lynn Eliason at (906) 231-3512 (phone) or lynn.eliason@marquette.edu and I will respond as quickly as possible.

Appendix C: Marquette University Internal Review Board Approval

MARQUETTE UNIVERSITY
Be The Difference.

Office of Research Compliance
Schroeder Complex, 102
P.O. Box 1881
Milwaukee, Wisconsin 53201-1881
P 414.288.7570
F 414.288.6281
W marquette.edu/researchcompliance

October 23, 2013

Ms. Lynn Eliason
Professional Studies

Dear Ms. Eliason:

Thank you for submitting your protocol number HR-2696 titled, *"Innovation and Self Leadership: The effects of organizational environment and self leadership on innovation and entrepreneurial efforts"* to the Office of Research Compliance (ORC). On October 22, 2013, a determination of exempt status was made under the following category or categories:

Category #2: Educational Tests, Surveys, Interviews, or Observations

You may proceed with your research. Your protocol has been granted exempt status as submitted. Documents submitted with your protocol (consent, flyer, etc.) may be used but do not receive formal IRB approval.

Minor changes to the project may be emailed to orc@mu.edu. Major changes, or changes affecting participant risk, require submission of a Protocol Amendment Form which can be found on the ORC web site.

Please submit an IRB Final Report Form once this research project is complete. Submitting this form allows the ORC to close your file.

If you have any questions or concerns, please do not hesitate to contact me. Thank you for your time and cooperation.

Sincerely,

Amanda J. Ahmdt

Amanda J. Ahmdt, RN, MS, MSN, CIM, CIP
IRB Manager

cc: Dr. Christopher Okunseri, IRB Chair
Dr. Mark Polczynski
Ms. Sherri Lex, Graduate School
Ms. Emily Hernandez, Professional Studies

AA/jn