UNIVERSITY COLLABORATION IN REGIONAL ECONOMIC DEVELOPMENT: A CASE STUDY OF A MID-RANGE UNIVERSITY

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Dedication

This dissertation is dedicated to my amazing family…

My devoted wife, Christina

My beautiful and talented children, Katherine, Sophia, William, and Isabella

My doting and loving mother, Susan F. Brussalis

And in memory of my father, William G. Brussalis

And my grandparents,

William and Dian Brussalis and W. Ralph and Helen Faulkner

Their love, guidance, and sacrifice made all of this possible
Acknowledgements

This journey would not have been possible without the support of many individuals. I would first like to thank my wife, Christina, for her support. While encouraging me through the pursuit of this degree, she gave me three beautiful babies, Sophia, William, and Isabella. Christina made many sacrifices and filled in for me while I was studying or traveling. My children Katherine, Sophia, Will, and Isabella have shown significant patience and gave their dad too many passes on play for work. I hope that my example has instilled in my children a love of lifelong learning and a passion for knowledge.

I would like to thank my colleagues at my firm, The Hill Group, Inc., for their support, patience, and understanding. These consummate professionals afforded me tremendous flexibility and stepped up to provide leadership to grow our firm while I focused a significant portion of my time on this degree.

This case study would not be possible had it not been for the support of my friend and colleague, Dr. Paul Hennigan, President of Point Park University. Dr. Hennigan advised me as I pursued the study of higher education administration and opened Point Park University to me as a laboratory for my research. I would also like to thank my friend and colleague, Dr. Ed Roach, a retired university president with whom I had the good fortune to work and whose mentorship I received during this process. I will always be grateful to Drs. Hennigan and Roach for their friendship and counsel.

Finally, I would like to thank my dissertation committee. My chair, Dr. Margaret Gorman, supported me throughout this journey, always offering great advice to improve my study. Dr. Jennifer Qian, without hesitation, accepted my invitation to fill the void when I had a
sudden vacancy on my committee. Dr. Qian was instrumental in advising me on my methodological approach while a student in her Research Design class. Dr. Brian Bicknell encouraged me to take my skills as a scholar-practitioner to a higher level as I applied the knowledge gained from his course to have significant impact in the field. I would also like to thank Dr. Sandy Nickel for her advice and support until she took a temporary medical leave from the university.
Abstract

This research explored how leaders from a mid-range university, industry, and government described collaborative efforts to enhance regional economic development. This study found that a mid-range university can effectively collaborate with industry and government to advance regional economic development. The collaboration of university-industry-government partners to pursue regional economic development initiatives was facilitated and furthered by key factors and competencies that included proactive leadership of the university, a competency of planning, an understanding and acknowledgement of the value and importance of stakeholder engagement in developing a shared vision with stakeholders and collaborating partners, and an understanding and resolve that collaboration was in one’s self-interest.

Universities that can improve and leverage their ability to collaborate with government and industry to impact regional economic development in an effective and efficient manner will become relevant and critical civic partners in their regions and states. Implications and recommendations for future research included considering the expansion of the triple helix to understand tripartite collaboration to advance regional economic development to a quadruple helix that includes the philanthropic sector, understanding the phasing of the stakeholder engagement processes from planning to execution and performance measurement, and the growing importance of resource leverage to initiative and sustain collaborative initiatives.

Keywords: university collaboration, higher education, regional economic development
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Chapter 1: Introduction to the Study

Universities have collaborated with industry and government to impact regional economic development in the United States. Regional economic development is becoming more important to improve the vitality of regions, and universities are relied upon as important collaborators in this process. This thesis explored how leaders from a mid-range university, industry, and government described collaborative efforts to enhance regional economic development.

Statement of the Problem

Universities have the potential to drive regional economic development through a tripartite collaboration with policy makers and industry (Etzkowitz, 2012; Warshaw & Hearn, 2014). Since the seminal work of Nelson (1959), it has been generally accepted that the geographic proximity of universities to knowledge-intensive industry produces innovation and economic benefit to a region (Colombo, D’Adda, & Piva, 2010; Feldman & Florida, 1994). Higher education institutions, including universities, liberal arts colleges, and community colleges, have become more engaged in economic development activities like technology transfer, collaborative research with industry and government, consulting, and workforce development. Universities have played a major role to positively impact the quality of life and economic growth and development in the regional economies in which they reside (Bagchi-Sen & Smith, 2012). Universities that can leverage government collaboration along with industry collaboration to impact regional economic development in an effective and efficient manner will become relevant and critical civic partners in their regions and states, while enhancing their own sustainability.
There is sufficient evidence to demonstrate that collaboration among university, government, and industry stakeholders is a critical element to effective impact of regional economic development (Etzkowitz, 2012; Rafn, 2012; Warshaw & Hearn, 2014). The Morrill Act of 1862 is an example of collaboration between government and universities to prepare a workforce to meet the needs of industry with the higher order goal of enhancing economic development. Also known as the Land Grant College Act, the Morrill Act provided an incentive for states to sell distant western lands with the states obliged to establish collegiate programs in the “useful arts” such as agriculture, mechanics, mining, and military instruction that would benefit industry (Thelin, 2011). In addition to workforce development, the quality of research performed by universities and the technology that can be transferred to industry for application had a positive effect on the growth of firms utilizing university-developed technology (Colombo et al., 2010). Etzkowitz (2012) studied the innovation that was created from the interactions of universities and their regions like Massachusetts Institute of Technology and Boston, Stanford and Silicon Valley, the Research Triangle and North Carolina, and Newcastle University and Northeast United Kingdom and found that university-industry-government collaboration was critical to innovation and economic development in those regions.

Collaboration among universities, industry, and government and the sharing of information and resources across entity boundaries has been examined in the literature. A triple helix model is commonly used as a framework to describe innovation or economic development at the regional level among universities, industry, and government (Etzkowitz, 2012; Warshaw & Hearn, 2014). While drivers of innovation to enhance regional economic development vary and are implemented by situation and need, Etzkowitz (2012) identified the importance of permeability among university-industry-government boundaries. Permeability in university
boundaries is an essential condition in creating an entrepreneurial university that is the driving force of the most successful innovation regions; however, not much is known about the process involved to initiate and sustain permeability in university boundaries.

In order for higher education to have impact on regional economic development, conditions within a particular region need to be in place in order to foster collaboration, activity, and results. Minimal research attention has been directed toward this issue. Although specific examples and types of economic impact have been examined in the literature, there have been few studies focusing on why some universities are more effective than others in realizing positive impact on their communities and benefiting from their impact. Even though the evidence suggests that collaboration among universities, industry, and government can positively impact regional economic development, there is a lack of understanding on how these collaborations are developed and leveraged to benefit regional economies. Specifically, how do leaders of mid-range universities collaborate with leaders of industry and government to facilitate effective impact? The identification of elements of effective university-industry-government collaboration to drive regional economic development will be of great importance to universities that must demonstrate value to their regional investors as an economic development partner and to their boards and other stakeholders concerned with the university’s sustainability.

Excluding increased federal funding to Medicaid benefits under the Affordable Care Act, federal funding to states has slowed over the past several years since the passage of the Budget Control Act in 2011 (National Association of State Budget Officers, 2015). Significant state funding cuts create a major consequence for public universities since states and regions provide 53 percent of revenue that can be used to support operations at these institutions (State Higher
Education Executive Officers, 2016). This scarcity of resources also impacts private colleges and universities by limiting funding for grants, scholarships, and loans. The need to stimulate regional economic development, coupled with the desire of universities to identify new revenue sources to enhance sustainability, provides an opportunity to learn more about the unique position and opportunity for universities to play the role of collaborator.

Previous research focused on the types of impacts that universities have on regional economic development. Universities typically impact regional economies in two primary areas: 1) academic entrepreneurship where regions benefit from direct and indirect spinoff activities from the formation of firms and the commercialization of university-influenced intellectual property and 2) university-industry collaboration that includes direct and indirect effects on local innovation, translational research, technical assistance to firms, workforce development, employment, and other impacts on the university supply chain (Bagchi-Sen & Smith, 2012). Research and doctoral-degree granting universities often span the continuums across academic entrepreneurship and university-industry collaboration. More must be learned about the process and approaches that these institutions utilize to engage with industry and government to collaborate in order to impact regional economic development.

There are deficiencies in the literature to demonstrate the process of how universities collaborate and form these linkages to industry and government, particularly for mid-range universities. Since mid-range universities lack the critical mass of larger research institutions, they must be more selective and strategic as they develop a portfolio of industry and government linkages relevant to the scope of activities and the types of firms with which they interact (Wright, Clarysse, Lockett, & Knockaert, 2008).
Significance of the Problem

Federal grant spending to states decreased by five percent over the last ten years (Pew Charitable Trusts, 2014). States and regions, in need of revenue, are looking toward universities to stimulate regional economic development. At the same time, a substantial shift of responsibility for financing higher education to net tuition over the past decade placed a strain on universities (State Higher Education Executive Officers, 2016). When revenue opportunities for universities are reduced, institutions must decrease academic services or operating costs, raise tuition, develop new income streams, or engage some or all of these tactics in order to operate within a balanced budget. Fiscally strained universities are often challenged to focus first on their own survival before expending programmatic resources to stimulate regional economic development.

Schumpeter (1950) argued that economic growth in a region requires innovation or the ability to produce higher quality goods and services at a lower unit cost. Regions with a university presence can benefit from direct and indirect spillover effects from university research and service activity (Colombo et al., 2010; Feldman & Florida, 1994; Mack & Stolarick, 2014). Feldman and Florida (1994) found that a region’s capacity for innovation was dependent upon the area’s technological infrastructure, which consisted of university research and development along with industrial research and development, agglomeration of related industry, and specialized services to support the innovation activities. Colombo, D’Adda, and Piva (2010) found that universities influenced the growth rates of local academic start-up firms.

However, not all industry or government sectors within a region benefit from university collaboration (Furman & MacGarvie, 2007). According to Wong, Ho, and Singh (2007), many
leading universities in the world have not been successful in promoting technology or knowledge transfer. In many of these cases, the propensity for collaboration between universities and industry were relatively low, and universities were not highly regarded as vital sources of technology. While universities producing high-quality scientific research have a beneficial impact on the growth of academic start-up firms, a greater commercial orientation of university research can actually reduce knowledge available for utilization by regional firms, which can be detrimental to a region (Colombo et al., 2010).

The potential for universities to contribute to regional economic development was being explored across the industrialized nations of the world (Bramwell & Wolfe, 2008). Youtie and Shapira (2008) observed that universities in many advanced countries have been proactively seeking or have been influenced by their governments to pursue greater linkages and relevance for innovation, particularly at the regional level.

This issue of university collaboration and its impact on regional economic development is becoming an increasingly important issue to public and private sector stakeholders. The identification of elements of effective university-industry-government collaboration to drive regional economic development will be of great importance to university administrators who must demonstrate value to their boards and regional investors as an economic development partner, as well as other stakeholders interested in the university’s sustainability. Leaders in industry and policy makers will benefit from a greater understanding of the process of collaboration through the engagement of these stakeholders in regional economic development. Higher education institutions that can leverage university-industry-government collaboration to
impact regional economic development in an effective and efficient manner will become relevant and critical civic partners in their regions and states, while enhancing their own sustainability.

Traditionally, private industry, government, and universities have pursued their respective goals in isolation; however, these entities have come to realize that more can be accomplished through collaboration rather than working independently of each other (Galloway & Minton, 1997). Given the need of states and regions to improve economic development to improve the quality of life for their citizens, governments have been prompting universities to provide leadership, offer knowledge, and provide services to support the efforts of industry to advance regional economic development. With resources becoming scarce for government, industry, and universities, this is an opportune time to study university collaboration in regional economic development.

In order to understand how leaders of a mid-range university, industry, and government describe collaborative efforts to enhance regional economic development, it is useful to provide context and examples of projects that demonstrate collaborative efforts. Three projects facilitated by Point Park University in Pittsburgh, Pennsylvania where collaboration with industry and government was critical to enhance regional economic development provided context for this exploration of tripartite collaboration.

The Academic Village, a multi-block living and learning hub that transformed the Point Park University campus and its Downtown Pittsburgh neighborhood, was initiated about five years ago. The Center for Media Innovation, a New York City-style media facility in the heart of Pittsburgh to provide hands-on experiences to collaborate with professionals in a laboratory for media innovation, opened in September 2016. The third project, the Pittsburgh Playhouse
Theater, currently under construction across the street from PNC Financial Service Group’s new world headquarters in Downtown Pittsburgh, will bring another theater to the Downtown Cultural District and provide opportunities for students and professionals to collaborate in entertainment management industry.

**Positionality**

My professional background and work as an educator and consultant in higher education and economic development led me to this area of practice. According to Ravitch and Riggan (2012), my personal interests are what drive me to do this type of work. My personal interests and background provide a passion and dedication for conducting research, and they could also present strengths and weaknesses for my research effort (Machi & McEvoy, 2012).

While my background, interests, and positionality may influence my approach to work and likely intensify its joys and challenges, I must be cognizant of my background and interests as a scholar-practitioner conducting objective research. In my professional practice, I serve as the chief executive officer of a management consulting firm, adjunct professor of a major university, and trustee of several national and regional organizations. These positions provide me with experience, position, and privilege that must be acknowledged in order to conduct objective research.

As a management consultant, I have an opportunity to collaborate with leaders of organizations to facilitate change to impact those organizations. In order to work collaboratively with clients, a consultant must master the ability to actively listen and be open-minded. I have also found that, in many consulting engagements, the process associated with an initiative was often as, or more, valuable than the product of the engagement. As a trustee serving in a
leadership role of several organizations, I have an opportunity to shape and influence policy and direction of these organizations and to improve the sustainability of them. As an adjunct professor, I am privileged to have an opportunity to transfer knowledge and experience to my graduate students by serving in multiple roles as an educator, advisor, mentor, motivator, and friend. This scholar-practitioner role enabled me to study problems and opportunities and add value back to organizations and my profession. Having an ability to directly impact organizations provided me with tremendous satisfaction, but as a researcher, the experience of problem solving can be limiting or create bias when my research focus may be on understanding a condition prior to or in place of solution building.

Since my professional background and work as an educator and consultant in higher education and economic development led me to this area, it may predispose or create bias to the notion that higher education’s impact on economic development is a social benefit. As recommended by Jupp and Slattery (2010), I must carefully draw out my commonsense thinking in this area of impact and objectively critique it. As a researcher trying to understand and define criteria to assess impact of higher education on economic development, I must maintain a neutral position and control any bias and opinion that I bring to my research so as not to jump to premature or incorrect conclusions (Machi & McEvoy, 2012). In order to accomplish this, I must first objectively identify the interests and motives that contribute to my passion and curiosity in the topic. Carlton Parsons (2008) advised that I should consider positionality of the individuals and groups involved with my research. I must reflect on my vantage point and perspective when considering the perceptions and data from all relevant parties and aspects of the research.
Research Question

The primary research question of this study addresses the process of tripartite collaboration: How do leaders from a mid-range university, industry, and government describe collaborative efforts to enhance regional economic development?

Conceptual Framework

A theoretical framework plays a key role in framing and conducting almost every aspect of a qualitative research study (Anfara & Mertz, 2006). In this study, a conceptual framework for understanding university collaboration in regional economic development was used to address the research question by utilizing two theoretical frameworks. A triple helix model of university-industry-government relations that focused on the emergence of tripartite collaborations (Etzkowitz, 1997, 2003) was utilized to understand the process of tripartite collaboration. The Wilder Collaboration Factors Inventory (WCFI), a framework for understanding community collaboration through twenty factors that influenced the success of a collaboration (Mattessich, Murray-Close, & Monsey, 2001) was used to explore the process of effective tripartite collaboration.

Triple Helix

A triple helix model was commonly used as a framework to describe innovation at the regional level among universities, industry, and government. Etzkowitz (1997) proposed a model to describe the policy analysis that must be broadened beyond the realm of government actions with industry or with universities to incorporate the negotiations that took place among the three spheres of universities, industry, and government to identify the emergence of trilateral
initiatives in economic development. The systematic interaction among the various agencies carrying the triple helix created a dynamic overlay of university-industry-government relations that contained its own recursive dynamics, resulting in the development of the knowledge-based economy (Etzkowitz, 1997, 2003). According to Etzkowitz (2003), the triple helix thesis was expressed in ten propositions, and the organizing principle of the triple helix was the expectation that the university played a greater role in society as an entrepreneur. A summary of the ten propositions of the triple helix is shown in Table 1.

*Table 1. Triple Helix Propositions*

<table>
<thead>
<tr>
<th>Proposition</th>
<th>Description</th>
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<tbody>
<tr>
<td>1</td>
<td><strong>Arrangements and networks among the Triple Helix institutional spheres provide the source of innovation rather than any single driver.</strong> New initiatives arising from these networks become the source of innovation policies. Innovation is a broader phenomenon than anything that takes place in a single institutional sphere, such as the behavior of enterprises in planning and implementing changes to develop new products or learning from fellow firms in a cluster or from another sector. Academic research now increasingly intersects with industrial advance and government economic development policy. Government thus becomes a partner in the policy making process as policies become an outcome of the interactions among the Triple Helix agencies.</td>
</tr>
<tr>
<td>2</td>
<td><strong>Invention of organizational innovations, new social arrangements and new channels for interaction becomes as important as the creation of physical devices in speeding the pace of innovation.</strong> New organizational mechanisms such as incubators, science parks, and networks among them become a source of economic activity, community formation, and international exchange. New modes of interdisciplinary knowledge production, involving Triple Helix partners, inspire research collaboration and firm-formation projects.</td>
</tr>
<tr>
<td>3</td>
<td><strong>The interaction between linear and reverse linear dynamics results in the emergence of an interactive model of innovation.</strong> The linear model of knowledge-transfer is transformed into an “assisted linear model” as technology generated in academia is transferred by licensing offices as intellectual property and through the formation of firms in incubator facilities. The reverse linear model, starting from industrial and social problems, provides additional starting-points for new research programs and discipline formation. The interactive model, integrating research and practice, originating in the US with the founding of the University of Connecticut in 1816 as the progenitor of the “land grant” university, with a county agent as intermediary between farmers and researchers.</td>
</tr>
<tr>
<td>4</td>
<td>The “capitalization of knowledge” occurs in parallel with the “cogitization of capital.” Financial capital is increasingly infused with knowledge through the invention of new risk sharing and investment search mechanisms such as the venture capital firm, allowing capital to overcome some of its doubts and hesitations in making early-stage investments. Just as incubator facilities are created to assist the transformation of knowledge into capital, new organizational mechanisms are invented and old ones, such as the patent system, are extended from intellectual property protection into sources of new inventions, thereby transforming the capital- and knowledge-creation processes in tandem.</td>
</tr>
<tr>
<td>5</td>
<td>Capital formation occurs in new dimensions as different forms of capital are created and transmuted into one another: financial, social, cultural, and intellectual. The transformation of capital cannot be fully understood from the perspective of either the individual firm or the operation of markets. New forms of capital are created based upon social interaction, “who you know,” and intellectual activities, “what you know.” Forms of capital are interchangeable. Thus raising financial capital is based on accumulating intellectual as well as social capital. Human, social, and intellectual capitals are redefined as universities interact more intensively with industry and government.</td>
</tr>
<tr>
<td>6</td>
<td>Globalization becomes decentralized and takes place through regional networks among universities as well as through multi-national corporations and international organizations. As organizational innovations for technology transfer diffuse from one part of the world to another, interaction across regions and nations reinforces globalization. As universities develop links, they can combine discrete pieces of intellectual property and jointly exploit them. These new configurations become the basis of a continuous process of firm formation, diversification, and collaborations among competitors.</td>
</tr>
<tr>
<td>7</td>
<td>Developing countries and regions have the possibility of making rapid progress by basing their development strategies on the construction of niche knowledge sources, supported by the local political economy. Political and social arrangements based on principles of equity and transparency lay the groundwork for rapid development in a stable environment. “Leap-frogging,” to skip some stages of development, is thus possible as well as “catch-up” strategies of attracting foreign direct investment (FDI) and inward technology transfer. Universities and networked incubators can be used both to adapt advanced technologies to solve local problems and also to move abreast of the research frontier in special areas and to transfer local innovations abroad.</td>
</tr>
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</table>
Reorganizations across institutional spheres, industrial sectors, and nation-states are induced by opportunities in new technologies that emerge from syntheses among previous interdisciplinary innovations in an ongoing flow. Technological innovation reshapes the landscape in terms of the development of niches and clusters, relations among firms of different sizes and types, and the creation of both public and private sources of venture capital. Enterprises are constructed out of elements from all the relevant institutional spheres, not merely from industry itself. Social developments take unexpected turns as new technologies reinforce the dynamics of firm formation and vice versa. Discipline formation takes place through intersection among previous interdisciplines as well as the splitting off of subdisciplines.

Universities increasingly become the source of regional economic development and academic institutions are re-oriented or founded for this purpose. The growth of industrial conurbations around universities, supported by government research funding, has become the hallmark of an entrepreneurial region, exemplified by Silicon Valley’s electronics and semiconductor industry. The profile of knowledge-based economic development was further raised by the founding of Genentech and other biotechnology companies by academics and venture capitalists in the 1980s. Other regions in other countries, such as Karlskronna Ronneby in Sweden, shifting from shipbuilding to software, and the State University of Rio de Janeiro in Friburgo, inserting an IT-based graduate school to hybridize with older technologies, have adapted this strategy to revive declining industrial regions. There have also been initiatives to develop other “greenfield” sites such as exurban Long Island, where the State University of New York at Stony Brook created a biotechnology industry from the research resources available in a new medical school.

The ability to make the transition from one technological paradigm to another as the potential of an earlier regime becomes exhausted is the hallmark of a Triple Helix region. A broad-based research university or multiple interacting knowledge-producing institutions, with strategic investments in emerging research areas with economic potential, supported by government initiatives, provides the basis for this shift. Conversely, too narrow a research base or inadequate support structure, sometimes based on the short-sighted belief that previous economic successes were due solely to business entrepreneurship, inhibits the potential for transition. Triple Helix interactions, institutionalized and renewed across generations of technologies, are the basis of seemingly self-organized networks of innovation.

(Etzkowitz, 2003)

According to Etzkowitz (2003), the unifying principle of the triple helix was the expectation that the university assumed a greater role as an entrepreneur in societal activities, whereby the university maintained its traditional academic roles in the creation and dissemination of knowledge while taking on a new role in promoting innovation. In the emergence of a triple helix, four stages can be identified as shown in Table 2.
Table 2. Four Stages in the Emergence of a Triple Helix

<table>
<thead>
<tr>
<th>Stage</th>
<th>Description</th>
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<tbody>
<tr>
<td>1</td>
<td><strong>Internal transformation in each of the helices.</strong> Universities and other knowledge-producing institutions play a role in society, not only in training students and conducting research but also in making efforts to effectively put knowledge to use. Expressed through technology-transfer offices and the requirements of government grant programs for the support of research, the entrepreneurial university elides the traditional boundaries between academia and industry. Strategic alliances for R&amp;D among companies and governments taking the role of venture capitalist are parallel, intersecting developments.</td>
</tr>
<tr>
<td>2</td>
<td><strong>Influence of one helix upon another.</strong> The US federal government established a stable framework for academic technology transfer through the Bayh-Dole Act of 1980. This amendment to the Patent and Trademark Law instituted an indirect industrial policy through which government encouraged universities to assist industrial innovation. Secure rules of the game for the disposition of intellectual property arising from government-sponsored research encouraged the spread of technology transfer to a broader range of universities and expanded the academic technology-transfer profession. Since universities and their representatives were involved in lobbying for the law, the direction of influence went both ways.</td>
</tr>
<tr>
<td>3</td>
<td><strong>Creation of a new overlay of trilateral networks and organizations from the interaction among the three helices.</strong> Such groups typically form to fill gaps in an innovation system by “brainstorming” new ideas. Joint Venture Silicon Valley, established during the economic downturn in the early 1990s, the Knowledge Circle of Amsterdam, organized during the past decade, and the New England Council, founded in the 1920s, included participants from small and large companies, local government, and academia. The New England Council played a key role in inventing the venture capital firm crucial to the growth of Route 128 and Silicon Valley.</td>
</tr>
<tr>
<td>4</td>
<td><strong>A recursive effect of Triple Helix networks both on the spirals from which they emerged and on the larger society.</strong> One effect is on science itself. The capitalization of knowledge has displaced disinterestedness, the expectation that scientific knowledge would be freely distributed, with researchers taking their rewards solely in recognition from their peers (Merton, 1973). This new norm has arisen from the practices of industrial science, an internal entrepreneurial dynamic within academia, and from government policies. The capitalization of knowledge transforms both the way academic scientists view the results of their research and the role of the university in relation to industry and government.</td>
</tr>
</tbody>
</table>

(Etzkowitz, 2003)
**Wilder Collaboration Factors**

Mattessich et al. (2001) made a significant contribution through their review of the literature and meta-analysis of factors for successful community collaboration by developing the twenty factors of the WCFI that influenced the success of collaborations formed by nonprofit organizations, government agencies, and other organizations. The twenty factors were grouped into six categories that influenced success: environment, membership characteristics, process and structure, communication, purpose, and resources. A summary of the WCFI categories and factors are shown in Table 3.
Table 3. Factors Influencing the Success of Collaboration

<table>
<thead>
<tr>
<th>Category</th>
<th>Factors</th>
</tr>
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<tbody>
<tr>
<td>1. Factors related to the Environment</td>
<td><strong>A. History of collaboration or cooperation in the community</strong></td>
</tr>
<tr>
<td></td>
<td>A history of collaboration or cooperation exists in the community and offers the potential collaborative partners an understanding of the roles and expectations required in collaboration and enables them to trust the process.</td>
</tr>
<tr>
<td></td>
<td><strong>B. Collaborative group seen as a legitimate leader in the community</strong></td>
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<td></td>
<td>The collaborative group (and, by implication, the agencies in the group) is perceived within the community as reliable and competent – at least related to the goals and activities it intends to accomplish.</td>
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<td><strong>C. Favorable political and social climate</strong></td>
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<td>Political leaders, opinion-makers, persons who control resources, and the general public support (or at least do not oppose) the mission of the collaborative group.</td>
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<td>2. Factors related to Membership Characteristics</td>
<td><strong>A. Mutual respect, understanding, and trust</strong></td>
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<td>Members of the collaborative group share an understanding and respect for each other and their respective organizations: how they operate, their cultural norms and values, their limitations, and their expectations.</td>
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<td><strong>B. Appropriate cross section of members</strong></td>
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<td>To the extent that they are needed, the collaborative group includes representatives from each segment of the community who will be affected by its activities.</td>
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<td><strong>C. Members see collaboration as in their self-interest</strong></td>
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<td>Collaborating partners believe that they will benefit from their involvement in the collaboration and that the advantages of membership will offset costs such as loss of autonomy and turf.</td>
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<td><strong>D. Ability to compromise</strong></td>
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<td>Collaborating partners are able to compromise, since the many decisions within a collaborative effort cannot possibly fit the preferences of every member perfectly.</td>
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</table>
| 3. Factors related to **Process and Structure** | **A. Members share a stake in both process and outcome**  
Members of a collaborative group feel "ownership" of both the way the group works and the results or products of its work. |
|-----------------------------------------------|-------------------------------------------------------------------------------------------------|
|                                               | **B. Multiple layers of participation**  
Every level (upper management, middle management, operations) within each partner organization has at least some representation and ongoing involvement in the collaborative initiative. |
|                                               | **C. Flexibility**  
The collaborative group remains open to varied ways of organizing itself and accomplishing its work. |
|                                               | **D. Development of clear roles and policy guidelines**  
The collaborating partners clearly understand their roles, rights, and responsibilities, and they understand how to carry out those responsibilities. |
|                                               | **E. Adaptability**  
The collaborative group has the ability to sustain itself in the midst of major challenges, even if it needs to change some major goals, members, etc., in order to deal with changing conditions. |
|                                               | **F. Appropriate pace of development**  
The structure, resources, and activities of the collaborative group change over time to meet the needs of the group without overwhelming its capacity, at each point throughout the initiative. |
| 4. Factors related to **Communication**        | **A. Open and frequent communication**  
Collaborative group members interact often, update one another, discuss issues openly, and convey all necessary information to one another and to people outside the group. |
|                                               | **B. Established informal relationships and communication links**  
In addition to formal channels of communication, members establish personal connections – producing a better, more informed, and cohesive group working on a common project. |
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<tr>
<th>5. Factors related to Purpose</th>
<th>A. Concrete, attainable goals and objectives</th>
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<td>Goals and objectives of the collaborative group are clear to all partners, and can realistically be attained.</td>
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<td>B. Shared vision</td>
<td>Collaborating partners have the same vision, with clearly agreed-upon mission, objectives, and strategy. The shared vision may exist at the outset of collaboration, or the partners may develop a vision as they work together.</td>
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<tr>
<td>C. Unique purpose</td>
<td>The mission and goals, or approach, of the collaborative group differ, at least in part, from the mission and goals, or approach, of the member organizations.</td>
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<tr>
<th>6. Factors related to Resources</th>
<th>A. Sufficient funds, staff, materials, and time</th>
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<td>The collaborative group has an adequate, consistent financial base, along with the staff and materials needed to support its operations. It allows sufficient time to achieve its goals and includes time to nurture the collaboration.</td>
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<tr>
<td>B. Skilled leadership</td>
<td>The individual who provides leadership for the collaborative group has organizing and interpersonal skills, and carries out the role with fairness. Because of these characteristics (and others), the leader is granted respect or “legitimacy” by the collaborative partners.</td>
</tr>
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(Mattessich et al., 2001)

According to Mattessich et al. (2001), the twenty factors of the WCFI were derived from research conducted over a decade. The first series of this research was conducted in 1992 and examined 133 studies related to collaboration. This initial examination of the literature on collaboration then focused on eighteen valid, relevant research studies that identified nineteen factors that the studies reported as influencing the success of collaboration. In 2000, another examination of 281 studies related to collaboration was conducted. From this exploration of the literature, twenty-two valid and relevant studies that confirmed, contradicted, or added to the
information presented in the first series of this research were used to identify twenty factors that influenced the success of collaborations formed by nonprofit organizations, government agencies and other organizations, including business organizations.

**Explanation of the Factors.** The WCFI factors were grouped into six categories that encompassed factors relating to the environment, membership characteristics, process and structure, communication, purpose, and resources. According to Mattessich et al. (2001), the factors were organized into categories for ease of presentation, discussion, and use. There was no research significance to the category groupings or to their names.

The first three factors of the WCFI were related to the environment, including characteristics consisting of geographic location and social context, where groups may be able to influence but not control these elements (Mattessich et al., 2001). A history of collaboration and cooperation was one of the factors. Abbott, Jordan, and Murtaza (1995) found that having a history of collaboration was a significant factor in successful collaboration among organizations. This perspective offered collaborating groups a frame of reference and understanding of roles and expectations of the collaborative process. A second factor, the collaborative group as a legitimate leader in the community, was about the perception of reliability and competence of the group related to the goals and activities of the collaborative effort. The poor reputation of a group could become a restraining force on a collaborative alliance or effort (Sharfman, Gray, & Yan, 1991). A favorable political and social climate was a third factor that placed an importance on stakeholder engagement and participation on building and sustaining collaborative efforts.

Factors relating to membership characteristics consisted of skills, attitudes, and opinions of the individuals and groups involved in collaborative efforts as well as the capacity and culture
of collaborative groups (Mattessich et al., 2001). Mutual respect, understanding, and trust was the first of the factors in this group. Mutual trust and respect was required to develop a collaborative process and to reach consensus (Cosner, 2009; Tapper, Kleinman, & Nakashian, 1997; Taylor & Gilliam, 2011). Furthermore, the level of trust among collaborative partners was positively correlated with innovation performance and knowledge transfer (Bstieler, Hemmert, & Barczak, 2015), which had implications for the productivity and sustainability of a collaborative effort. Another factor was the ability of members of a collaborative effort to see collaboration as in their self-interest. Members of a collaborative process should realize benefit from their involvement in a collaborative effort. Mattessich et al. (2001) posited that incentives for individual organizations to get involved and stay involved should be built into collaborative efforts, and those incentives should be transparent and monitored to evaluate whether or not they continued to motivate collaboration. The final factor relating to membership characteristics was the ability to compromise. It was unlikely that the goals and preferences of all members of a collaborative effort were identical. Compromise and the ability to seek common ground was an obvious characteristic of any collaborative effort.

The next six factors were related to process and structure. This group of factors included the management, decision making, and operational systems of the collaborative process (Mattessich et al., 2001). For the first factor, members shared a stake in both process and outcome, and the second factor, multiple layers of participation, addressed stakeholder engagement. The opportunity for representatives of partner organizations to participate and become involved in a collaborative effort created multiple levels of participation and enabled acceptance and buy in (Yukl, 2013). Flexibility was the third factor in this category and accounted for the openness of the collaborative group to organize itself and approach its work.
Development of clear roles and policy guidelines was a factor that addressed the importance how collaborating partners clearly understood their roles, rights, and responsibilities as well as their understanding on how to execute those responsibilities (Mattessich et al., 2001). Competing demands from a collaborating partner’s organization could interfere with the demands of the collaborative effort. Adaptability, or the ability of the collaborative group to sustain itself in the midst of changes, was the fifth factor in this group. According to Mattessich et al. (2001), adaptability was different from the factor of flexibility, which related to means. Adaptability related to ends like the ability of the collaborative group to adjust its vision, goal, or philosophies as a result of new knowledge or conditions. Appropriate pace of development was the final factor in this category, which described the importance of structure and resources to maintain the capacity of the collaborative effort as it progresses over time.

There were two factors related to the category of communication: open and frequent communication and established informal relationships and communication links. Mattessich et al. (2001) described the channels used by collaborative partners to send and receive information, keep one another informed, and convey opinions to influence the actions of the collaborative effort. This included structured formal channels as well as informal, personal connections to inform and build a cohesive group. Rubin (1998) found that collaboration was enhanced by the existence of long-standing personal connections among individuals involved in a collaborative effort.

According to Mattessich et al. (2001), there were three factors related to purpose or the reasons for the development of a collaborative effort. Concrete, attainable goals and objectives was a factor that described the clarity and realistic possibility of goal attainment. The
formulation of clear, attainable goals was a foundational requirement for any initiative, particularly collaborative efforts. Shared vision and unique purpose were two additional factors related to purpose. Collaborative partners in successful collaborative efforts shared the same vision with respect to the collaborative effort; however, the mission or approach of the collaborative group differed from the mission or approach of the members of the collaborative effort (Mattessich et al., 2001). In their study of factors related to successful collaboration in community-campus partnerships, Hubbell and Burman (2006) found that a clear mission and a mutual commitment to a community need was fundamental to a successful collaborative effort.

The final category of factors were related to resources. Mattessich et al. (2001) posited that the collaborative group must have an adequate and consistent financial base with sufficient materials, staff, and time to support its operations. Finally, skilled leadership was the final factor and referred to the organizing and interpersonal skills of the leader or leaders in a collaborative effort. The literature was robust on the importance of leadership in facilitating collaboration to change the status quo (Bennis, 2007; Kocolowski, 2010; Kouzes & Posner, 2007; Parker, 1990; Spillane, 2005).

**Definition of Terms**

The following is a list of terms used in this study.

**Collaboration** – A well-defined and mutually beneficial relationship entered into by two or more organizations to achieve common goals. The relationship includes a commitment to mutual relationships and goals, a cooperatively developed structure and shared responsibility, mutual authority and accountability for success, and the sharing of resources and rewards (Mattessich et al., 2001).
**Collaborative partners** – The individuals representing collaborating organizations or the collaborating organizations that engage together in collaboration (Mattessich et al., 2001).

**Regional economic development** – Process by which by policy makers or community-based organizations engage to stimulate or maintain business activity or employment to promote the economic well-being and the standard of living of certain communities or regions (Blakely, 1994).

**Tripartite collaboration** – Describes collaboration among universities, industry, and government to enhance regional economic development (Etzkowitz, 2012; Warshaw & Hearn, 2014).

**Triple helix model** – This is a commonly used framework to understand the process of tripartite collaboration and the emergence of tripartite collaborations to enhance innovation and development at the regional level (Etzkowitz, 1997, 2003).

**Wilder Collaboration Factors Inventory (WCFI)** – This is a framework for understanding community collaboration through twenty factors (also referred to as Wilder Collaboration Factors) that influenced the success of a collaboration (Mattessich et al., 2001).

**Summary**

This single case study examined university collaboration in regional economic development. Universities have the potential to drive regional economic development through a tripartite collaboration with policy makers and industry (Etzkowitz, 2012; Warshaw & Hearn, 2014). Since mid-range universities lack the critical mass of larger research institutions, they must be more selective and strategic as they develop a portfolio of industry and government...
linkages relevant to the scope of activities and the types of firms with which they interact (Wright et al., 2008). The purpose of this doctoral thesis was to explore how mid-range universities collaborate with industry and government to facilitate regional economic development while also enhancing their own sustainability. This study addressed the following research question: How do leaders from a mid-range university, industry, and government describe collaborative efforts to enhance regional economic development?

A conceptual framework for understanding university collaboration in regional economic development was used to address the research question by utilizing two theoretical frameworks. The primary theoretical framework guiding this dissertation research was a triple helix model of university-industry-government interaction that focused on the emergence of tripartite collaboration (Etzkowitz, 1997, 2003). This model was used to understand permeability among the sectors to advance innovation and economic development at the regional level. Supplementing the line of inquiry was the Wilder Collaboration Factors, a framework for understanding community collaboration that involved 20 elements that influence success of a collaboration (Mattessich et al., 2001). This framework was used to understand the process of effective tripartite collaboration.

The remainder of this study is organized as follows. Chapter two provides a review of the literature, encompassing the history and impact of higher education on regional economic development as well as collaboration among organizations to augment impact. Chapter three describes the single instrumental case study methodology that was used in this study, focusing on Point Park University in Pittsburgh, Pennsylvania as a mid-range university collaborating in regional economic development. Chapter four identifies the findings of the study, including four
major themes that addressed the research question. Finally, chapter five offers a discussion of the findings, including conclusions derived from this study, implications of this research for further research and practice, and a new model for university collaboration in regional economic development.
Chapter 2: Literature Review

As states and regions face declining tax bases and federal investment, the importance of higher education as a catalyst to enhance economic development or the economic vitality of regions and states becomes essential. State and local governments are relying more on higher education to impact economic development through academic entrepreneurship and university-industry collaboration. Academic entrepreneurship encompasses start-up ventures and the commercialization of university-influenced intellectual property. University-industry collaboration includes direct and indirect effects on local innovation, translational research, technical assistance to firms, workforce development, employment, and other impacts on the university supply.

Colleges and universities play a significant role in contributing to the economic health and well-being of their communities. As public and private investors leverage economic development through university activities, the effectiveness and efficiencies of these initiatives become important as states strive to improve competitiveness. Higher education institutions must become more effective in their ability to impact economic vitality and also be able to demonstrate impact to remain relevant civic partners in their regions.

This literature review examines higher education and its impact on economic development. The role of higher education institutions, particularly research and doctoral-degree granting universities, as actors impacting regional economic development were explored. In this review, two types of economic development activity were examined: academic entrepreneurship and university-industry collaboration. Academic entrepreneurship includes direct and indirect spinoff activities from the formation of firms and the commercialization of university-influenced
intellectual property. University-industry collaboration includes direct and indirect effects on local innovation, translational research, technical assistance to firms, workforce development, employment, and other impacts on the university supply chain. The concept of impact was investigated to determine higher education’s effectiveness in improving the economic vitality of a region through economic development activities. The importance of demonstrating impact and the complexities associated with measuring impact was explored in this review.

Higher education institutions that can influence economic development in an effective and efficient manner will become relevant and critical civic partners in their regions and states. With much at stake for universities striving to remain relevant civic partners and for government and other regional investors motivated to gain returns on their investments in economic development, this literature review addressed an important question: How do leaders from a mid-range university, industry, and government describe collaborative efforts to enhance regional economic development? The exploration of this question identified and described the elements of effective university-industry-government collaboration that could enable some universities to be more impactful in advancing regional economic development.

This literature review explored four streams of thought around the proposed problem statement. First, the history of higher education’s influence on economic development was explored, particularly with respect to watershed federal legislation that served as a catalyst for higher education’s role in regional economic development. The second stream examined roles by which higher education impacts regional economic development. The third stream explored collaboration theory among organizations as a strategy to achieve initiatives. The final stream investigated the need for measurement of impact of higher education’s role on economic
development as well as the complexities and challenges associated with the process of measurement.

**Historical Background**

Economic development in the United States has been impacted by higher education for some time. From the nation’s founding through the Civil War, there was a debate among the nation’s leaders over how to best produce revenue for the federal government. Should the federal government sell land to receive direct revenue into the treasury, or should land be donated to encourage settlement to yield greater indirect revenue? In 1858, Justin Morrill, a representative from Vermont, introduced the idea of using federal lands to establish and operate colleges in agriculture and the mechanical arts to protect the resource of agriculture by promoting education and practices to sustain agriculture as an essential industry to the prosperity of the nation (Key, 1996).

The Morrill Act of 1862 was an element of an important federal economic policy that shifted from the sale of public lands for revenue generation to a policy of donating public lands as a catalyst to generate other sources of revenue to promote prosperity of the nation or economic development. Even though many historians claim that the federal government was reacting to a growing movement of educational reform to provide practical education and to democratize higher education, Key (1996) posited that economics was the primary political motivation behind the establishment of American land-grant universities. Regardless of the motivation to pass the Morrill Act, the legislation was a reflection of the shifting industrial structure in the U.S. economy at that time and the need for a prepared workforce to meet industry demand (Mack &
Stolarick, 2014). The Morrill Act ushered in the importance of practical, utilitarian education and access to the public (Thelin, 2011).

The Morrill Act changed the landscape and dynamic of higher education in the United States. While public funding of institutions of higher education and the notion of asserting some form of public control or influence over institutions had been occurring well before the Morrill Act of 1862 (Chase, 1931), the legislation accelerated public investment and funding in universities. The Morrill Act was impactful and pioneering because it made education more accessible. This was a major move from models in England and throughout Europe where higher education was reserved for the elite. According to Martin (2001), the Morrill Act reflected the philosophy that economic development could be enhanced if the citizenry had greater access to higher education, hence the legislation’s charge of encouraging both liberal and practical education, particularly in the fields of agriculture, mechanical, mining, and military (Thelin, 2011)

Mack and Stolarick (2014) studied the impact of land-grant institutions and concluded that while it took approximately sixty years for land-grant institutions to have positive economic benefit on their communities, land-grant universities did impact their local communities, and their economic value has been sustained for over eighty years. Universities in the United States have had a significant role in contributing to the economic health and well-being of their communities since the inception of the Morrill Act. Mack and Stolarick (2014) evaluated the potential impacts of land-grant institutions on local communities since the founding of these institutions by comparing economic and demographic changes in host counties of land-grant institutions to similar counties without a land-grant institution. The authors identified over thirty
variables comparing land-grant counties to comparator counties. The investigation found that
land-grant counties were younger in average age, had higher costs of living, higher median
household and per capita incomes, more people born in a different state, a higher foreign-born
population, and had greater patenting activity.

The U.S. federal government has been a significant investor and catalyst in research and
development conducted in U.S. colleges and universities. There has been a long history of
federal policy development to deal with innovations financed by public funds and how to ensure
the public benefits from these investments. Lerner (2004) described the evolution of debate and
legislation surrounding the public funding of academic-generated research and development and
ownership. Two important pieces of legislation affirm and strengthen higher education’s role in
impacting economic development. The Bayh-Dole Act of 1980 enabled academic and nonprofit
institutions to retain title of patents derived from federally funded research and development. At
the same time, the Stevenson-Wydler Technology Innovation Act of 1980 made technology
transfer a mission of federal laboratories.

While federal legislation and policy have positioned higher education institutions as
actors and civic partners to influence and impact regional economic development, the
appropriate role that institutions took drove activity and the effectiveness of impact. The role and
activity of research and doctoral-degree granting institutions was essential to impacting
economic vitality.

**Impact on Economic Development**

Higher education has played a major role to positively impact the quality of life and
economic growth and development in the regional economies in which they reside. Bagchi-Sen
and Smith (2012) claimed that universities impact regional economies in two primary areas: academic entrepreneurship and university-industry collaboration. Academic entrepreneurship includes direct and indirect spinoff activities from the formation of firms and the commercialization of university-influenced intellectual property. University-industry collaboration includes direct and indirect effects on local innovation, translational research, technical assistance to firms, workforce development, employment, and other impacts on the university supply chain. While many institutions impact their regional economies in one or more subsets of these primary areas, research and doctoral-degree granting universities typically span the continuums within academic entrepreneurship and university-industry collaboration.

**Academic Entrepreneurship**

Research universities play a role in academic entrepreneurship that includes firm creation and commercialization of intellectual property. University research activity produces direct and indirect spillover effects into the regional economies where the university is situated and reinforces a region’s capacity to innovate (Feldman & Florida, 1994). The proximity of a research university to its regional economy may facilitate communication, networking, and the dissemination of knowledge to that community and its regional industry.

Colombo et al. (2010) found that universities producing high-quality scientific research had a positive impact on the creation of academic start-ups, especially by academic personnel. In addition, higher quality research conducted by a university tends to positively impact the growth of academic start-ups in that particular region. On the converse, Colombo et al. (2010) learned that the commercial orientation of university research may have a negative influence on growth of local companies. If a university had a commercial philosophy with respect to its research and
intellectual property creation, it may have actually reduced the knowledge available to local firms for consumption and exploitation, reducing the growth of academic start-ups. Colombo et al. (2010) further concluded that, because academic start-ups were comprised of academic personnel, they were better positioned than other new technology-based firms to absorb and exploit university-generated knowledge and research.

According to Furman and MacGarvie (2007), existing empirical studies of contemporary university-industry research linkages suggested that university research had a significant and geographically-focused effect on innovation. Furnam and MacGarvie’s (2007) examination of the pharmaceutical industry showed that universities play an important role in the emergence of industrial research, particularly in geographic proximity to firms. Furthermore, they found that research and development laboratories located near universities benefited from access to academic scientists and graduates. Furman and MacGarvie (2007) also demonstrated that the research needs of large firms played an instrumental role in the growth and evolution of a few universities.

Warshaw and Hearn (2014) found that states appeared to independently pursue research and development and science and technology initiatives in a competitive manner domestically, rather than globally. Leveraging academic research and development and science and technology research has been entwined with regional and national competitiveness. In order for states to pursue these initiatives to harness the research and science outputs of universities, collaboration and partnerships must be utilized to bring government, higher education, and industry together.
University-Industry Collaboration

In order for higher education to have impact on economic development, conditions within a particular region need to be in place to foster collaboration, activity, and results. Collaboration between higher education institutions and industry impacts regional economic development both directly and indirectly in areas like innovation, translational research, technical assistance to firms, workforce development, employment, and other impacts on the university supply chain like the attraction of students from outside of a university’s region.

Growth and renewal. Etzkowitz and Dzisah (2008) analyzed the development activities that have occurred in Boston and Silicon Valley and identified common features that led to growth and renewal of these regions. These regions had many differences, but the common features included a concentration of technical human resources, presence of an entrepreneurial university, availability of seed capital, a government push in research and development spending coupled with a government pull in the procurement of advanced technology, and a recognition of the region to renew its economic base (Etzkowitz & Dzisah, 2008).

In developing a common model for knowledge-based regional economic development, it was found that few regions had the ability to self-renew after a period of growth and sustainability. Etzkowitz and Dzisah (2008) pointed to the presence or absence of two overlapping capacities, growth and renewal, as core to regional high-tech development. Growth and renewal can be facilitated by creating formal and informal mechanisms and networks to enable the common features as described earlier to thrive. Many of these mechanisms and networks are centered on the concept of collaboration, in providing structures to facilitate collaboration and appreciating diversity and flexibility in the approach of partners.
In times of economic downturn or hardship, many states have developed strategies to improve quality of life or economic development through the improvement of regions within a particular state. By focusing economic development efforts at the regional level, local governments, industry, and educational institutions can work collaboratively to identify and accentuate assets of competitive and comparative advantage to build greater capacity and competitiveness.

**Innovation.** A triple helix model is commonly used as a framework to describe innovation at the regional level among universities, industry, and government. Etzkowitz (1997, 2003) found that a systematic interaction among university, industry, and government created a dynamic overlay of collaboration that created its own dynamics and resulted in the development of a knowledge-based economy. Etzkowitz (2003) maintained that the triple helix or the tripartite collaboration among university, industry, and government emerged and matured over time while the university continued its traditional roles of creating and disseminating knowledge while taking on a new role of promoting innovation.

Etzkowitz (2012) identified the importance of permeability among university-industry-government boundaries after studying the economic development impact from the university collaborations of Massachusetts Institute of Technology and Boston, Stanford and Silicon Valley, Research Triangle and North Carolina, and Newcastle University and Northeast United Kingdom. Permeability in university boundaries was an essential condition to creating an entrepreneurial university that was the driving force of the most successful innovation regions (Etzkowitz, 2012). While many drivers of innovation vary and are implemented by situation and need, Etzkowitz (2012) posited that there were some common characteristics of innovation
initiatives, such as boundary permeability, that can be positively influenced by specific measures.

Collaboration is critical to successful economic development, and universities often drive economic development initiatives in a tripartite collaboration with policy makers and industry (Warshaw & Hearn, 2014). Because policy makers influence university research and development and technology through incentives, Warshaw and Hearn (2014) suggested that they have a slight upper hand in this tripartite collaboration. Knowing that policy makers have the power to influence the process through funding mechanisms and incentives, Warshaw and Hearn (2014) advised that higher education administrators must strategically allocate and align resources and competencies to remain relevant and a good source of leverage for government and industry. As long as university partners continue to create economic benefit, they will likely remain worthy of public and private investment.

An example of regional collaboration to build regional economic growth and innovation capacity occurred in northeast Wisconsin, a region later deemed the “New North,” in 2001 where thirteen postsecondary public education institutions developed a shared vision and agenda for action (Rafn, 2012). This consortium, the Northeast Wisconsin Education Resource Alliance, consisted of two comprehensive universities, four technical colleges, five associate degree-granting campuses, a private college, and a university extension unit. The consortium’s vision was to become a national leader in collaborating to serve their region with quality seamless education; provide essential educational resources for communities, businesses, and government; and drive regional and state economic development (Rafn, 2012).
The Northeast Wisconsin Education Resource Alliance collaboration exceeded expectations and led to numerous strategies and outcomes that have advanced access to education, increased the growth of small businesses, and improved the sustainability of incumbent businesses in the region. The work of this higher education consortium inspired other public and private sector investor support to continue to enhance the region’s innovation capacity (Rafn, 2012).

University collaboration with industry and also with government can be hindered by factors that are inherent in collaboration among organizations. According to Hixham and Vangen (2000), many collaborative efforts fail due to an inability of the collaborating organizations to agree on goals for the collaboration. A lack of mutual understanding and trust between universities and industry, coupled with a lack of clarity of institutional frameworks, could hinder university collaboration (Moeliodihardjo, Soemardi, Brodjonegoro, & Hatakenaka, 2012). Universities, industry, and government operate within different organizational structures, procedures, and cultures. Ambiguity, complexity, and dynamics in membership structure are significant to each of these areas and organization types (Huxham & Vangen, 2000).

Universities impact regional economic development through activities involving academic entrepreneurship and university-industry collaboration. The level and magnitude of the role of the university varies according to activity and the degree of collaboration with other civic partners. To remain relevant actors in regional economic development, universities must be able to demonstrate their impact as well as the magnitude of that impact. The process of measuring impact is critical to understanding the effectiveness of the key question posed in this research, which is how leaders describe collaborative efforts to enhance regional economic development.
Collaboration

Collaboration among organizations in a community or region to address social issues like economic development has intensified over the years. There is an increasing need and belief that major societal issues are complex and cannot be tackled by a single entity acting alone (Gajda, 2004; Huxham & Vangen, 1996; Huxham & Vangen, 2000; Mattessich et al., 2001). Since major societal issues have ramifications for many aspects of society, they inherently become multi-organizational, requiring collaboration to address them.

Collaboration among industry, public, and educational agencies has been championed as a potent strategy to achieve a vision otherwise not possible when independent entities work alone (Gajda, 2004). However, working across organizational boundaries through collaborative arrangements has been one of the most difficult activities for leaders and managers of organizations to accomplish (Huxham & Vangen, 1996). Although collaboration has the capacity to engage and connect fragmented systems to address multifaceted societal issues, the definition of collaboration is often overused, too theoretical, and inconsistent (Gajda, 2004). Mattessich et al. (2001) defined collaboration as “a mutually beneficial and well-defined relationship entered into by two or more organizations to achieve common goals. The relationship includes a commitment to mutual relationships and goals, a jointly developed structure and shared responsibility, mutual authority and accountability for success, and a sharing of resources and rewards” (p. 4). This definition provides a clear and concise framework from which to analyze this topic.

According to Austin, Hesselbein, and Whitehead (2010), cross-sector collaboration has been occurring at a fast pace stemming from the rapid, structural, and likely irreversible changes
being generated by powerful political, economic, and social forces. The authors pointed to the current major rethinking of the role and size of the federal government and the new norm that society can no longer look to the federal government as the primary problem solver. The shifting of responsibilities have placed increasing demands on the nonprofit and business sectors to fill the void, pushing them toward collaboration. As the magnitude and complexity of social and economic issues grow, these forces were creating an environment in which collaboration was becoming the rule rather than the exception (Austin et al., 2010). Regional economic development is a prime example of this phenomenon, where government is collaborating with universities and industry to address regional issues.

Relationships among stakeholders in a region and their ability to build connections toward a shared vision for change drove collaborative initiatives (Gajda, 2004; Huxham & Vangen, 1996; Huxham & Vangen, 2000; Mattessich et al., 2001; Potapchuk & Crocker Jr., 1999). The problem-solving knowledge possessed by citizens of a region and their attitudes that guide civic action was first defined as civic capital (Mcgregor & Sundeen, 1984). Potapchuk and Crocker (1999) expanded civic capital to encompass the collective civic capacities of a community and the currency supporting collaborative strategies that pursue innovative programs and forge new relationships among stakeholders. They posited that civic capital enables communities and regions to develop collaborative strategies. As these collaborative strategies were implemented by collaborative partners in a region, the amount of civic capital increased when the regional collaborative partners shared and were motivated by a compelling vision of the future, had deep reservoirs of trust that enabled inclusive and collaborative decision making, created an infrastructure of organizations and initiatives that developed their capacity to deepen
their work, and engaged the public to build political will that drove regional transformation forward (Potapchuk & Crocker Jr., 1999).

The development and assessment of intentional, inter-organizational collaborative initiatives can be improved by utilizing collaboration theory (Gajda, 2004). Mattessich et al.’s (2001) twenty factors that influence success of collaborations can be used as to inventory or assess strengths and weaknesses of a collaboration with respect to the factors that influence collaborative success. The WCFI can be applied any time before or during a collaborative initiative’s life to evaluate effectiveness. According to Gajda (2004), a formative evaluation process focused on the development of collaboration produced useful information for use by collaborative leaders and stakeholders to make decisions that can advance a collaborative initiative. This information also enabled collaboration stakeholders to capture and understand both qualitative and quantitative data on the growth of a collaborative initiative over time. Gajda (2004) contended that the utilization of collaboration theory along with formative assessment of the collaboration initiative allowed collaboration to be understood as both an intervention and as an outcome.

Through strategic alliances predicated on collaboration, inter-organizational dialogue can occur, resources can be shared or jointly allocated, common strategies can be developed, and initiatives can be sustained (Austin, 2000; Gajda, 2004). Collaboration theory is useful in understanding how universities collaborate with industry and government to impact regional economic development. The effectiveness and impact of collaboration can also be enhanced through the utilization of collaboration theory, particularly through frameworks that can provide a lens for formative assessment of the collaboration process and outcomes.
Measurement of Impact

Although the research is consistent regarding the role and impact of higher education on economic development, measurement of impact is not consistent. There are many reasons for this inconsistency. Higher education institutions come in all shapes and sizes. They vary by mission, size, constituent base, geography, and influence by government and industry. For the purposes of this study, higher education institutions span the continuum from public community colleges, which are often engaged in regional workforce development initiatives, to public and private nonprofit colleges and universities that engage in academic entrepreneurship to all types of collaborative activities with industry and government. In this environment, measurement and the ability to establish standard benchmarks or metrics becomes difficult if not ultimately impossible. This review will conclude with a fourth literature stream reviewing the measurement of impact.

There has been increased interest in measuring the impact of economic development initiatives. As a result of several economic downturns over the past two decades, state governments have experienced a decline in funding from the federal government. This has caused an increased reliance on economic development to enhance the competitiveness of states through their regions. As states and regions invest more resources on activities to improve economic vitality, the public is requiring accountability. Measurement of program performance and impact is necessary to show justification. Public and private investors are requiring higher education institutions to measure and demonstrate impact.

Drucker and Goldstein (2007) provided an overview of several major research designs to explore the influence of higher education on economic development. They reviewed four major
research designs that were typically used to assess regional economic development impact: single-university impact studies, surveys, knowledge production functions, and cross-sectional and quasi-experimental designs. Single-university impact studies typically attempted to measure direct and indirect impacts of university activities like employment, spending, and investments. Survey research provided for a modest ability to collect and generalize data beyond a single institution or region; however, survey questions directed toward attribution often suffered from validity threats. Production functions and cross-sectional analyses have shown more promise in addressing attribution, but they were often limited by measurement and constraints of data availability. The study showed cross-sectional and quasi-experimental research designs to be less restrictive because they did not rely on sound theories to guide the function of the design, and they attempted to mimic experimental conditions in the field which was often unrealistic and not utilized as frequently in the assessment of regional economic impact (Drucker & Goldstein, 2007).

The measurement of economic impact is complex. Technology transfer is a challenging area to measure economic impact from higher education. It is difficult to measure the effectiveness and efficiency of university activities to license patents into commercially viable products and services that eventually lead to the creation of new firms and jobs. Kurman (2011) developed index-based measures of university technology transfer activity. These metrics can serve as inputs into larger economic impact models. Three indexes were created: a commercialization health index to measure the distribution of revenue per patent, a job created health index to measure the distribution of jobs per new university startup, and a licensing speed health index to measure the time from invention disclosure to license.
Since universities transmit both knowledge and research, they contribute to the long-term benefits of regions in which they are located, but they also contribute in the short-term by providing investments in goods and services, employment, and other direct and indirect ways. Pastor, Perez, and Fernandez (2013) considered uncertainty and utilized a methodology based on Monte Carlo simulations to introduce stochastic elements in calculating economic impact as an approach to measure local impact of universities. In this approach, Pastor et al. (2013) made the case that multipliers can vary significantly in economic impact modeling.

Siegfried, Sanderson, and McHenry (2007) analyzed the approaches and limitations associated with measuring the impact of higher education on economic development by suggesting two reforms to improve the accuracy and transparency of economic impact studies. The literature was extensive with limitations and difficulties associated with double-counting impacts, defining the local area of study, and overstatement of spillover effects. Presentation was one such reform proposed by the authors. According to Siegfried et al. (2007), many impact study statements are meaningless when they claim returns of investment at higher magnitudes than on other investments. Studies should adhere to the focus and unit of analysis and not veer off. Additionally, impacts should relate only to the issue at hand and nothing else. The geographic area in studies should be clearly identified, and multipliers and other variables should relate specifically to the area of study (Siegfried et al., 2007).

Higher education governing boards, industry, and policy makers have been requiring colleges and universities to become more proactive and thoughtful in establishing goals and outcomes for economic development initiatives (Gracie, 1998). One study presented the efforts of a state to measure impact of workforce and economic development activities of higher
education institutions. Gracie (1998) demonstrated how the establishment of critical success factors and metrics enabled higher education providers as well as public and private investors to manage performance and evaluate outcomes. This describes how North Carolina instituted a performance management system for its statewide workforce system. Higher education institutions identified critical success factors, outcomes, and metrics for workforce development programs. The measurement system provided for an annual review process, common data and reporting, and follow-up systems.

The measurement of a university’s impact on economic development has become more important over the past two decades. As states and regions experience declines in federal resources, leveraging higher education to impact economic vitality is critical. Public and private investors are requiring accountability and the ability to measure performance and outcomes of their investments in economic development. Higher education institutions must become more sophisticated and vigilant in their approach to measuring and reporting impact. Measurement of program performance and impact is necessary to show justification.

**Summary**

The literature was consistent and demonstrated that higher education impacts economic development. Universities in the United States have played a significant role in contributing to the economic health and well-being of their communities. The impacts on regional economic development and their magnitude vary by university mission, community need, and institutional effectiveness.

Regional economies with resident universities benefited from academic entrepreneurship or the direct and indirect spinoff activities from the formation of firms and the commercialization
of intellectual property and university-industry collaboration (Bagchi-Sen & Smith, 2012). While specific examples and types of economic impact have been examined in the literature, there have been few studies focusing on why some universities are more effective in realizing positive impact on their communities than others. Collaboration among university, government, and industry stakeholders was found to be a critical element to effective impact (Etzkowitz, 2012; Rafn, 2012; Warshaw & Hearn, 2014). The ability to measure and evaluate performance and the impact of economic development initiatives is becoming increasingly important to public and private investors. The literature exposed a need to increase the sophistication and accuracy of measuring impact as well as reporting impact.

If higher education institutions have been instrumental partners in improving the quality of life of the regions in which they are situated and if there is little known about drivers to effective economic impact of university activity on a regional economy, then more should be known about how universities collaborate to facilitate regional economic development and what are the factors of successful collaboration that may enable some universities to be more effective in creating positive impact for their regions than others.

The purpose of this research was to understand the process of collaboration of mid-range universities with industry and government and to determine if there were critical drivers to creating economic impact from university-driven academic entrepreneurship and university-industry collaboration. Specifically, this research explored how leaders from a mid-range university, industry, and government described collaborative efforts to enhance regional economic development. The existence of critical drivers to create collaborative efforts can help to explain why some universities are more effective in creating impact for their communities.
than others. This issue is becoming an increasingly important issue to public and private investors. The identification of drivers or elements of effective university-driven economic development will be of great importance to universities that must demonstrate value to their various constituencies. The ability to measure and report impact will facilitate the development of the value proposition. Higher education institutions that can impact economic development in an effective and efficient manner will become relevant and critical civic partners in their regions and states.

Chapter three describes the methodological approach of this single instrumental case study. This chapter details a hybrid analysis approach that was followed to understand how leaders of a mid-range university, industry, and government described collaborative efforts to enhance regional economic development.
Chapter 3: Methods

Universities have the potential to drive regional economic development through a tripartite collaboration with policy makers and industry (Etzkowitz, 2012; Warshaw & Hearn, 2014). Since mid-range universities lack the critical mass of larger research institutions, they must be more selective and strategic as they develop a portfolio of industry and government linkages relevant to the scope of activities and the types of firms with which they interact (Wright et al., 2008). The purpose of this doctoral thesis was to explore how leaders from a mid-range university, industry, and government described collaborative efforts to enhance regional economic development.

Research Question

To explore the process of tripartite collaboration, the primary research question driving this study is: How do leaders from a mid-range university, industry, and government describe collaborative efforts to enhance regional economic development?

Research Tradition

A single instrumental case study methodological approach was selected, focusing on university collaboration in regional economic development within a mid-range university. A case study methodological approach was selected for this research study for several reasons. Merriam (1998) suggested that case study is a particularly suitable design when there is an interest in process. According to Yin (2009), a case study design should be considered when the focus of the study is to answer ‘how’ and ‘why’ questions concerning the phenomenon of interest, which is aligned with the research question addressing process. Baxter and Jack (2008) posited that a
case study approach is useful if one wants to uncover contextual conditions. Merriam (1998) claimed that case study is an appealing design for applied fields of study, like education, where processes can be examined to bring about an understanding that can affect and perhaps improve practice.

**Philosophical Underpinnings and Overview**

Case study research is a qualitative methodology that has been widely used in social sciences research. Despite the widespread use of case study research across disciplines, the case study approach is varied, and there is rich divergence in the design and application of the case study approach (Creswell, 2013; Farquhar, 2012; Merriam, 1998; Yazan, 2015). According to Merriam (1998), a qualitative case study is an intensive, holistic description and analysis of a single instance, phenomenon, a thing, or single entity, around which there are boundaries. This definition is expanded by Stake (1978; 1994) who concurred that a case is a bounded system; however, case study research should also consider the interrelationship between phenomenon and its context, creating a basis for naturalistic generalization. Yin (2009) posited that case study research is a methodological approach to conduct inquiries into real-life settings.

There are common philosophical underpinnings of case study research. In general, case study research is a systematic inquiry into a significant or interesting event or processes in their natural context, which aims to describe and explain a phenomenon of interest (Bromley, 1990). Merriam (1998) suggested that the single, most-distinctive characteristic of case study research is the focus of the study, which is the case. A hallmark of case study research is that the issue of interest or study, intrinsically bounded within certain parameters, is considered to be important and worthy of study (Merriam, 1998; Stake, 1978; Yin, 2009). Stake (1994) contended that “a
case study is both the process of learning about the case and the product of our learning” (p. 237).

Even though there are common understandings in case study research, the variations of this approach can be leveraged to achieve different aims. According to Creswell (2013), case study approaches can be distinguished in terms of the focus of the case or the intent of the case analysis. Merriam (1998) characterized qualitative case studies as particularistic, focusing on a particular situation, program, or phenomenon; descriptive, meaning that the end product of a case study is a rich, substantive description of the phenomenon under study; or heuristic, which means that the case reveals greater understanding of a phenomenon under study. Case study research can also vary in terms of intent. Stake (1994) identified three types of studies: intrinsic, instrumental, and collective. An intrinsic case study is undertaken when one desires a better understanding of a particular case. When a case is examined to provide insight into a particular issue or concern, an instrumental case study may be used. In a collective case study, a number of cases may be studied jointly in order to inquire into a particular phenomenon, population, or condition. An instrumental study was applied in this case in order to provide insight into university collaboration in regional economic development.

There are also varied approaches in the design of case study research. Yin (2009) placed importance on the design and logical structure of case study design, including alignment of a study’s components: the study’s questions, its propositions, unit(s) of analysis, logic linking data to the propositions, and criteria for interpreting the findings. Merriam (1998) promoted a very structured, step-by-step process of designing qualitative research in a detailed fashion, including the review of the relevant literature for the development of the theoretical framework that will
guide the study. On the other hand, Stake (1994) preferred a flexible design that allowed researchers to make changes and modifications to the research approach while conducting the research.

A hybrid philosophical approach was undertaken in this study. Merriam’s (1998) structured approach of using the literature and appropriate theoretical framework was followed to initially guide the study. As the study progressed, Stake’s (1994) flexible approach was utilized to make modifications to the research approach as data provided greater insight. This pragmatic approach, incorporating a blend of inductive and deductive logic, enabled the researcher to use multiple sources of data and complex reasoning to analyze and interpret the data (Creswell, 2013).

Case study research can be instrumental in building theories and positioning theory building from case studies into the larger realm of social science research (Eisenhardt, 1989). According to Stake (1994), many social scientists have emphasized case study as a generalization of other cases, as exploration leading up to generalization-producing studies, or an early step in theory building. One caution is that an over-commitment to generalize or creating theory from a case can distract from understanding the case itself as well as its important features (1994). It should also be noted that case studies are limited by the sensitivity and integrity of the researcher since the investigator is the primary instrument of data collection and analysis (Merriam, 1998).

Context for this Study

A mid-range university was selected as the focus for this case study. This single case study focused on Point Park University in Pittsburgh, Pennsylvania. Point Park is a
comprehensive, doctoral-level university with a strong liberal arts tradition. The university enrolls over 4,000 full- and part-time students in 82 undergraduate programs, 17 master’s programs, and several doctoral programs offered through its School of Arts and Sciences, School of Business, School of Communication, and Conservatory of Performing Arts. Its students represent 45 states and 31 countries (Point Park University, 2015).

Point Park University began as a small business training college in 1933 during the height of the Great Depression, offering programs in engineering secretarial, medical secretarial, and accounting. Named for the City of Pittsburgh’s historic Point State Park, the school became Point Park Junior College in 1960 and began offering associate degrees. In 1966, the institution became Point Park College and started awarding bachelor’s degrees and was granted four-year status. The college also introduced dance and theater programs that became the foundation for the university’s current Conservatory of Performing Arts. In 2003, Point Park College achieved university status, having received authorization from the Commonwealth of Pennsylvania to become Point Park University (Point Park University, 2011). Today, Point Park has over 1,500 employees and boasts a top national program in the performing arts. Point Park is viewed in its market as a dynamic urban university with a world-class performing arts program.

Point Park University was selected for this study because it has been a driver to revitalization activities in the downtown area of the City of Pittsburgh, Pennsylvania and is the only university located in the central business district. In order to provide context for discussion of collaborative efforts among university, industry, and government leaders, three projects were described and used as a frame of reference during participant interviews. The three projects represent initiatives over time: recent past, present, and future. The Academic Village, Center for
Media Innovation, and the Pittsburgh Playhouse Theater are tangible examples of projects that were or will be pursued to enhance regional economic development and required collaborative activity among the university, industry, and government.

The Academic Village, a multi-block living and learning hub that transformed the University campus and the Downtown neighborhood, was initiated approximately seven years ago. Through this project, students, city residents, and business people interacted in a new green, urban park that unites the Market Square section of Downtown and the Cultural District. The Academic Village is viewed by many as a catalyst project for the surge of economic activity facilitated by the University.

The Center for Media Innovation opened in September 2016. This new complex is a New York City-style media facility in the heart of Downtown. The Center provides hands-on experience for students and enables them to collaborate with professionals in a laboratory for media innovation. The Center for Media Innovation is also serving as a gathering place for media professionals, representing various print, television, and radio organizations. The Center is providing opportunities for students and professionals to collaborate on media initiatives benefiting the region.

The Pittsburgh Playhouse Theater, currently under construction across the street from PNC Financial Service Group’s new world headquarters in Downtown, is a future project that will bring another theater to the Downtown Cultural District and provide programming opportunities for a proposed Center for Entertainment Management, an enterprise that will enable students and professionals to work side-by-side and collaborate on many facets of the entertainment enterprise from marketing and ticketing to stage design and performance.
Data Collection

Data was collected from multiple sources in this case study approach in order to capture the case in its entirety and complexity (Creswell, 2013; Merriam, 1998; Stake, 1994; Yin, 2009). Each source of case study evidence was associated with an assortment of data. Merriam (1998) suggested that case study research does not claim any particular methods for collecting data or data analysis. As recommended by Yin (2009), evidence or data was acquired through sources such as documentation, archival records, direct observations, participant observation, and interviews.

The research plan used in this single case study approach followed a sequencing of multiple, varied methods. First, the researcher identified a single case and determined the type and intent of the case (Creswell, 2013; Merriam, 1998; Stake, 1994; Yin, 2009). The next phase involved a document review, followed by observations and interactions in the field to gain information and context that may be useful in developing interview and other data collection protocols. This case study approach used semi-structured interviews with the participants relevant to the case, primarily leaders at the university, in industry, and in government who have been involved in regional economic development initiatives with the university.

The interviews were recorded and saved to an audio file for later transcription and analysis. A blended sample design was utilized in this study. A purposeful sampling was used to conduct interviews of representatives from each of the tripartite sectors of university, industry, and government since the researcher’s aim was to understand a process or issue (Miles, Huberman, & Saldana, 2014). Six leaders were interviewed across the three sectors. Based on information and insight provided by the initial six interviewees, three additional interviews were
conducted. Upon completion of the interviews, the audio files of the interviews were transcribed. Preparing a transcript verbatim allowed the researcher to fact check information shared and recall details often forgotten (H. J. Rubin & Rubin, 2012). To ensure accuracy and shield from bias, the interview transcripts were reviewed and approved by the participants (Creswell, 2013).

**Documents**

Documents and archival records were reviewed as a source of contextual information about events that cannot be directly observed (Boblin, Ireland, Kirkpatrick, & Robertson, 2013). According to Noor (2008), “Documentary evidence acts as a method to cross-validate information gathered from interview and observation given that sometimes what people say maybe different from what people do” (p. 1604). Documents provided context that assisted the researcher with inquiry during an interview.

A document examination included a thorough review of the university’s Charter, Bylaws, Factbook, Strategic Plan, Faculty and Staff Handbooks, and resources on the University’s public website and intranet site. Agreements, contracts, and memorandum of understanding, relevant to the university’s collaboration in regional economic development, were examined as part of this study.

**University Bylaws.** According to the University Bylaws, the affairs of Point Park University are governed by a Board of Trustees which have and exercise the powers granted to the University by law and the University’s Articles of Incorporation (Point Park University, 2010). The administration of the University is led by the president of the university who serves as the chief executive officer and is elected by the Board of Trustees. The president is charged with carrying out the policies, rules, and regulations that are set forth by the board, and the
The president has the responsibility to advise the board on policies and programs to further the educational, financial, and physical development of the university (Point Park University, 2010). The president is also responsible for establishing a management organization that may also include advisory councils or committees to provide advice. The Bylaws of the university also name the president as the head of the faculty and an ex-officio member of all constituted groups of faculty as well as having the right to participate in every aspect of university affairs. The Bylaws provide for executive officers of the institutions and empower the president to appoint additional officers as needed.

**University Factbook.** The University’s Factbook (Point Park University, 2015) was reviewed to understand the operations of the university. General operating statistics as well as curricular and co-curricular programs were studied.

**Strategic Plan.** The development and execution of long-range plans is one of the most important responsibilities of an institution (Statement on government of colleges and universities.1966). Point Park engaged its university community in a strategic planning process in 2005 with assistance from The Hill Group, Inc., an external management consulting firm. The process culminated in the university’s current mission, vision, and strategic initiatives, approved by the Board of Trustees in 2008 (Point Park University, 2011). A thorough review of the 2008 strategic planning process and plan was performed as part of this study as well as a review of the most recent renewal of Point Park’s strategic plan in 2016.

**Urban Land Institute Advisory Panel Process.** Point Park University established a goal to create a strong academic experience while being a respectful member of the surrounding community that is part of Downtown Pittsburgh with the philosophy that the success of campus
would be the success of the neighborhood and vice versa (Urban Land Institute, 2007). The University investigated how it could engage Downtown stakeholders and residents to create a dynamic neighborhood that complemented existing sections and developments as well as the University’s desire to enhance its campus and academic experience. In 2007 Point Park University engaged the Urban Land Institute to utilize its Advisory Panel process to engage a broad and diverse group of stakeholders. The Advisory Panel process was made possible through a collaboration of funders, including Point Park University, Department of Community and Economic Development of the Commonwealth of Pennsylvania, Allegheny County Department of Economic Development, Urban Redevelopment Authority of the City of Pittsburgh, and the Heinz Endowments (Urban Land Institute, 2007).

**Pittsburgh Downtown Partnership Business Plan.** The mission of the Pittsburgh Downtown Partnership is to provide dynamic leadership and a consistent voice to improve the vitality of Downtown [Pittsburgh, Pennsylvania] through enhanced services, advocacy, collaboration, and marketing (Pittsburgh Downtown Partnership, 2006). The business plan outlines how the private-sector organization intended on developing support for legislative and capital requests advantageous to the Central Business District. The plan also boasted that over $3 billion in private and public investment was announced or completed in 2006 (Pittsburgh Downtown Partnership, 2006), which is a testament to the collaborative efforts of this industry collaborative in working with government, foundations, and other private sector stakeholders.

**Pittsburgh Market Square Vision and Action Plan.** In 2006, Project for Public Spaces prepared a report for the City of Pittsburgh’s Department of City Planning, Urban Redevelopment Authority of the City of Pittsburgh, and Pittsburgh Downtown Partnership. The
plan provides a vision and tactical action plan for the development of Market Square, a unique district in the center of the business and cultural districts with over 140,000 office employees located within walking distance and 26,904 students enrolled in nearby schools (Project for Public Spaces, 2006). The plan describes a robust stakeholder engagement process to redevelop 12 sites in the Market Square district and identifies Point Park University as a partner in 6 of the sites. This plan attempts to complement Point Park University development, including the Academic Village.

**New Pittsburgh Playhouse Business Plan.** A business plan conducted by the Urban Redevelopment Authority of Pittsburgh and Point Park University was developed in order to apply for a capital grant from the Commonwealth of Pennsylvania’s Redevelopment Assistance Capital Program (RACP). The plan values the University’s Academic Village Initiative as a $244 million economic and academic development program that has transformed the Wood Street, Boulevard of the Allies, and Forbes Avenue corridors of Pittsburgh’s Central Business District, adding nearly $280 million in total value to the local economy (Urban Redevelopment Authority of Pittsburgh & Point Park University, 2014). The new Playhouse Theater is a significant capital project to enhance the University’s Conservatory of Performing Arts, one of the top programs of its type in the United States. The plan specifies building a 92,000-square-foot performing arts and learning center on 1.6 acres of land in the heart of Downtown Pittsburgh. The $74 million project will include a 560-seat main theater, 200-seat adaptive theater, 100-seat black-box theater, and a state-of-the-art educational center (Urban Redevelopment Authority of Pittsburgh & Point Park University, 2014). The university partnered with several major corporations, foundations, and municipal and state agencies to raise the capital for the project.
Field Observations

Over 60 participatory observations were conducted as part of this study. The researcher served as a consultant to the university and a member of the university president’s executive team. This role provided access and opportunities to directly observe the tripartite collaborative process within the university and with industry and government partners. This access and role also enabled direct observation of study participants.

Over the course of this study, participatory observations of the president’s weekly executive team of nine senior leaders were conducted. Executive team meetings were held weekly and lasted approximately two hours. Collaborative strategy and execution of the major regional economic development initiatives that provided context for this case study were observed. Monthly university leadership meetings, which consisted of approximately 80 university department leaders, and monthly faculty assembly meetings were observed throughout the study. Both monthly meetings lasted approximately two hours each month. Regular weekly meetings with business and government leaders on university initiatives provided opportunities for direct observation of the tripartite collaborative process as well as direct participant observation.

Interviews

Interviewing is one of the most important sources of case study information (Yin, 2009). A process to collect interview data was developed and integrated with data storage and analytic requirements. Creswell (2013) suggested a process to collect interview data that included developing research questions, identifying interviewees, determining the type of interview and recording procedure, and designing and implementing an interview protocol. Observation data
were collected through the use of observational instruments and protocol, established to support the evidence gathering process of the case study (Yin, 2009). Observational data were useful in providing additional information and context about the issue being studied in the case.

Semi-structured interviews were conducted with nine key decision makers and stakeholders, representing university, industry, and government organizations involved in regional economic development projects with Point Park University. Participants were invited to take part in the study through an email invitation sent to them by the researcher, which explained the purpose of the study. Once an invitation to participate in the study was accepted by a participant, the researcher responded by email with an informed consent document that further explained the study and its limitations. The researcher asked each participant to review the informed consent document prior to conducting the interview. The researcher also arranged for a mutually agreeable time to conduct the interview either in person or by telephone.

The researcher conducted an initial series of interviews by utilizing a purposeful sampling of six participants, representing leaders from the university, industry, and government, since the aim was to understand a process or issue (Miles et al., 2014). Each interview was audio recorded with permission of each participant to enable transcription of each interview and analysis. After the first series of interviews, based on insight and information provided by the interviewees, an additional three participants were interviewed across the university and government sectors. A few of the targeted industry sector leaders failed to respond to the invitation to participate in the study. In the end, three interviews were completed with university leaders. Two interviews were completed with industry leaders. Four interviews were completed with government leaders.
A list of participants is shown in Table 4. Biographical information on the participants and background information on their organizations was collected prior to conducting the interviews.

*Table 4. Study Participants*

<table>
<thead>
<tr>
<th>Sector</th>
<th>Position Type</th>
<th>Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>University</td>
<td>President</td>
<td>Point Park University</td>
</tr>
<tr>
<td></td>
<td>Senior Vice President &amp; Chief Financial Officer</td>
<td>Point Park University</td>
</tr>
<tr>
<td></td>
<td>Vice President of Public Affairs</td>
<td>Point Park University</td>
</tr>
<tr>
<td>Industry</td>
<td>Chairman (Retired)</td>
<td>Tribune Review Companies</td>
</tr>
<tr>
<td></td>
<td>Senior Vice President &amp; Market Manager</td>
<td>PNC Financial Services Group</td>
</tr>
<tr>
<td>Government</td>
<td>Deputy Secretary, Department of Community and Economic Development</td>
<td>Commonwealth of Pennsylvania</td>
</tr>
<tr>
<td></td>
<td>Director of Economic Development</td>
<td>Allegheny County, Pennsylvania</td>
</tr>
<tr>
<td></td>
<td>Regional Director (Retired), Department of Community and Economic Development</td>
<td>Commonwealth of Pennsylvania</td>
</tr>
<tr>
<td></td>
<td>Councilman</td>
<td>City of Pittsburgh</td>
</tr>
</tbody>
</table>

The following is a brief background of each interview participant by sector:

**University: Paul Hennigan, Ed.D.** Dr. Hennigan serves as President of Point Park University. Prior to his appointment as president in 2006, Dr. Hennigan served the University as Vice President for Finance and Operations since 2000. Dr. Hennigan is a visible leader in the Pittsburgh region and serves on a number of civic boards. Prior to his tenure at Point Park University, Dr. Hennigan was the chief financial officer for the City of Pittsburgh and served as a senior management analyst for the H.J. Heinz School of Public Policy and Management at Carnegie Mellon University.
University: Mariann Geyer. Ms. Mariann Geyer serves as Vice President for External Affairs at Point Park University and has been with the University since 2006. Ms. Geyer is responsible for establishing and executing strategy for external relationships, including government and industry. She also oversees the University’s marketing and communications strategies. Prior to her role at Point Park, Ms. Geyer served in executive roles with the Greater Salt Lake Area Chapter of the American Red Cross, Pittsburgh Downtown Partnership, and the administration of former Pennsylvania Governor Tom Ridge.

University: Bridget Mancosh. Ms. Bridget Mancosh serves as Senior Vice President of Finance and Operations of Point Park University. As the chief financial officer, Ms. Mancosh is responsible for the development of the University’s operating and capital budgets as well as financing decisions and investments. Ms. Mancosh also oversees operations including human resources, facilities, information technology. She has served in the finance area of the University since 1998. Prior to her tenure at Point Park University, Ms. Mancosh worked for Deloitte & Touche and served many industry sectors.

Industry: Stephanie Cipriani. Ms. Stephanie Cipriani is Senior Vice President and Market Manager of PNC Financial Services Group (PNC), headquartered in Pittsburgh, Pennsylvania. Ms. Cipriani is responsible for community development banking in western and central Pennsylvania and oversees Community Reinvestment Act initiatives and policies. She has been with PNC for eight years and served 30 years with banks that were eventually acquired by PNC. Ms. Cipriani also serves on a number of civic boards in the Pittsburgh region.

Industry: H. Yale Gutnick. Mr. Yale Gutnick served as Chairman of the Tribune Review related companies for over 35 years. Recently Mr. Gutnick became Honorary Chairman
of the companies and sits on a number of other companies’ boards. Since 1978, Mr. Gutnick has been a partner at the law firm of Strassburger McKenna Gutnick & Potter of Pittsburgh, Pennsylvania where he now serves as Senior Partner. In the 25 years that he was in private practice, Mr. Gutnick specialized in complex civil and criminal litigation and entertainment and media law.

**Government: Sheri Collins.** Ms. Sheri Collins serves as Deputy Secretary for the Office of Technology and Innovation in the Department of Community and Economic Development of the Commonwealth of Pennsylvania. Ms. Collins is responsible for fostering innovation and entrepreneurship to ensure the success of Pennsylvania’s technology industry. She has over 25 years of experience in economic development and private investment and has worked for the Commonwealth of Pennsylvania for over 12 years.

**Government: Bob Hurley.** Mr. Bob Hurley serves as Director of Economic Development for Allegheny County, Pennsylvania and is responsible for the economic development strategy of the county. Mr. Hurley has worked for the county since 2004 and has been Director since 2014. In his current role, Mr. Hurley also serves as Director of the Allegheny County Redevelopment Authority and Executive Director of the Industrial Development Authority, Hospital Development Authority, Higher Education Building Authority, and Residential Finance Authority. Prior to working for the county, Mr. Hurley served in significant development roles for over two decades with the Urban Redevelopment Authority of Pittsburgh, Air and Waste Management Association, and City of Pittsburgh.

**Government: Ellen Kight.** Ms. Ellen Kight is the retired President of Pittsburgh Partnership for Neighborhood Development and also served as Regional Director for the
Department of Community and Economic Development of the Commonwealth of Pennsylvania.

In her role with the commonwealth, Ms. Kight directed economic development activities on behalf of the Commonwealth of Pennsylvania for ten counties in southwestern Pennsylvania. Ms. Kight spent 27 years in state government, serving under four governors.

**Government: Daniel Lavelle.** Mr. Daniel Lavelle serves as a Councilman for the City of Pittsburgh. In his role as a councilman, Mr. Lavelle serves as the chairman for Public Safety and is a board member of the Urban Redevelopment Authority of the City of Pittsburgh. Prior to serving on the City Council, Mr. Lavelle worked for a state representative, a city councilman, and for Americans for Democratic Action.

The interview protocol was developed using a theoretical framework for understanding community collaboration through twenty factors that influence the success of collaborations formed by nonprofit organizations, government agencies, and other organizations. The six categories of the WCFI developed by Mattessich et al. (2001) aligned with the theoretical framework that explains the ten propositions and four stages in the emergence of a triple helix developed by Etzkowicz (2003). The interview protocol is shown in Appendix A.

The nine participant interview audio recordings were transcribed by Rev.com, a professional transcription service. The researcher reviewed each audio recording and compared the recordings to their respective interview transcripts, editing the transcripts as necessary to ensure that verbatim responses were captured for each participant. Each participant was sent a copy of their transcript by email to review and further edit to ensure accuracy and comfort level of each participant. Only two participants provided edits back to the researcher, which were typically minor clarifications of responses.
Each transcript was read several times by the researcher. The researcher utilized memoing to capture reflections and thinking about the data. After reflection of the interviews, documents, and other observations, first cycle codes were developed as descriptive labels of themes emanating from the data. Following an iterative process of reading and analyzing interview data and reflection of first cycle codes, the set of first cycle codes were finalized and second cycle or pattern codes were formed to group first cycle codes into a smaller number of parent codes or categories.

**Multiple Sources of Evidence**

As prescribed by Yin (2009), the major sources of evidence were leveraged and optimized by following three principles: using multiple sources of data, creating a case study database, and maintaining a chain of evidence. According to Eisenhardt (1989), the combination of multiple data types can be highly synergistic. For example, quantitative data indicated relationships and provided insight to impressions that were not obvious from qualitative data, and quantitative data validated findings from qualitative data. Most case study researchers, concerned about the validity of their data collection and analysis, collect data from multiple sources and utilize triangulation as a practice of using multiple sources to provide corroborating evidence or identifying a convergence of findings (Merriam, 1998; Stake, 1994; Yin, 2009). Stake (1994) also suggested that triangulation can identify divergence of findings, which is equally beneficial. Triangulation of multiple data sources was applied in this case study research.

Yin (2009) advised that every case study project should develop a formal, presentable database, which will enhance transparency and increase the reliability of the case study research. Yin (2009) added that by maintaining a chain of evidence through a database, a mechanism is
created to document and trace the logic and evidence trail to ensure alignment of the case study research from the research questions to the findings, enhancing reliability of the study and construct validity. An example of the framework for maintaining a chain of evidence is shown in Appendix B.

Analytic Methods

According to Merriam (1998), the case study approach offered a means of investigating complex social units consisting of multiple variables of potential importance in understanding the phenomenon. The analysis of complex cases with multiple variables and data from various sources required a strategic approach. A calculated approach to the analysis of case study research was accomplished through an integrated methodology, utilizing techniques developed by multiple scholars.

To begin the analytic process, the researcher considered a few options. Yin (2009) considered the questions posed in the case study protocol as a place to begin. This guided the thought process around coding the data and the display of the data. Rubin and Rubin (2012) and Miles et al. (2014) suggested using theoretical and conceptual frameworks of the study to guide the coding process. The conceptual framework influenced the coding process. Baxter and Jack (2008) recommended using propositions, influenced from the literature and theoretical framework, to guide a case study through data collection and discussion. On the other hand, Creswell (2013) suggested allowing the data to do the talking and allowing for themes to emerge. Both propositions and theoretical frameworks guided the study; however, the initial analysis of the data and the first set of themes and codes emerged directly from the data.
In analyzing the data from this case study, a hybrid approach was utilized. Yin’s (2009) structured approach of combining both qualitative and quantitative data to address the questions and theoretical framework was used to explore the case. Merriam’s (1998) process of making sense out of the data by consolidating, reducing, and interpreting what people said and what the researcher saw and read was used as the research progressed. The researcher read the transcripts and all other forms of collected data several times and utilized memoing to capture reflections and thinking about the data (Creswell, 2013). Following this process of reading and reflecting on each of the interviews, documents, observations, and other sources of data, first cycle codes were developed as descriptive labels and then second cycle or pattern codes were formed to group first cycle segments into a smaller number of categories, themes, or constructs (Miles et al., 2014). The coding strategy applied to all other forms of collected data.

A structured approach of combining both qualitative and quantitative data to address the questions and theoretical framework was used to explore the case (Yin, 2009) as well as Merriam’s (1998) process of making sense out of the data by consolidating, reducing, and interpreting what people said and what the researcher saw and read. Types of quantitative evidence included university enrollment data, development performance data (alumni relations and fundraising), and financial performance data in order to explore relationships among university organizational performance, collaboration effectiveness, and university sustainability. The theoretical framework of the study guided the structure of coding process (Miles et al., 2014; H. J. Rubin & Rubin, 2012).

The use of a computer software program, MaxQDA, was used to assist in the process of memoing, coding, and analysis of the data. With the number of interviews and the complexity of
the interviews and variables, analytic software was useful, and it enabled the researcher to efficiently and effectively capture, code, and catalog interview text and memos. It also aided the researcher in organizing and categorizing themes emanating from the data. Computer analytic software allows researchers to further understand how to organize themes and concepts (H. J. Rubin & Rubin, 2012). Following the first and second cycle coding methods, the researcher used analytic software to produce data tables to display concepts captured from the memoing processes and frequency analyses of codes and categories or themes. The software was used to observe relationships between variables and interview cohorts. The display of data in the analysis of all the sources of evidence was a powerful technique to inform the findings.

**Trustworthiness**

In order to ensure the trustworthiness of this qualitative study, several validation methods were utilized to ensure that the study was credible and the findings were accurate (Creswell, 2013). Triangulation of data was utilized through the analysis of multiple sources of data to provide corroborating evidence or to identify a convergence of findings as well as to alert the researcher of a divergence of findings (Merriam, 1998; Stake, 1994; Yin, 2009). According to Merriam (1998), the researcher must be aware of biases that can affect the rigor of the study design and analysis of the data that can affect the study. To ensure accuracy and shield from bias, the interview transcripts were reviewed and approved by the participants (Creswell, 2013).

**Protection of Human Subjects**

It is unlikely that human subjects were harmed in this qualitative case study. Nevertheless, since this case study involved gaining access to sites, institutional data, and individuals, the researcher obtained Institutional Review Board (IRB) approval from
Northeastern University for the study design and data collection protocols as well as from individual participants involved in the study (Creswell, 2013). The IRB approval included an institutional approval from the president of the study site, Point Park University. Study site approval granted access to all institutional documents relevant to the study as well as to leadership of the university.

Prior to meeting with each volunteer study participant, the researcher reviewed the purpose and scope of the case study research as well as discussed the potential value, limitations, and risks associated with the study. Permission to audio record each interview along with informed consent to participate in the study, which includes consent to utilize participants data collected from the study, was obtained verbally and captured via audio recording.

In order to encourage the exchange of open and honest information from participants, the researcher strived to maintain the privacy of the data of the study participants. Since this study was a single case study involving university collaboration with industry and government, the leadership of the university as well as collaborating organizations may be identifiable. Specific data easily attributed to any individual participant was approved by the participant.

**Summary**

A single instrumental case study methodological approach was used, focusing on university collaboration in regional economic development within a mid-range university, Point Park University in Pittsburgh, Pennsylvania. A hybrid analysis approach was followed that included a document review, followed by participatory observations and interactions in the field to gain information and context that was useful in developing interview and other data collection protocols. A purposeful sample strategy was used to conduct 9 semi-structured interviews with
university, industry, and government leaders involved in regional economic development projects with the university. A cross-source data analysis was conducted to identify major themes that emerged from the study.

Chapter four identifies the findings of this study, including the major themes that emerged from the cross-source data analysis. The results provide significant insight to answer the research question as well as findings to guide conclusions and implications for future research and practice.
Chapter 4: Findings

Universities have played a major role to positively impact the quality of life and economic growth and development in the regional economies in which they reside (Bagchi-Sen & Smith, 2012). Through a tripartite collaboration with policy makers and industry, universities have the potential to drive regional economic development (Etzkowitz, 2012; Warshaw & Hearn, 2014). Since mid-range universities lack the critical mass of larger research institutions, they must be more selective and strategic as they develop a portfolio of industry and government linkages relevant to the scope of activities and the types of firms with which they interact (Wright et al., 2008).

This issue of university collaboration and its impact on regional economic development is becoming an increasingly important issue to public and private sector stakeholders. Industry, government, and universities have come to realize that more can be accomplished through collaboration rather than working independently of each other (Galloway & Minton, 1997). Universities that can leverage government collaboration along with industry collaboration to impact regional economic development in an effective and efficient manner will become relevant and critical civic partners in their regions and states.

The purpose of this research is to understand how leaders described collaborative efforts to enhance regional economic development. The intent of this research was to inform university leadership on how to effectively collaborate with leaders from industry and government to advance economic development in their regions. The identification of elements of effective university-industry-government collaboration to drive regional economic development will be of great importance to university administrators who must demonstrate value to their boards and
regional investors as an economic development partner, as well as other stakeholders interested in the university’s sustainability.

The goal of this research was to explore how leaders from a mid-range university, industry, and government described collaborative efforts to enhance regional economic development. The intent of this research was to better understand university collaboration in regional economic development. This study explored collaboration among leaders from a mid-range university, industry, and government through the following research question: How do leaders from a mid-range university, industry, and government describe collaborative efforts to enhance regional economic development?

A single instrument case study methodological approach was utilized since the research question was intended to gain an understanding of collaborative efforts to enhance regional economic development. The phenomenon of interest was focused on how and why leaders of a mid-range university collaborated with leaders of industry and government to enhance regional economic development. A case study was a suitable design since there was an interest in process (Merriam, 1998) and there was an attempt to answer ‘how’ and ‘why’ questions (Yin, 2009).

Based on the documents reviewed, interviews conducted, and personal insights drawn from this study, a description of the analysis of the data was provided followed by findings discerned from the analysis as well as conclusions from the results. The analysis described an interpretation of the documents reviewed, synthesis of themes by interview question across leadership cohorts, and a rationale for coding of the interviews. The findings provided general and major themes discerned from the analysis of the data. Finally, major conclusions of the findings were identified.
Analysis

The analysis included review and investigation of all information and documents relevant to the case study site and the university’s process of collaboration in regional economic development. The analysis focused on a review of general institutional information on its strategy, structure, and governance as well as any documentation on the three contextual projects. The analysis also involved examination of nine interviews of leaders in the case from the university, industry, and government.

Document Review

The analytic process began by conducting a document review that entailed an examination of all information and documents relevant to the case study site and research question. This investigation included a thorough review of the University’s Bylaws, Factbook, Strategic Plan, and resources on the University’s public website and intranet site. Several documents were reviewed that involved strategy and planning relevant to Point Park University’s involvement in regional economic development initiatives. This review consisted of an initial inspection of each document, followed by a second, more-thorough examination where the researcher conducted memoing to capture reflections, key thoughts on the data, and questions to explore through other document analyses or interviews. A third examination of the documents was conducted in order to provide context to develop a first-level coding strategy.

University Governance. The University’s Bylaws provide the university president with broad powers and responsibilities to provide leadership and management authority over all aspects of the university. The Bylaws also position the president as the primary conduit to the Board of Trustees by specifying that the president serve as the primary liaison and advisor to the
Board of Trustees while also holding a seat as an ex-officio, voting member of the Board (Point Park University, 2010).

Through review of minutes of Board of Trustees’ meetings, attendance at Board of Trustees meetings, and informal discussions with members of the Board of Trustees, it was apparent that organizational operating documents, structure, and culture were in alignment. This alignment provided the university president with broad authority to lead and represent the institution by statute, structure, and practice. The authority given to the president and comfort of the Board in the president’s leadership abilities enabled the president to provide leadership on behalf of the University and in the community. This authority to lead, coupled with trust to lead, enhanced the university president’s effectiveness to provide leadership in tripartite collaboration explored in this study.

**Strategic Plan.** The University’s strategic plan, conducted in 2008 and renewed in 2016, outlined a set of strategic initiatives, goals, and objectives that detailed the strategies associated with the three collaborative projects that provided the context for this study. The strategic plans operationalized the strategies into tactics that included the prioritization and allocation of resources and funding. The University’s strategic planning process and strategic plan provided the focus for these collaborative projects to succeed, by providing a clear roadmap for the entire university to follow and align activities.

Point Park University’s strategic plan was utilized as a strategic management tool by the president and board to manage the institution as well as to evaluate progress on objectives. Annual operating plans, aligned with the university’s strategic plan, were developed by academic units and departments. The University recently revised its strategic plan for the next five years.
The current mission, vision, values, and strategic initiatives were outlined in the Point Park University Factbook. According to the current mission statement, “Point Park University educates students in a diverse urban environment and prepares graduates to apply knowledge to achieve their goals, advance their professions and serve their communities.” The vision statement declared, “Point Park University will be one of the most dynamic private, urban universities in America” (Point Park University, 2015). The values of the university included: “promoting academic excellence, focusing on student needs, fostering a community of mutual respect and diversity, encouraging innovation, ensuring integrity and ethics in our actions, responding to our stakeholders, and facilitating civic engagement” (Point Park University, 2015).

The university community established four strategic initiatives: Academic Excellence, Quality Student Experience, Managed Growth, and Community Engagement (Point Park University, 2015) which served as the framework for the strategic plan’s articulation of goals and objectives. The four strategic initiatives were operationalized into a series of goals. Each goal was then further operationalized into a series of objectives which are specific, measurable, achievable, and time bound (SMART). Therefore, within each strategic initiative, there were a series of goals with each goal having its own series of objectives. The strategic plan was organized at the university level and at the school and major administrative department level.

The strategic plan called for several initiatives that had an anticipated impact on regional economic development including the addition of cooperative education programs, launch of its new Center for Media Innovation, and the construction of a new Playhouse Theater in the heart of Downtown Pittsburgh.
The strategic planning process utilized by Point Park University provided clear targets, accountability, and an ability to manage and evaluate progress on these collaborative projects. Probably of greatest value, the strategic plan provided a comprehensive vision for the university and articulated how these collaborative projects aligned with the University vision. This was an important process and document, not only for University stakeholders, but for external stakeholders and constituents, like industry and government, critical to the planning and execution of these tripartite collaborative projects.

**Urban Land Institute Advisory Panel Process.** The advisory panel process facilitated by the ULI was a pivotal event in the University’s role to enhance regional economic development through tripartite collaboration. The advisory panel process initiated the framework and process for broad stakeholder engagement and served as a catalyst to instill a practice and culture stakeholder engagement as a method to further collaborative projects that could impact the university and its surrounding community.

The Advisory Panel process document provided a detailed description of the study area, including land uses, transportation and access, infrastructure, special features, economics, demographics, residential housing, and commercial activity. The process document also described involvement among stakeholders in the government, industry or for-profit, and non-profit sectors. Hundreds of stakeholders were engaged in this public participation process through a series of public meetings and forums, focus groups, interviews, and informal meetings.

Data from interviews and observation confirmed the intent and description of the advisory panel process as detailed in the process documents. The advisory panel process positioned the university to take a leadership role in a collaborative process to enhance regional
economic development in the Downtown Pittsburgh area, which really began to elevate the reputation and impact of the University. According to the university president, “That [ULI Advisory Panel Process] is really when the profile of the University began to rise.”

**Community Plans.** The Pittsburgh Downtown Partnership Business Plan and the Pittsburgh Market Square Vision and Action Plan, developed through collaborative efforts among private and municipal organizations to improve the Downtown Pittsburgh, included Point Park University as a partner. Both plans supported development of the Central Business District and adjacent Market Square areas of Downtown Pittsburgh that included the Point Park University campus. These plans provided a template for collaboration among sectors and provided support for development that Point Park was to embark upon.

The New Pittsburgh Playhouse Business Plan, conducted by the Urban Redevelopment Authority of Pittsburgh and Point Park University, provided detail on the elements and process of tripartite collaboration that was required for the building of the new Pittsburgh Playhouse Theater. This plan was important as it specified the rationale for the project and investment needs required from the university, industry, and government stakeholders in order to execute this $74 million project in the heart of the Pittsburgh’s Central Business District. The plan described the mechanics, creativity, and complexity of tripartite collaboration for large-scale regional economic development projects that was expressed during the interviews with leaders and through observation.

**Field Observations Summary**

Field observations provided rich insight that complemented the document review and enhanced the participant interviews. It was clear through observation of the tripartite
collaborative process and from the university’s strategy development and execution that leadership was critical to the planning, execution, and sustainability of the collaborative initiatives studied in this case.

University leadership was effective in initiating and facilitating the collaborative initiatives studied in this case. The university president was effective and performed a proactive leadership role as prescribed from the university’s governance documents. The university president instilled a discipline of planning and stakeholder engagement to develop a shared vision for collaborative initiatives. Industry and government leaders respected and trusted the university leadership, which was critical for their engagement in tripartite collaborative efforts.

Observations in the field corroborated guidance on strategy and execution from the many planning documents referenced in this study. Planning and strategic management was a university discipline. These planning processes and the utilization of stakeholder engagement were often referenced by collaborative partners as important elements of the collaborative process. Industry and government leaders referenced and relied upon plans as part of their due diligence to justify their engagement, and they frequently referenced stakeholder engagement as a critical success factor in tripartite collaboration.

Direct observation of the tripartite collaborative process corroborated the results of the participant interviews. University-industry-government partners were very collaborative. They engaged in cooperative planning and reached consensus on a shared vision for each of the projects examined in this case study. They rotated roles and leadership on phases of the initiatives appropriately and as needed, often dictated by expertise or resources provided. The collaborative partners leveraged each other appropriately in order to gain from the strengths or
resources of partners in order to achieve a successful outcome. Field observations uncovered programs initiated by government to encourage tripartite collaboration, particularly to extend and leverage public resources. Industry provided direct support in expertise, resources, and integration while also promoting the value of these collaborative efforts to the community.

**Interview Summary**

Emerging trends across participants by interview question were summarized in Appendix C. The interviews explored the rational and environment for collaboration, process and structure of collaboration, and resources or elements required for successful collaboration. Trends emerged across the interview questions that were corroborated among university, industry, and government leaders.

**Rationale for collaboration.** The first interview question solicited university, industry, and government leaders on their rationale to collaborate with organizations from the other two sectors. University leaders were very clear on their reasoning to collaborate with industry and government. The university had a need to expand and realized that it did not have the resources to pursue these major development projects on its own. Industry leaders decided to collaborate because of a convergence of interests with both industry and the university having an opportunity to benefit from the collaborative projects described in the study. Government leaders described their mission to stimulate economic activity and to serve as a catalyst and coordinator of efforts to enhance regional economic development.

**Desired characteristics of collaborative partners.** The second interview question asked leaders if there were any characteristics of the groups that they collaborated with that were important in their decision to collaborate with them on the major projects outlined in this study.
University leaders identified a capacity of an organization to support the collaborative effort as being important. Capacity could include the ability to provide general public or political support, technical support or expertise, or financial assistance. University leaders also stressed the importance engaging stakeholders that represented a broad, cross-section of the community. Industry leaders used criteria to assess the success and reliability of potential partners to ensure that their partners have the resources and sustainability to stand behind their projects. Government leaders relied on known relationships, the quality of leadership of potential partner organizations, and having a plan as indicators of a potential collaborative partner.

**Collaboration process.** The third interview question explored how university-industry-government collaboration began and ensured over the duration of these projects. University leaders described the process of how the university first developed its vision and resource requirements to execute the vision. With an understanding of its capacity and resources, the university proactively sought to understand the needs of its greater community and developed a vision that would be mutually beneficial to both the university and the community. The university then executed a robust stakeholder engagement process with a diverse group stakeholders with emphasis on stakeholder partners who could add value to resource deficiencies of the university. Industry and government leaders acknowledged that the university provided the leadership necessary to initiate these collaborative efforts as well as to sustain them through patient and persistent communication and the sharing of information and resources. Government leaders described their role of providing programs and resources to stimulate and foster collaboration among sectors.
Factors of successful collaborative efforts. The fourth interview question identified factors that leaders believed influenced the success of these collaborative efforts. University leaders acknowledged that time and place influenced success. Industry and government leaders reached consensus around the need to develop areas of the Downtown section of the City. Stakeholders were ready for development, and the location was in need of improvement. University leaders also identified the university president’s leadership abilities and the university’s ability to share their vision for the university and community by engaging stakeholders in the process early, often, and continuously as critical success factors. Industry and government leaders both recognized the university’s ability to understand the needs of the community and patience and tenacity to drive the collaborative process as factors that influenced the success of these initiatives.

Factors that could impair collaborative efforts. The fifth interview question inquired if there were any factors that diluted, impaired, or jeopardized any of these collaborative projects or could have negatively impacted the projects. University, industry, and government leaders recognized that lack of funding could have impacted the projects, and funding did provide a constraint on the size of the development projects. The financial meltdown that occurred across the United States in 2008 could have negatively impacted these projects, but leaders across sectors identified that the community need and the university’s leadership and persistence enabled the projects to succeed. The tax exempt status of universities posed a threat to these projects since university real estate development often removes properties from property tax rolls that are the major revenue source of municipal governments and school districts in the Commonwealth of Pennsylvania. The university was able to overcome this potential obstacle by demonstrating positive value and impact of these projects to the community.
**Communication and agreement around vision.** The sixth interview question examined how the vision, goals, and objectives of these collaborative efforts were communicated and agreed upon among the collaborative members. University leaders identified the importance of having a good communication strategy and plan in order to communicate a vision and to gain general consensus on the vision and plan of action. Industry and government leaders recognized the university’s ability to communicate their vision and to solicit feedback to improve the vision and development initiatives, which enhanced the quality of the collaborative efforts along with acceptance by stakeholders. Industry and government leaders commented on how the university communicated with individual and groups of stakeholders on a consistent basis. It was conveyed by all leaders interviewed in this study that this open, consistent communication and transparency of the process enhanced communication and agreement on the vision and plans of the collaborative efforts.

**Critical success factors of future collaborative efforts.** The seventh interview question asked leaders to identify what they would need to have in place when launching a major collaborative project ten years from now. University, industry, and government leaders commented that funding would be even more critical in the future. University leaders and government leaders recognized the accelerating decline of public and private resources available to fund regional economic development projects, particularly those involving higher education institutions. University leaders indicated that the credibility of a collaborative partner, especially a university, was critical in order to do future projects. The university president stated, “We would have to have earned the credibility that we did what we said we were going to do. Without that credibility, I don’t think there could be subsequent phases.” University leaders conveyed that an organization must earn trust to do more projects with other stakeholders, and good
collaborative partners in these types of regional economic development projects must demonstrate value to the community and other stakeholders.

Industry and government leaders echoed the importance of having credibility and a record of success in order to pursue future projects. Government leaders also expressed value of being informed of potential collaborative projects early on in the process. Government leaders explained that government can be more effective in creating an environment to foster and sustain collaboration among sectors if they have enough lead time to coordinate and finesse collaboration.

**Other useful information.** The final interview question solicited leaders to share any other information that may be useful or relevant for this research. The university president conveyed an adage that he had heard over the years, “If you can dream it, you can do it.” The university president realized through these collaborative projects that if you make the vision compelling, people will come along. Industry and government leaders acknowledged that Pont Park University was a great success story, and leadership was critical to initiating and sustaining successful tripartite collaboration. Leaders across the three sectors acknowledged the unique role that the philanthropic sector played in regional economic development in southwestern Pennsylvania. The foundation community collaborates effectively with the university, industry, and government sectors. Government leaders stressed that planning is an important competency to ensuring successful tripartite collaboration to enhance regional economic development as well as the ability to understand and articulate impact on the community.
Coding Strategy

The coding strategy was in part driven by the theoretical framework of the Wilder Collaboration Factors Inventory and from several themes that emerged from the interviews. From the analysis of the interviews, 28 coded segments and 8 parent or category codes emerged. Parent codes of leadership, planning, collaboration, participant characteristics, communication, stakeholder engagement, resources, and emergence of a triple helix provided a basis for the development of major themes. The 28 coded segments described specific themes. The interview coding system is shown in Table 5, organized by parent code, which is segmented by specific codes. Samples statements taken from the interviews provided an illustration of each code.
### Table 5. Interview Coding System

<table>
<thead>
<tr>
<th>Parent Code</th>
<th>Code</th>
<th>Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Leadership</strong></td>
<td>Proactive leadership</td>
<td>“The university drove the bus.”</td>
</tr>
<tr>
<td></td>
<td>Foster collaboration</td>
<td>“Then we reached out to Allegheny County Economic Development and a couple of the foundations…”</td>
</tr>
<tr>
<td></td>
<td>Risk taking</td>
<td>“…people are willing to take a chance.”</td>
</tr>
<tr>
<td><strong>Planning</strong></td>
<td>Shared vision</td>
<td>“If you can articulate the vision and make it compelling, people will come along.”</td>
</tr>
<tr>
<td></td>
<td>Unique purpose</td>
<td>“That Forbes Avenue Corridor is a mix of what for profit, not for-profit, developers, and corporations can do to reinvent a very important stretch.”</td>
</tr>
<tr>
<td></td>
<td>Attainable goals and objectives</td>
<td>“Documentation of the transaction keeps the partners and the project on course.”</td>
</tr>
<tr>
<td></td>
<td>Clear roles and responsibilities</td>
<td>“Here’s the part where the City had the expertise, but the University captured the money.”</td>
</tr>
<tr>
<td></td>
<td>Shared ownership of process and outcome</td>
<td>“I would say that Andy, Paul, Matt through the University, Jennifer at Trib Total Media, and myself were probably the major players.”</td>
</tr>
<tr>
<td><strong>Collaboration</strong></td>
<td>History of collaboration</td>
<td>“I think historically, some of our university partners were already doing that… They were already working with industry to help industry really determine what the opportunities were in the marketplace…”</td>
</tr>
<tr>
<td></td>
<td>Collaboration in self-interest</td>
<td>“The reason why we decided to collaborate is because we knew we couldn’t do anything on our own, or very little on our own, and so we knew we needed partners early on.”</td>
</tr>
<tr>
<td></td>
<td>Ability to compromise</td>
<td>“Through a number of intimate meetings, where feelings, ideas had to get hashed out. I think early on, no one was necessarily against the concept, but rather the execution of what it really looked like is where the concern came in.”</td>
</tr>
<tr>
<td></td>
<td>Collaborative climate</td>
<td>“And we luckily had a collaborative that was working well with state agencies. We talked to each other. We knew each other. We trusted each other.”</td>
</tr>
<tr>
<td>Participant characteristics</td>
<td>Trust and respect</td>
<td>“I think the trust was a very important factor. Everybody was always honest with one another.”</td>
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<tr>
<td>-----------------------------</td>
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<td>------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Reliable and competent</td>
<td>“You know who your partners are. You know who are successful and reliable. They bring expertise as well as financial dollars to the project.”</td>
<td></td>
</tr>
<tr>
<td>Adaptability</td>
<td>“Let's have every stakeholder meeting necessary to show this is exactly what we want to do, and based upon feedback, how it needs to be adjusted.”</td>
<td></td>
</tr>
<tr>
<td>Communication</td>
<td>Open and frequent communication</td>
<td>“We started a discussion at this big table, including as many voices as we could find, and understood that we needed an impartial outside entity that could help us to facilitate all of this but that would also lend credibility to this information.”</td>
</tr>
<tr>
<td>Informal relationship</td>
<td>“You need to have relationships before you start asking for things.”</td>
<td></td>
</tr>
<tr>
<td>Stakeholder engagement</td>
<td>Diversity of participation</td>
<td>“It was really that setting the largest table, building the biggest tent, whatever example you wanted to use, and then inviting everybody in and not making promises...”</td>
</tr>
<tr>
<td>Understand needs of others</td>
<td>“They need to have an awareness and ability to negotiate with the community itself.”</td>
<td></td>
</tr>
<tr>
<td>Explain value of collaboration</td>
<td>“They explained to us, not only what it meant to the University, but what it meant to the broader Downtown community. That was important to us.”</td>
<td></td>
</tr>
<tr>
<td>Gain expertise and resources</td>
<td>“We have been talking with all of our partners about that, because we're going to need a lot of partners to make that work.”</td>
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<tr>
<td>Gain support</td>
<td>“We needed to get them on board with what we were doing so they would support it.”</td>
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<tr>
<td>Resources</td>
<td>Understanding of capacity</td>
<td>“I think we have to understand ourselves. We have to understand financially where we are and where we’re headed. Clearly what we’re trying to accomplish and why. I think we have to understand that first.”</td>
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<tr>
<td>Sufficient resources</td>
<td>“Funding is always an issue.”</td>
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<tr>
<td>Leverage resources of others</td>
<td>“And who has that expertise and knowledge that we needed? That was just as important as understanding, ‘Here's a corporation. Here's a government entity that has money.’ It’s also the knowledge that they [the City] brought to the table.”</td>
<td></td>
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<tr>
<td><strong>Emergence of Triple Helix</strong></td>
<td><strong>Internal transformation in each of helices</strong></td>
<td>“The [steel] mills were closing. People were leaving. Point Park because of its size, because of its location, because of its history, was able to link in with the corporate community to say, ‘Hey, we’re here. We know that we can’t keep all of these displaced steel workers, but if you’re retraining them, we can take some of them.’”</td>
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<tr>
<td><strong>Influence of one helix upon another</strong></td>
<td>“I think what you’re going to see is a more concerted effort with this department and the administration really supporting, at a different level and in a different manner, the role that the universities play in conjunction with Pennsylvania’s seven Industrial Resource Centers.”</td>
<td></td>
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<tr>
<td><strong>Creation of new overlay of networks</strong></td>
<td>“One of the things that I’ve noticed, and there is a collaborative right now of people that do what I do in the university community, and then getting together once a month, just talking about what’s going.”</td>
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**Leadership.** The parent code of leadership encompasses codes of proactive leadership, foster collaboration, and risk taking. The code of proactive leadership includes elements of the WCFI factor of skilled leadership and describes the individual who provides leadership for the collaborative group and how that individual has organizing and interpersonal skills and carries out the role with fairness, which grant this leader with respect or legitimacy by the collaborative partners (Mattessich et al., 2001). This codes foster collaboration and risk taking are influenced by Kouzes and Posner’s (2007) model on leadership as a framework to describe how university, industry, and government leaders engage in leadership behaviors during tripartite collaborative processes. Leaders foster collaboration by actively involving others in processes and by creating an atmosphere of trust to encourage others to act (Mattessich et al., 2001). According to Kouzes and Posner (2007), risk taking describes how leaders challenge the process by looking for ways to improve an organization or process by experimenting and taking risks.
Planning. The parent code of planning encompasses specific codes of developing a shared vision, having a unique purpose, attainable goals and objectives, clear roles and responsibilities, and shared ownership of process and outcomes. The importance of developing a shared vision was influenced by the work of Kouzes and Posner (2007) as they described how leaders inspire a shared vision by envisioning the future and enlisting others to see the possibilities. This code was organized under the parent code of planning since the exercise of creating a vision is foundational to planning. Unique purpose was a WCFI factor that described how the mission, goals, or approach of a collaborative group differ from the unique missions, goals, or approaches of member organizations of a collaborative effort (Mattessich et al., 2001). The formulation and clarity of attainable goals and objectives was important to the effectiveness of a collaborative group and identified as a factor related to purpose or reason for the development of a collaborative effort by Mattessich et al. (2001). Clear roles and responsibilities was a factor identified by Mattessich et al. (2001) that addressed how collaborating partners understood their roles, accountability, and responsibilities for execution. Shared ownership of process and outcome is another WCFI factor that accounts for how members of a collaborative effort feel ownership and accountability of both the working aspects of the collaborative group and the result of the collaborative effort (Mattessich et al., 2001).

Collaboration. The parent code collaboration encompasses the codes of having a history of collaboration, whether or not collaboration is in the self-interest of a collaborative member, the ability to compromise, and the climate for collaboration. According to Abbott, Jordan, and Murtaza (1995), having an exposure to and a history of collaboration was a significant factor in successful collaboration among organizations. Mattessich et al. (2001) identified history of collaboration as a WCFI factor and claimed that this perspective offered collaborating groups a
frame of reference and understanding of roles and expectations of the collaborative process. Collaborative members seeing collaboration in their self-interest is a WCFI factor that represents the belief that collaborating partners believe that they will benefit from their engagement in a collaborative effort and any risks will be offset by the benefits of the collaborative effort and outcome (Mattessich et al., 2001). The ability to compromise is a WCFI factor that describes the ability of collaborating partners to compromise, since the goals and preferences of all members will unlikely be identical (Mattessich et al., 2001). The code collaborative climate represents policies, structure, and culture that may be in place to facilitate or sustain collaboration among organizations.

Participant Characteristics. A description of the important competencies or features of members of a collaborative group are encompassed in the parent code of participant characteristics. This parent code included the codes trust and respect, reliability and competence, and adaptability. All three codes were influenced by Mattessich et al. (2001) and derived from WCFI factors. The code for mutual trust and respect represents an essential requirement of collaborative partners in order to develop a collaborative process and to reach consensus (Cosner, 2009; Tapper et al., 1997; Taylor & Gilliam, 2011). Bstieler, et al. (2015) found that the level of trust among collaborative partners was positively correlated with innovation performance and knowledge transfer, which has implications for the productivity and sustainability of a collaborative effort. The code reliable and competent described a collaborative group member as being perceived as technically competent and dependable by peers and members of the community. The code adaptability describes the ability of collaborative members or a collaborative group to adjust to changes in conditions or demands in order to sustain and succeed.
**Communication.** The parent code communication includes the codes of open and frequent communication and informal relationships, which represent WCFI factors. According to Mattessich et al. (2001), open and frequent communication describes how collaborative group members interact often and share necessary information with collaborative members with transparency. The code informal relationships refers to the importance of establishing and maintaining informal communication links and relationships with collaborative members and other relevant stakeholders.

**Stakeholder Engagement.** Elements required for the effective engagement of participants and interested parties of a collaborative effort are included in the parent code of stakeholder engagement. This parent code comprised codes of diversity of participation, understanding the needs of others, the ability to explain the value of the collaborative effort, the act and ability to gain expertise and resources from stakeholders, and the ability to gain support from stakeholders. The code of diversity of participation was influenced by the WCFI factor of multiple layers of participation, which describes representation from every level of an organization in each partner organization (Mattessich et al., 2001). Diversity of participation expands on this factor by including representation from a diverse group of stakeholders that could have impact on shaping the quality of a collaborative effort as well as acceptance.

The code of understanding the needs of others was partially referenced in the WCFI factor of mutual respect, understanding, and trust; however, in this context, having a mutual understanding of needs extends to understanding others’ interests as well as the ability to build shared intellectual capital, including shared definitions of the problem and agreement on data, models, and projections (Innes & Booher, 1999). The code of explaining the value of
collaboration describes the importance and value of explaining the benefit of collaboration to potential collaborative partners. As Innes and Booher (1999) suggested, the act of explaining the value of collaboration builds shared intellectual capital and a desire to participate in a collaborative effort.

The code of gaining expertise and resources and the code of gaining support were influenced by the concept of participative decision making in collaborative processes. According to Yukl (2013), there is an opportunity to improve the quality of a collaborative effort by gaining expertise and resources from other stakeholders. Participation in collaborative processes by engaging stakeholders can also lead to greater acceptance and support. Stakeholder engagement through participative processes to gain expertise, resources, or support also leads to greater satisfaction with the initiative process.

**Resources.** The parent code of resources includes the inputs necessary to develop and sustain a collaborative group that includes the codes of understanding of one’s own capacity, having sufficient recourses, and the ability to leverage resources of others. The code of understanding of one’s own capacity and the code of leveraging resources of others are linked. In order to strategically seek the resources of others to gain resources or leverage the resources of a collaborative effort or member, one must understand the current capacity of the collaborative member or collaborative group. The code of having sufficient resources was a WCFI factor and described whether or not the collaborative group had an adequate and sufficient access to financial resources, staff, and materials necessary to support the collaborative efforts and outcome (Mattessich et al., 2001).
Emergence of a Triple Helix. Etzkowitz (2003) provided a framework for the parent code of emergence of a triple helix, which described how universities can assume a greater role as an entrepreneur in civic activities through maintaining its traditional role in the creation and dissemination of knowledge while taking on a new role in promoting innovation to enhance regional economic development. Three of the four stages of the emergence of a triple helix are reflected in the codes of internal transformation in each of the helices, influence of one helix upon another, and creation of new overlay of networks.

Interview Themes

Analysis of the interview data generated the emergence of several major themes and patterns that emerged from the data. These themes and patterns addressed the research question of how leaders from a mid-range university, industry, and government describe collaborative efforts to enhance regional economic development. The major themes were identified from analysis of the interview transcripts within sector leadership interviews and among the three sectors.

Following a discussion of major themes and patterns, specific themes were identified from analysis of coded segments of the interview transcripts. These specific themes or factors addressed the research question of how leaders of how leaders from a mid-range university, industry, and government describe collaborative efforts to enhance regional economic development.
**General Themes**

Several major themes and patterns emerged from the interview data and were supported from the document review. Many of these themes and patterns were consistent across the sector leadership cohorts: the university, industry, and government. Consistent patterns emerged from leaders across all three sectors. The essential role of proactive individual and institutional leadership was reflected across all interviews. All participants reflected on the importance of reputation and trust in the leader and the collaborative partner in order to commit resources to collaborate. The importance of creating a shared vision among stakeholders of these collaborative projects was another theme that emanated from all interviews. There were also subtle patterns and different priorities among the leaders by sector.

**Leadership is initiator of collaboration.** Across all interviews and cohort groups, participants attributed the institutional leadership of Point Park University and, in particular, the university president as being the initiator and catalyst for the collaborative projects analyzed in this study. One government participant said, “I think the leadership is probably the primary factor.” Another government participant made an assertion on the importance of leadership to launch major collaborative projects and stated, “First and foremost, you got to start with leadership at the top.”

A government participant commented that institutional leadership, extending to the board, was important to enable universities to advance their institutions in the area of impact in regional economic development:

Again, I think it goes back to leadership. I think it goes back to, not just the president but to the folks that sit around the board table. You have to be willing to pick your head up
and look around the world to see what some of these other university partners are doing and are doing well, and then how can you take that and acquire it to your own institution and to your own reason to see what opportunities exist.

Another government leader discussed the importance of leadership in the effectiveness of any regional economic development program. This leader commented, “I think at the end of the day, the success of the KIZ (Keystone Innovation Zone) program, or any program where our university partners are engaged, is really the role that leadership plays.” Overall government leaders attributed the university and its leadership with being the catalyst for these collaborative projects as well as their stewarding the success of these initiatives.

An industry participant credited the university president and noted the importance of leadership from the university:

I think Paul Hannigan as the president was a major player. Andy [Conte], on behalf of both the Trib and the University was a major force… I really give him and Paul almost all the credit. Leadership is really, really important. The president of the university is the key player.

University leaders concurred with this sentiment of the importance of the university taking the leadership role on these collaborative initiatives. One university leader commented:

Anyway, so who owns the process? So, the university wanted a lot of participation. It was a collaborative effort. But at some point, you’ve got the ideas. The decisions have to be made, and then somebody has to be the leader. And that was the university… I think Paul
[Hennigan] was intentional in the way he built his leadership team. And when he was hired, he came in with a very unique set of skills for a college president.

**Trust and reputation of collaborative partners is important.** When participants were asked what was important to them in their decision to collaborate with other organizations a theme emerged around trust and the reputation of the collaborative partner or leader. Having knowledge of reputation of a collaborative partner is an important factor in the decision to collaborate. An industry leader commented, “I would say that you know who your partners are. You know who are successful and reliable. They bring expertise as well as financial dollars to the project.” This sentiment was echoed throughout the interviews. Industry leaders commented on the importance of mutual understanding and interest in a collaborative project as well as a comfort level or trust with the partner. An industry leader commented, “I think an identity of interests coming together, feeling very comfortable with one another, and having an interest in the overall development of this project as it relates to the city and the county.”

University leaders consistently stressed the importance of mutual respect and trust in its ability to attract, retain, and engage future partners in collaborative efforts. A university leader commented on why a decision was made to collaborate with a particular bank on one of the projects, “They're a strong bank, a strong reputable bank, which is helpful. The other reason that we wanted to make sure that things went well with [this bank as a collaborative partner] is their building is right across the street.” Trust, reputation, and being a neighbor with mutual interests in the community were compelling reasons to collaborate. The university president elaborated on the significance of mutual respect and trust when pursuing future collaborative initiatives:
I think the number one critical criteria to pull off a phase two, three, or whatever it would be, would be to have earned the credibility that we did what we said we were going to do. Without that credibility, I don’t think there could be subsequent phases. I think people would just say, “Well, you know, you said you were going to do all that. You didn’t do it, or you didn’t do half of it or whatever.” Credibility is really, really important to earning the trust to do more. We take that credibility very seriously.

Another university leader reflected on how partners perceive the university as a partner because of their earned credibility. This leader commented:

[Future collaboration partners] can look back and say, “We gave you money for that. You built that. You did it exactly the way you said you would, on time, on budget. So we're going to take another chance on you to give you money for the next project.”

An interesting finding was that government leaders considered credibility and tenacity to persist through a project as an important factor in collaborating with the university on engagements. A government leader made the following observation:

I would also say patience and tenacity. I think it's really interesting that when Point Park decided to take this on, is when much of the country was actually in a recession. It wasn't our best economic times. But yet still they said, "We believe in it, and we're going to have the tenacity and the patience to slow walk it as necessary," because it didn't happen overnight. Looking back, it feels like it happened overnight, but it didn't. And they had the patience to say, "We will bite this apple one chunk at a time and work ourselves through it." That's to their credit.
Stakeholder participation yields quality collaboration and support. Leaders across sectors discussed the importance of process, particularly stakeholder engagement and participation as being vitally important to effective collaboration. Interview participants discussed the value of understanding the needs of stakeholders potentially impacted by regional economic development projects in order to ultimately gain their collaboration, if necessary, and their support. An industry leader stated, “The developer of the project, in this particular case, Point Park, has to know what is needed in the community. Financial institutions are willing to support it and so are the government entities, but they want viable projects because there's so many ideas for projects and limited government and foundation dollars.”

Point Park University utilized the Urban Land Institute to facilitate a robust stakeholder engagement process with the community to understand the needs of stakeholders that could add value to or be impacted by their desired development in the downtown area of Pittsburgh. A university leader described the thinking that went into following their approach to engage stakeholders to understand their needs:

We looked around and realized that other entities, like Pittsburgh Cultural Trust, like the Pittsburgh International Airport, had used the Urban Land Institute advisory process over the past. Different issues, but it was something that was interesting, and we thought, “Well let's take a look at it and see how we can apply this approach to a not for-profit, private institution, based in a central business district. How could that work for Point Park?”

The University president explained, “One of the very first things that we did early on, as we were envisioning the Academic Village project, was to bring in the Urban Land Institute to
facilitate a week-long planning process that engaged 150 community stakeholders, downtown stakeholders, because we didn’t even want to take for granted that downtown would accept and embrace the expansion of the University. Another university leader commented, “The University wanted to truly open their ears and listen, and then use that.”

Industry and government participants described the importance and ability of the university to understand the needs of the community. One government leader commented:

[The president] understood what the plans and the wishes and the desires of downtown to be a 24-hour vibrant downtown, and how students and downtown could connect and not be off to the side. And how this could be part of a revitalization strategy for that section of Downtown, which was not at the core of the downtown but needed development and this enhanced Downtown as a whole... Point Park had that awareness. They knew because the president reached out beyond the geographic location, and they knew how to maximize opportunity. There's an opportunity for Point Park. They needed to grow, and they needed space. And they needed to look differently than they had, and they also knew what the City's goals were...

Understanding the needs of others was critical to gaining acceptance from the community on these projects. Another government leader recalled:

Early on, there was concern over saving some of the façade, over some of the demolition, and Point Park was very willing to say, "Let's have every stakeholder meeting necessary to show this is exactly what we want to do, and based upon feedback, how it needs to be adjusted.”
In the stakeholder engagement process, participants described needing assistance in expertise and resources as well as acceptance to ultimately ensure success of the collaborative initiative. A university leader stated, “We knew that we would need the assistance of many. It could mean that it's dollars. It could mean that it's support. It could mean that it's brain power.” The same university leader summarized the value of the stakeholder engagement process:

Everybody had buy-in to this that they felt this wasn't just a university product when it was done. It was a report that helped everybody to feel like, “Hey, we invested in this, and now we've got buy-in into this through the future.”

The document review provided detailed methodologies and plans to engage stakeholders. The university’s strategic plan outlined the goals, strategies, and resource requirements that were needed by the university in order to achieve its vision. The Urban Land Institute Advisory Panel process provided a systematic approach for engaging stakeholders in the community to create a dynamic neighborhood that would benefit the university as well as the community (Urban Land Institute, 2007).

**Creating a shared vision drives successful collaboration.** Another theme that emerged across all interviews was the importance of developing a shared vision and how arriving at a shared vision is the desired outcome from stakeholder engagement. Most leaders stressed that stakeholder engagement was vital in order to develop a shared vision for collaborative projects to advance regional economic development. The shared vision may exist at the outset of collaborative process, or it may develop during the collaborative process. Shared vision was of significant importance to university leaders, and acknowledgement of the importance of
developing a shared vision with the community appeared to be a driver to the university’s collaborative efforts. A university leader made the following observation:

I think it was also Paul's [Hennigan] leadership as the president of the university, putting together what was his first, like really his, academic strategic plan and having a vision that there was a way to take the academic strategic plan and somehow figure out what's the community plan that goes with this and understanding that you have to be an integrated part of the larger community and not an island.

The university president provided additional context on how the institution provided leadership in developing a shared vision for the Downtown Pittsburgh neighborhood and how this process began to enhance the profile of the University:

There was now an entity in Downtown Pittsburgh, other than the Cultural Trust, that was saying, “We’re going to revitalize our neighborhood,” and we were the only other ones at the time besides the Cultural Trust. A lot of those comparisons were being made. As a matter of fact, the reason why we did the ULI process is because the Trust had done the same thing earlier in their visioning exercise. People were saying, “Wow! We've got the Cultural Trust that went through the same process and look at what they’re doing. Now, Point Park is saying they want to do the same thing.” That really is when the profile of the university began to rise.

The process of developing a shared vision with others in the collaborative effort was also mentioned across many of the interviews. A university leader provided an example of how she engaged a regional electricity provider to buy into the vision for the Academic Village initiative:
I just sat there and pointed across the street and said, "This is what we want to do with the facade of the School of Business and what not." And he saw the vision, and he was one of those community leaders that said, "You know what? We'll give you some money. So you help us to get neighborhood tax credits that will expand the amount of money we can give you, and you can do historic lighting on Lawrence Hall."

A government leader discussed the importance of demonstrating mutual value among key stakeholders in order to effectively develop a shared vision:

To determine success. I guess I would need to demonstrate how this is both a benefit to the university itself, but also, of equal benefit to the host municipality. How do they benefit from us engaging in this redevelopment? How will this benefit and potentially draw additional residents to downtown? How will this benefit the potential of raising the value of the surrounding area, so that there's more tax collected? How will this, in their case, benefit whereby we get streets fixed up and we get new lighting. We get better, safer streets through this redevelopment? How do I literally lay out the win-win scenario, so that it's not just servicing my needs? As the university, I'm not just gobbling up more property, but that I'm able to show here's the true win. We were able to benefit our students, and the city benefited by these ways in return.

The university president expanded on this concept and stated, “If you can articulate the vision and make it compelling, people will come along. At least in this town, they will. Pittsburgh is known to be a very community-focused town, very philanthropic, and it works in this town.”
Self-interest motivates collaboration. University, industry, and government leaders viewed collaboration as in their self-interest. One industry leader conveyed that any project improving the downtown area was in the interest of their company since that is where their company is based. Both industry leaders mentioned that it was in their organizations’ interest to collaborate in regional development projects with the University because improvements to the region benefit all members of the community.

Having a mutual interest among collaborating partners was an attractive factor to successful collaboration. One example that exemplified this was the location of a development project where an industry partner valued an opportunity for signage, and the university valued a prominent location. One industry leader stated, “But location is always an important factor. Particularly, that's what the Trib's interest was, having their signage in an appropriate location, and of course, the University wanted to have it placed in a prominent location.” This industry leader posited, “You have an identity of interest.” The leader explained that that a leader or organization must first have an interest in the initiative to even consider joining a collaborative effort.

University leaders recognized that collaboration was in their self-interest. The university president stated, “The reason why we decided to collaborate is because we knew we couldn’t do anything on our own, or very little on our own, and so we knew we needed partners early on.” The university’s strategic plan corroborated this as it identified the need for collaboration with industry, government, and the community in order to accomplish the university’s vision. Another university leader commented:
It was saying internally to the university, “We're opening our doors. We're stepping outside of the comfort zone.” And saying to the community, “We want to invite you to come inside. Meet us outside of the comfort zone of this university and figure how, as a team, we can work together.” Because whatever the university does, again, based on its geography, it's going to help the whole area. It was important to us to have foundation support because Pittsburgh is so fortunate to have such a deep bench when it comes to foundation support that is available in a lot of different areas. It was important to have the elected leaders because they are the individuals that hold the purse strings to many important pots of money that the university felt would be important to certain pieces of the development. It was important to have the corporate community because they are a part, an important part, of downtown. I think just by location, being across the street from PNC, being next to Bank of New York Mellon, you fill in the blank.

One example was how a university leader described the importance of collaborating with the City of Pittsburgh, not for any anticipated funding but for technical expertise that would be required for the project:

The City is a great example of that. They had no money. They're still in oversight or coming out of it. We knew that whatever the outcome was that lead us to the Academic Village, the City wouldn't necessarily be a financial investor, but it was priceless, the institutional knowledge that they could bring to the table because they're the ones that control the streets, the city standards, all of those things. Again, understanding what is Point Park and what it is not. And who has that expertise and knowledge that we needed?
That was just as important as understanding, “Here's a corporation. Here's a government entity that has money.” It's also the knowledge that [the City] brought to the table.

Government leaders provided several examples of how collaboration with universities and industry was in the government’s interest to advance policy objectives like advancing high-technology, early-stage companies and encouraging mid-range universities to expand their impact on the region, beyond their typical mission of educating students. When one government leader was asked why they would collaborate with a university like Point Park University, the government leader responded:

I think for a variety of reasons, but one of the most prominent reasons that we're working with them is the eds (education industry) and meds (medical industry), in our opinion, have turned around in Pittsburgh economy. The collaboration with the universities has a number of benefits to it. First and foremost, kids bring money. Money helps the economy, obviously. Secondarily, we hope to capture a lot of these younger folks that come here to keep them to stay here because we're going to have a shortage of people filling in for the baby boomers as they leave.

Several government leaders explained how it was in the interest of the city, county, and state government to collaborate with Point Park University since the university had a desire to redevelop a section of Downtown Pittsburgh that was not going to be improved by any of the government entities on their own in the near future. These leaders expressed that there was mutual interest and desire to collaborate on these projects.

**Open and honest communication enables collaboration.** All university leaders interviewed conveyed the desire of the university to have open communication. From the
university leader perspective, the communication was deliberate and frequent, and it was vital to engaging stakeholder participation. One university leader described the process like this:

The university wanted a lot of participation...We started a discussion at this big table, including as many voices as we could find… Early on, it was a very intense and intentional. We're going to give you an update depending on who you are. If you were funders, you were getting updates on a much more frequent basis. If you were that broader part of the community, the university maybe did quarterly updates, but we kind of tailored it to who those people are… There were very specific communication strategies.

That same leader than described how communication continued to the very end, to celebrate the opening of the Academic Village:

We did a big kick off. I can still see the ballroom over in Lawrence Hall because it was packed. It had everybody that was anybody in the community. It was the Allegheny Conference all the way down to the Schiller family that has owned little buildings here and there throughout downtown for a hundred years. But everybody was there so that Paul Hennigan could unveil, “We asked you for your advice. We asked you for your thoughts. We've married it with the academic strategic plan of the University. Now I want to unveil to you the Academic Village Initiative. And we pledge to you that this is what we're going to build. It may take us a long time, but this is what we're going build to these standards because of your input.”

The university president described the importance of open and frequent communication to the quality of their collaboration with community stakeholders, “It was very open, and it was
very fluid. And what it did, too, was it elevated the conversation.” The president noted that early and often communication was a critical success factor of their collaborative efforts.

Government leaders lauded university leaders on the open and frequent communication in their collaborations. One government leader described the university’s communication efforts, “They were open. They shared what their plans were in advance of going to Harrisburg, which for us is important because we get so many requests, prioritizing from our point of view.” That same leader indicated that the university’s inclusiveness and open and frequent communication were a critical success factors in their success:

First and foremost, that it was inclusive. This was not brought to us, “We're doing this.” It was, “Can you give us your thoughts on? Can you support this? Can you understand why this is important to the University, and how we think we may better the community?” I think it's, in particular with the Point Park pieces, what I have personally enjoyed is that they didn't wall the community off. They invited the community in.

**Informal relationships facilitate collaboration.** When building a collaborative process and sustaining the process, leaders across all three sectors discussed the importance of developing relationship and informal communication links. It was mentioned in several interviews that certain initiatives or elements of projects would have never happened had it not been for a personal relationship between leaders. One university leader indicated, “You need to have relationships before you start asking for things.” A government leader remarked, “A lot of times, again, it's a start based on relationships that I have with the university.” A university leader commented, “…continuity of leadership is important for these projects.” An industry
leader expanded on this concept and said, “Once you build that relationship, you just keep growing that relationship in other ways.”

Several leaders conveyed examples where informal relationships and networks contributed to new opportunities. One industry leader described a situation where a coincidental connection was made between two individuals that led to an opportunity and remarked, “Those kinds of things flourish coincidentally. Who would have known that something like that would have had a mutuality of interest?”

Relationship building is a continuous process and occurs throughout the planning and development processes. A government leader made the following observation of the university:

They really have to develop relationships. I would say that while they're developing their strategic plan that they work on building relationships on the outside at the same time. Because if you already have those relationships with a broader community and they're good and others trust you and you trust them, then you have the basis for a good collaborative effort. They're already aware of you. You're already aware of them. You're getting to know them. They’re getting to know you. And you know where they're going to disagree and where you have opportunities to come together, and you build on those opportunities. If you just go out and do your strategic plan and you have not connected with anybody else, your project just going to fail.

From the university perspective, it is important to maintain informal relationships and communication links. The university president remarked, “Engagement continues to this day. I mean, we spent a lot of time with government, philanthropy, corporations, letting people know what we’re doing, a lot of time.” When asked about critical criteria for success in these
collaborative efforts, a government leader commented, “I think you have to have good relationships.”

**Differences among leader cohorts.** Even though there were similarities in themes and patterns among leaders from the university, industry, and government sectors, there was little discussion on the process of collaboration, particularly around the importance of stakeholder engagement and the outcome of attaining a shared vision among industry leaders. The process of stakeholder participation in order to gain consensus around a shared vision to ensure benefit to not only the university but also the public was important to government and university leaders. One government leader stated, “It's very helpful for us to understand where we might be asked to support something in the future, knowing that it's coming down the pike.” University leaders understood the value of stakeholder engagement and the value of developing a shared vision. All of the university leader interviews and documents that were reviewed elaborated on the importance of a transparent process with open communication in these collaborative efforts.
Specific Themes Derived from Coded Segments

The coding scheme resulted in 805 coded segments throughout the nine interview transcripts. The coded segments represent specific themes identified from the interview data. The code system showing the frequency of the 28 coded segments, organized by eight parent codes, is shown for each leadership cohort as well as the sum for each cohort and coded segment in Table 6.
Table 6. Frequency of Coded Segments by Sector Cohort

<table>
<thead>
<tr>
<th>Code System</th>
<th>University</th>
<th>Industry</th>
<th>Government</th>
<th>SUM</th>
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<tr>
<td><strong>Leadership</strong></td>
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<tr>
<td>Proactive leadership</td>
<td>25</td>
<td>7</td>
<td>34</td>
<td>66</td>
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<tr>
<td>Foster collaboration</td>
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<tr>
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<td>343</td>
<td>805</td>
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Figure 1 displays the frequency of the sum of all 28 codes in a Pareto format, highest frequency to lowest frequency.

Figure 1. Frequency of Coded Segments
The frequency and percentage of the coded segments is displayed in Table 7. The parent code is shown with each code or theme.

**Table 7. Coded Segments by Frequency and Percentage**

<table>
<thead>
<tr>
<th>Parent Code</th>
<th>Code</th>
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<th>Percentage</th>
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In order to understand the relative frequency of coded segments within each leadership cohort, Table 8 shows a matrix where the size of a box within each coded segment within a
leadership sector column correlates with the frequency of coded segments within a leadership cohort.

*Table 8. Intensity of Coded Segments within each Sector Cohort*

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<th>Industry</th>
<th>Government</th>
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<td>Foster collaboration</td>
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<td>Risk taking</td>
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<td></td>
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<td>16</td>
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<td>Attainable goals and objectives</td>
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<tr>
<td>Clear roles and responsibilities</td>
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<tr>
<td>Shared ownership of process and outcome</td>
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<td>Collaborative climate</td>
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<td><strong>Participant Characteristics</strong></td>
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<tr>
<td>Creation of new overlay of networks</td>
<td></td>
<td></td>
<td></td>
<td>7</td>
</tr>
</tbody>
</table>

SUM | 342 | 120 | 343 | 805
An explanation of the top 13 coded segments in frequency that account for 67 percent of the coded segments are described in this section. The frequency and percentage statistics for the coded segments are shown in Table 5.

**Proactive leadership initiates collaboration.** This coded segment represents interview comments that describe the proactive leadership of an individual or organization. As shown in Figure 1, proactive leadership was cited 66 times across all interviews. It was the most frequently cited segmented code, which accounted for 8.2 percent of all segmented codes. As shown in Table 6, aspects of proactive leadership were more frequently discussed in the university and government leader interviews as compared to other themes within each respective cohort group. As cited earlier in this section, leaders across all three sectors made comments that leadership was critically important to initiate collaborative projects to advance regional economic development as well as to maintain momentum for a successful result.

**Creating a shared vision will garner quality collaboration and support.** Discussion on the importance and process of developing a shared vision with stakeholders to gain consensus on the projected outcome for these collaborative projects was the second-most frequent coded segment. Comments related to developing a shared vision were made 60 times across all interviews and accounted for 7.5 percent of all coded segments. The importance of development of a shared vision as an element of the process for engagement and acceptance of collaborative projects was particularly important to university leaders. The university president stated, “If you can articulate the vision and make it compelling, people will come along.” This statement encompasses the university’s understanding and importance it placed on developing a shared vision as it collaborated with industry and government on these projects.
Self-interest motivates collaboration. Interview statements relating to collaboration being in one’s or an entity’s self-interest was the third most frequent of the coded segments with 49 coded segments, accounting for 6.1 percent of all coded segments. Earlier in this chapter several examples and statements described how self-interest motivated the desire of leaders to collaborate with others. Collaboration in one’s self-interest was a relatively important theme in the industry leader interviews as compared to university and government leader interviews as shown in Table 6.

Open and frequent communication enables collaboration. Coded segments that described transparent and frequent communication occurred 46 times across all interviews and represented 5.7 percent of all coded segments. As described earlier in this chapter, university and government leaders stressed the importance and value of having open and frequent communication, particularly as a strategy to engage and keep engaged stakeholders in these collaborative processes. As shown in Table 6, open and frequent communication, relatively, was infrequently coded in industry interviews and moderately identified in university and government leader interviews.

Diversity of participation encourages robust engagement and support. This coded segment represents interview comments that describe the value of having participation from a diversity of groups and at all levels within an organization. This coded segment ranked fifth among the 28 segments and was coded 42 times, accounting for 5.2 percent of all coded segments. Interview participants described the importance of having a diverse group of stakeholders engaged to garner expertise and acceptance. It was also found that diversity of participation must occur within large organizations as well. A government leader commented, “If
you don't have collaboration at all levels, then it’s hard to make things happen.” University leaders provided examples in the interviews as well as through documents that were reviewed on the importance of diverse and ample participation. The university president described a process where the university put together a list of 125 stakeholders with over 90 percent participation to develop a shared vision for the Academic Village project.

**Informal relationships facilitate collaboration.** The importance of informal relationships and connections to start and maintain collaborative processes in these initiatives to enhance regional economic development was the sixth-most frequent theme among the 28 coded segments. This coded segment was identified 39 times, representing 4.8 percent of all coded segments. Informal relationships described the value of friendships and the ability to informally communicate with others. These informal relationships enhance open communication, strengthen trust, and lead to future collaboration. An industry leader described this concept:

> We feel comfortable with who we work with. It is critical to know who your partners are. It makes it a lot easier than the first time around when you're trying to do a big project, like the [Academic] Village. It's true for us too because if Point Park is looking for somebody to assist them with future development projects they're more likely to come back to PNC if we were successful as a team. Once you build that relationship, you just keep growing that relationship in other ways.

**Sufficient resources are necessary for sustainable collaboration.** The need to have sufficient financial resources, expertise, staffing, or other resources was identified in 36 coded segments, representing 4.5 percent of all segmented codes. As shown in Table 6, the theme of having sufficient resources was slightly more prominent in university and industry leader
interviews, relative to other coded segments within those sector cohorts. Most of the leaders interviewed in this study made similar comments as one of the industry leaders who retorted, “Of course, money is the key thing.” The ability to source and acquire capital and operating funds for these projects was important to the effectiveness of the collaborative effort. A government leader summarized the need for funding in the following way:

The primary thing, as it is in everything that we do, is funding. If we don't provide proper funding to support an initiative, I historically have found that initiatives will limp along, and they will eventually get done. But sometimes you need that level of funding and support from the commonwealth, or the federal government, or foundations in order to actually catapult the mission so that it actually is comes to fruition. I just find that oftentimes that's been our biggest challenge.

In the future, it was evident that leaders believe that universities would have to use more of their funds to invest in collaborative regional economic development projects in the future. One university administrator summarized this phenomenon the following way:

I think ten years from now, the university would have to have a lot more of its own money to take on the majority of the work that's taking place. And I say that because there are dwindling opportunities for government funding because of change of leadership at the federal level and kind of that ping-ponging back and forth between what is the role of the federal government at a state level.

Ten years ago, subsidies were an expected part of any project. It didn't raise an eyebrow for the university to say, "Here's our funding strategy. Here's how much money we're going to put in. Here's how much money we're going to raise. Here's the amount of debt.
Here's what we'd like from…” Fill in the blank. Those don't exist anymore, and I think that there's also been a change at the foundation level about the way they look at how they're funding is done, at least for Pittsburgh and the major foundations.

Government leaders consistently commented that their access to resources had diminished significantly over the years; however, they provided numerous examples of how they have become more effective at leveraging and directing others to the resources of other entities or financing instruments.

**Leveraging the resources of others mitigates deficiencies in resource.** The leverage of resources was mentioned in 36 coded segments, accounting for 4.5 percent of all coded segments. Leaders of all three cohort groups commented on the importance of recognizing and utilizing the resources of other entities in order to accomplish collaborative projects. University leaders understood their limitations, and they realized that they had to leverage resources through collaborative efforts in order to pursue projects to enhance regional economic development. A university leader stated:

It was also important to understand that the University can only do so much. And we knew that we would need the assistance of many. It could mean that it's dollars. It could mean that it's support. It could mean that it's brain power.

A government leader indicated that the City of Pittsburgh also understood the city’s limitations on access to resources and how collaboration and the leverage of resources of the university could have mutual benefit. This government leader commented, “That was part of the City plan and hope, and they were able to leverage each other. The City wanted to have a more vibrant downtown. Point Park already had a great arts program.”
Understanding the needs of others is the first step to build collaboration. The theme of understanding the needs of others describes the need and value to understand the needs and desires of stakeholders in order to engage them in a collaborative process and to ultimately gain their acceptance. This theme was found in 36 coded segments, representing 4.5 percent of all coded segments. As shown in Table 6, university and government leaders valued the need to understand the needs of others slightly more than industry leaders, relative to other coded segments within their respective cohort groups. Interview participants discussed the value of understanding the needs of other stakeholders and the market in order to ultimately gain their acceptance and collaboration if desired. An industry leader stated, “The developer of the project, in this particular case, Point Park, has to know what is needed in the community. Financial institutions are willing to support it and so are the government entities, but they want viable projects because there's so many ideas for projects and limited government and foundation dollars.”

Point Park University utilized the Urban Land Institute to facilitate a robust stakeholder engagement process with the community to understand the needs of stakeholders that could add value to or be impacted by their desired development in the Downtown area of Pittsburgh. A university leader described the thinking that went into following their approach to engage stakeholders to understand their needs:

We looked around and realized that other entities, like Pittsburgh Cultural Trust, like the Pittsburgh International Airport, had used the Urban Land Institute advisory process over the past. Different issues, but it was something that was interesting, and we thought, “Well let's take a look at it and see how we can apply this approach to a not for-profit,
private institution, based in a central business district. How could that work for Point Park?”

The University president explained:

One of the very first things that we did early on, as we were envisioning the Academic Village project, was to bring in the Urban Land Institute to facilitate a week-long planning process that engaged 150 community stakeholders, downtown stakeholders, because we didn’t even want to take for granted that downtown would accept and embrace the expansion of the University.

Another university leader commented, “The University wanted to truly open their ears and listen, and then use that.”

Industry and government participants described the importance and ability of the university to understand the needs of the community. One government leader commented:

[The president] understood what the plans and the wishes and the desires of downtown to be a 24-hour vibrant downtown, and how students and downtown could connect and not be off to the side. And how this could be part of a revitalization strategy for that section of Downtown, which was not at the core of the downtown but needed development and this enhanced Downtown as a whole... Point Park had that awareness. They knew because the president reached out beyond the geographic location, and they knew how to maximize opportunity. There's an opportunity for Point Park. They needed to grow, and they needed space. And they needed to look differently than they had, and they also knew what the City's goals were…
Understanding the needs of others was critical to gaining acceptance from the community on these projects. Another government leader recalled:

Early on, there was concern over saving some of the façade over some of the demolition. Point Park was very willing to say, "Let's have every stakeholder meeting necessary to show this is exactly what we want to do, and based upon feedback, how it needs to be adjusted."

**Trust and respect of a collaborative partner is critical for collaboration to begin and sustain.** The level of trust and respect among collaborative partners was frequently cited as being important in establishing and maintaining a collaborative process by interview participants. This coded segment accounted for 4.3 percent of all coded segments with 35 identified segments and ranked tenth among the 28 various coded segment types. The university president stressed the importance of trust and credibility in order to engage collaborative partners:

I think the number one critical criteria to pull off a phase two, three, or whatever it would be, would be to have earned the credibility that we did what we said we were going to do. Without that credibility, I don’t think there could be subsequent phases. I think people would just say, “Well, you know, you said you were going to do all that. You didn’t do it, or you didn’t do half of it or whatever.” Credibility is really, really important to earning the trust to do more.

When asked about the importance of relationships and the level of trust that one has with a potential collaborative partner, an industry leader said, “I think the trust was a very important factor.” This industry leader further commented, “I think the lines of communication were always open, and everybody was always honest with one another. That kind of collaboration
works.” A government leader expanded on the significance of trust by incorporating the importance of respect for what has been accomplished by a collaborative partner:

I respect what [the university president has] done down there. I think he's done a great job. I also think Paul brings to the table, not only the University’s priorities, but it shines through that the University actually has great interest in their students.

**Collaborative climate facilitates partners working together.** A community culture that is open and accepting of collaboration among organizations was reflected among 33 coded segments across the participant interviews, accounting for 4.1 percent of all coded segments. A government leader made the following reflection on the collaborative climate in these university-industry-government initiatives:

The philanthropic community is tied into the universities. They're tied into the government’s structure. We've been extremely blessed that people here work together. When we go out, and particularly if you were to talk to [County Executive] Rich Fitzgerald about this, he serves on the board of the National County and Associations. He hears the things about other cities, some that everybody holds up as great places, Austin or others. When he says how we're working together with the universities, the business, the philanthropic, the government, they're all saying, “We don't do that. They do their thing. We do our thing.” Right now, we're a model.

**Reliable and competent leaders and organizations attract collaborative activity.** The perception or reputation of a leader or organization as being reliable and competent was mentioned in 32 coded segments, representing 4 percent of all coded segments across all interviews. Having a reputation of being a reliable and competent partner was important for
individuals and organizations in their decision to collaborate with a leader or organization. An industry leader discussed the importance of understanding the reliability and competence of collaborative partners and said, “I would say that you know who your partners are. You know who are successful and reliable. They bring expertise as well as financial dollars to the project.” A university leader reflected on the importance of reliability and competence and described how collaborative partners viewed the university as a partner:

They can look back and say, "We gave you money for that. You built that. You did it exactly the way you said you would, on time, on budget. So we're going to take another chance on you to give you money for the next project."

**Gain support.** The theme of gaining support was critically important to university leaders and not to the other leader cohorts. This theme was coded in 28 segments, accounting for 3.5 percent of all coded segments, with 24 mentions in university interviews and 4 in government interviews. University leaders were motivated to gain support of a multitude of stakeholders because they reflected that they needed assistance, expertise, resources and support or minimal resistance. A university leader stated, “We knew that we would need the assistance of many. It could mean that it's dollars. It could mean that it's support. It could mean that it's brain power.”

**Major Themes Derived from Parent Codes**

Specific themes or codes were grouped into parent codes or major themes. The frequency of parent codes or categories is shown in Figure 2. This analysis illustrates the number of times that issues related to the 8 categories or parent codes were identified in the interviews. The relationship of parent codes as percent frequencies is shown in Figure 3.
Figure 2. Frequency of Parent Codes

Frequency of Parent Codes

- Stakeholder engagement: 157
- Planning: 144
- Collaboration: 112
- Leadership: 109
- Resources: 88
- Communication: 85
- Participant Characteristics: 84
- Emergence of Triple Helix: 26

Figure 3. Percentage Frequencies of Parent Codes

Percent Frequencies of Parent Codes

- Stakeholder engagement: 19%
- Planning: 18%
- Collaboration: 14%
- Leadership: 14%
- Resources: 11%
- Communication: 11%
- Participant Characteristics: 10%
- Emergence of Triple Helix: 3%
Stakeholder engagement yields quality collaboration and support. Themes dealing with elements of the stakeholder engagement process were strong and consistent across all three cohorts of leaders as they were cited 157 times across all interviews, representing 19 percent of all coded segments. This category included the coded segments of acknowledgement and significance of the importance of having a diversity of participation in a collaborative process, the value of understanding the needs of others, explaining the value of collaboration, the desire to gain expertise and resources through the engagement of stakeholders, and the need to gain the acceptance or support of interested stakeholders. This group of themes were important considerations to leaders and guided their actions as they collaborated with others to advance regional economic development projects.

Several documents reviewed for this study supported the importance of stakeholder engagement and detailed strategy for developing stakeholder engagement processes as well as tactics for implementation. A robust stakeholder engagement process to create the university’s strategic plan was described in a self-study document (Point Park University, 2011). The ULI Advisory Panel Process provided strategies on how to engage a broad, diverse set of community stakeholders with detailed actions on execution (Urban Land Institute, 2007).

Planning provides the structure for effective collaboration. Themes identified in the interviews describing aspects of planning were noted 144 times across all interviews or 18 percent of all major themes. The process of planning, which included elements of developing strategy for a collaborative process as well as tactics and targets was prevalent throughout the interviews. This parent code or major theme included the coded segment themes of developing a shared vision, creating a unique purpose, developing or achieving attainable goals and
objectives, having clear roles and responsibilities in a project, and the value of having shared ownership of process and outcomes of a collaborative initiative. This major theme was dominated by the specific theme of developing a shared vision.

The elements of planning, both in development of strategy and tactics, were prevalent in the documents reviewed in this study. As mentioned in the last section, the university’s strategic plan was robust and incorporated all elements of planning. The Pittsburgh Downtown Partnership Business Plan (Pittsburgh Downtown Partnership, 2006) and the Pittsburgh Market Square Vision and Action Plan (Project for Public Spaces, 2006) are both planning documents that were initiative by industry and included the university and government to develop a shared vision for development projects as well as strategic plans and business plans for regional economic development. The New Pittsburgh Playhouse Business Plan (Urban Redevelopment Authority of Pittsburgh & Point Park University, 2014) was a collaborative planning document authored by the university and government to create the vision, strategy, and a tactical business plan for the creation of a new Playhouse Theater.

**A cooperative environment fosters collaboration.** This parent code or major theme accounted for 112 coded segments or 14 percent of all major themes. Collaboration as a category included themes depicting a history of collaboration, collaboration as being in the self-interest of an individual leader or organization, ability to compromise, and whether there was a culture that was welcoming of collaboration.

Documents reviewed for this study included evidence of collaboration among university, industry, and government leaders. The New Pittsburgh Playhouse Business Plan and Urban Land Institute Advisory Panel Process were planning documents that were collaboratively developed.
The Urban Land Institute Advisory Panel Process provided the plan for collaboration and stakeholder engagement for the Academic Village.

**Leadership initiates and sustains effective collaboration.** Themes or coded segments of proactive leadership, fostering collaboration, and risk taking comprised the parent code of major theme of leadership. This parent coded encompassed 109 coded segments or 14 percent of all major themes. The parent code or major theme of leadership was dominated by the code or theme of proactive leadership, which was prominently discussed in the university and government leader interviews.

The document review suggests that the theme of leadership was important since many of the documents were plans developed to proactively take the lead on initiatives, to collaborate among other stakeholders for support and resources, and to identify, assess, and mitigate risk. Every major document reviewed for this study was generated as a blueprint to take proactive leadership and to collaborate.

**Resources are necessary to sustain collaborative efforts.** The major theme of resources encompassed the understanding of an organization’s capacity to address projects as well as capacity to collaborate, an understanding and ability to acquire sufficient resources to address major projects, and the ability to leverage resources of others on collaborative engagements. This category or major theme was comprised of 88 coded segments or 11 percent of all coded segments.

All of the planning documents reviewed in this study addressed resource requirements needed for these collaborative projects as well as an assessment of current capacity of the university, which made the case for a collaborative approach. The New Pittsburgh Playhouse
Business Plan, Pittsburgh Market Square Vision and Action Plan, Pittsburgh Downtown Partnership Business Plan, Urban Land Institute Advisory Panel Process, and the university’s Strategic Plan identified resource requirements for collaborative projects as well as needed resources beyond the current capacity of the collaborative partners.

**Communication enables collaboration.** The codes of open and frequent communication and informal relationships were grouped into the parent code or major theme of communication. This major theme was identified 85 times across all interviews or 11 percent of all coded segments.

Open and frequent communication among collaborative group members was important to not only inform members of the collaborative effort but also to those interested parties outside of the collaborative group. Equally important to participants was the establishment of informal relationships and communication links, including personal connections. It was believed that these informal relationships created a higher level of familiarity and trust, leading to a more cohesive group and working relationships.

**Participant characteristics and competencies enhance collaboration.** This category refers to the characteristics of collaborative participants, including trust and respect for a collaborative partner or leader of a collaborative partner organization, reliability and competence of a collaborative partner, and adaptability of a collaborative participant. This major theme occurred 84 times across the nine interviews, accounting for 10 percent of all coded segments.

**Emergence of a Triple Helix.** The process describing the emergence of a triple helix (Etzkowitz, 2003) was identified 26 times across all interviews or 3 percent of all coded segments, primarily across government interviews. There was acknowledgement and evidence
that the university played a role in society beyond training students and conducting research. Numerous references to specific policies were noted in the government interviews that demonstrated the second stage of emergence of a triple helix, specifically the influence of one helix upon another, in this case government. The government interviews also identified several examples of new collaborative entities being created among foundations and banks, to review regional projects and investment opportunities, to the creation of new collaborative entities like Urban Innovation 21, which was a collaborative entity created to utilize a regional economic development program created by the Commonwealth of Pennsylvania to stimulate university-industry-government collaboration.

**Results**

The Results of this single instrumental case study approach, focusing on university collaboration in regional economic development, provided significant insight to answer the research question: How do leaders from a mid-range university, industry, and government describe collaborative efforts to enhance regional economic development? The findings from an extensive document review and semi-structured interviews with leaders from a mid-range university, industry, and government offer an understanding of the collaborative process and how university leaders collaborate with leaders in industry and government to advance regional economic development. The Cross-Source Data Analysis, as shown in Table 9, describes four major themes that emerged from the document review, field observations, and interviews. The themes provide evidence that effective tripartite collaboration of university-industry-government partners involves the practice and mastery of several competencies in the area of leadership, planning, stakeholder engagement.
### Table 9. Cross-Source Data Analysis

<table>
<thead>
<tr>
<th>Theme</th>
<th>Document Review</th>
<th>Field Observations</th>
<th>Interviews</th>
</tr>
</thead>
</table>
| Proactive university leadership | • Urban Land Institute Advisory Panel Process provided framework/process for stakeholder engagement and was catalyst for university’s leadership in stakeholder engagement  
• Civic group plans incorporated stakeholder feedback in recommendations | • Stakeholder engagement was regularly discussed by university leaders when discussing management issues of collaborative efforts  
• Government programs often encouraged collaboration and engagement of stakeholders to develop programs/projects to enhance regional economic development | • A robust stakeholder engagement process was essential to the development of a shared vision and subsequent acceptance and success of collaborative efforts  
• Tripartite collaborative leaders consistently described elements of a successful stakeholder engagement process |
| Planning and shared vision   | • University’s strategic plan provided clear targets, accountability, ability to manage/evaluate progress  
• Urban Land Institute Advisory Panel Process provided framework to develop a shared vision  
• Civic group plans stressed importance of collaboration among City stakeholders to develop vision and plans | • Planning and strategic management was a university discipline  
• Industry and government leaders referenced and relied upon plans as part of their due diligence to justify their engagement  
• Processes utilized to develop shared visions for collaborative efforts were frequently cited by leaders | • Purpose and agreement on a shared vision among collaborative partners was important to initiate and sustain collaborative efforts  
• A commitment to planning was necessary to initiate collaborative efforts attract the interest of key partners  
• Planning processes utilized stakeholder engagement in to develop a shared vision |
| Stakeholder engagement       | • Urban Land Institute Advisory Panel Process provided framework/process for stakeholder engagement and was catalyst for university’s leadership in stakeholder engagement  
• Civic group plans incorporated stakeholder feedback in recommendations | • Stakeholder engagement was regularly discussed by university leaders when discussing management issues of collaborative efforts  
• Government programs often encouraged collaboration and engagement of stakeholders to develop programs/projects to enhance regional economic development | • A robust stakeholder engagement process was essential to the development of a shared vision and subsequent acceptance and success of collaborative efforts  
• Tripartite collaborative leaders consistently described elements of a successful stakeholder engagement process |
| Collaboration in self-interest | • University planning documents for major projects included identification of needs and assessment of internal capacity that identified rationale for collaboration | • Government officials and programs encouraged collaboration in order to extend and leverage its resources  
• Industry provided support and integration and promoted its involvement | • University, industry, and government leaders identified that collaboration was in their self-interest  
• Collaboration was seen as necessary to supplement resources, mitigate gaps in expertise/resources, and leverage resources |
Proactive Leadership

Skilled leadership was described by leaders of a mid-range university, industry, and government as the primary factor to successful collaboration. Study participants described the importance of skilled leadership to initiate and sustain an effective collaborative process and outcome when advancing regional economic development in a tripartite effort. It was held that leadership within the university was critical for the university to set its vision and to determine that it was in its interest to collaborate with others. Skilled leadership was also important to engage and earn the trust of other collaborative partners to develop, sustain, and succeed in collaborative efforts.

Planning and Shared Vision

The results of this study described the importance of purpose for collaborative efforts to commence and sustain and, in particular, the significance of a shared vision. University, industry, and government leaders described the imperative for the leader or an organization in a collaborative initiative to utilize planning tools and disciplines in order to develop a shared vision with collaborative partners and key constituents and stakeholders. The study participants and document review described the value of stakeholder engagement and participation in order to develop a shared vision collaboratively with partners. Stakeholder engagement was pursued early in the development process or while the process was evolving. In many examples, stakeholder engagement was instrumental in educating collaborating partners, constituents, and stakeholders on a vision that was proposed by the university and gaining support or commitment for a proposed vision.
Stakeholder Engagement

A robust stakeholder engagement process was essential to the development of a shared vision and ultimate success of collaborative efforts to advance regional economic development. University, industry, and government leaders consistently described the elements of stakeholder engagement, including the identification of collaborative partners and impacted stakeholders, understanding the needs of stakeholders, educating stakeholders on the value of collaboration, and the solicitation of stakeholder expertise, experience, and resources to enhance the quality of the collaborative engagement but also to enhance stakeholder acceptance in the collaborative initiative.

Collaboration in Self-Interest

The study findings established that university-industry-government leaders engaged in collaborative initiatives saw that collaboration was in their self-interest. Leaders across these sectors believed that their organizations benefited from their involvement in a collaborative effort. They saw collaboration as necessary in order to supplement resources, mitigate gaps in expertise and resources, and leverage resources under their control.

The findings suggest that a mid-range university can effectively collaborate with industry and government to advance regional economic development. The collaboration of university-industry-government partners in pursuing regional economic development initiatives is facilitated and furthered by key factors or competencies that include skilled leadership, the understanding of stakeholder engagement in order to develop a shared vision with stakeholders and collaborating partners, an understanding and resolve that collaboration is in one’s self-interest, and robust stakeholder engagement.
Four major themes emerged from the study. First, proactive leadership was a primary factor of successful collaboration. University leadership was critical to the initiation and sustainability of tripartite collaboration, and reputation, respect, and trust of leadership was critical to gaining a commitment from partners to collaborate. Second, the discipline of planning and the importance of purpose was essential to initiate collaborative efforts and to attract partners. The process of developing a shared vision, which is also a leadership practice, was instrumental for the sustainability and success of collaborative efforts. Third, a robust stakeholder engagement process was essential to the development of a shared vision and success of collaborative efforts. Finally, partners provided a commitment to collaboration because it was in their interest to do so.

Finally, chapter five provides a discussion of conclusions derived from this study as well as implications for future research, practice, and a new model of university collaboration in regional economic development.
Chapter 5: Conclusions and Implications

A discussion of the findings of this study addressed the purpose of this research, which was to explain how leaders from a mid-range university, industry, and government described collaborative efforts to enhance regional economic development. This study was intended to inform university leadership on how to effectively collaborate with leaders from industry and government to advance economic development in their regions. As the need for universities to impact regional economic development becomes more important, university administrators may collaborate with industry and government to advance regional economic development. An understanding of the elements of effective university-industry-government collaboration to drive regional economic development will be of great importance to university administrators who must partner and leverage resources with industry and government to advance initiatives beneficial to their regions as well as to enhance their own institutions’ sustainability.

The methodological approach of utilizing a single instrument case study to explore university collaboration in regional economic development was useful since there was an interest in focusing on process (Merriam, 1998) to answer ‘how’ and ‘why’ questions regarding the phenomenon of interest, which is aligned with the research question (Yin, 2009). An instrumental case study approach was appropriate for this research since the study sought to provide insight into a particular issue (Stake, 1994), which was how university leaders described collaborative efforts to enhance regional economic development. A systematic approach to the analysis, including the utilization of a purposeful sampling of tripartite sector leaders was fitting for this study since the aim was to understand process (Miles et al., 2014). Creswell’s (2013)
pragmatic approach of using a blend of inductive and deductive logic enabled the researcher to use multiple sources of data and complex reasoning to analyze and interpret the data.

This chapter begins with conclusions derived from the findings that addressed the research question of how leaders from a mid-range university, industry, and government described collaborative efforts to enhance regional economic development. The conclusions include a discussion on how these revelations relate to the literature and add value to the literature. Following the conclusions, implications of this study are discussed, including the value of the conceptual framework, impact of the literature on this research, future research opportunities, and considerations for practice. This final chapter concludes a new model to explain university collaboration in regional economic development.

**Conclusions**

The findings identified major themes that illustrated how leaders from a mid-range university, industry, and government described collaborative efforts to enhance regional economic development. The findings also confirmed much of the literature on collaboration, particularly Mattessich et al.’s (2001) WCFI factors. Proactive leadership, the importance of planning to create a shared vision, stakeholder engagement to build the quality of a collaborative effort and support, and having a self-interest to collaborate were dominant conclusions from this research.

**Proactive Leadership**

The theoretical framework, WCFI, developed by Mattessich et al. (2001) posited that the collaborative group must have skilled leadership or an individual who provides leadership for the
collaborative group and has organizing and interpersonal skills to execute the role with fairness. Leaders interviewed in this study overwhelmingly described the importance of skilled leadership in most facets of tripartite collaboration to enhance regional economic development. Collaboration among university, industry, and government leaders to advance economic development is about changing the status quo for the better. The literature is robust on the importance of leadership in facilitating collaboration to change the status quo (Bennis, 2007; Kocolowski, 2010; Kouzes & Posner, 2007; Parker, 1990; Spillane, 2005).

**Leadership initiated and sustained effective collaboration.** Study participants consistently stressed the importance of leadership to launching, building, and maintaining collaborative tripartite efforts to advance regional economic development. Kouzes and Posner’s (2007) five practices and behavioral commitments provided the foundational competencies and framework for collaboration to commence, evolve, sustain, and ultimately have impact. According to Kouzes and Posner (2007), leaders model the way, inspire a shared vision, challenge the process, enable others to act, and encourage the heart. This model also described aspects of the major themes identified in the results of this study.

Leaders involved in the collaborative efforts described in this study challenged the process or status quo by initiating collaborative efforts to enhance regional economic development. Kouzes and Posner (2007) found that leaders engaged in behaviors such as risk taking and experimenting with new ideas or concepts to challenge the process. Many of the leaders commented on the boldness of the university to move ahead with its vision and plan of development during the fiscal crisis of 2008. Most of the leaders interviewed in this study acknowledged that the projects discussed in this study would not have occurred without the
university’s leadership to initiate the projects. The university president reflected on this risk taking behavior and its impact on initiating these collaborative projects. The university president recalled, “We’re going to do this. I don’t know how we’re going to do it, but we’re going to do it.”

Leadership was important to foster and sustain collaboration by actively involving others in processes and by creating an atmosphere of trust to encourage others to act (Mattessich et al., 2001). Leaders across all three sectors provided examples of how they built and sustained collaborative efforts by engaging stakeholders from within their organizations and from other organizations. Kouzes and Posner (2007) described the process of engaging others in collaborative efforts and sustaining those efforts through their practice of enabling others to act, which is about fostering collaboration and strengthening others, and encouraging the heart by recognizing individual contribution and celebrating accomplishments. A state government leader described how the Secretary of the Department of Community and Economic Development fostered and sustained collaboration through empowerment:

But what he has done is he has really empowered the rest of his team, his deputies, and the other folks within the department, to really try to forge better relationships with our industry partners but also our academic partners.

**Government facilitated an environment to encourage tripartite collaboration.** The Commonwealth of Pennsylvania had a successful history of tripartite collaboration with Carnegie Mellon University and the University of Pittsburgh through their joint venture, Mellon Pitt Corporation. Because of this successful tripartite collaboration among the Carnegie Mellon University, University of Pittsburgh, industry, and government, the Commonwealth created
Keystone Innovation Zones (KIZ) that provided incentives to encourage tripartite collaboration. The Commonwealth specifically targeted higher education institutions that were not historically economic drivers like Point Park University.

Leadership provided by the Commonwealth of Pennsylvania helped to initiate collaboration among this next tier of higher education institutions (the tier below the nationally recognized research institutions of Carnegie Mellon University and the University of Pittsburgh), encouraging the institutions to broaden their impact beyond education and knowledge transfer to having direct impact on organizations and regional economic development. According to a state government leader:

I think what happens is that universities are not looked at as a natural entry point for a company who may be trying to come up with a solution for a problem that they have. They don't necessarily look at the university and say, “Oh, I should probably go to Carnegie Mellon today and see if I can help somebody help me create a better widget.”

State government is trying to change this current paradigm through leadership by helping universities to play a broader role in economic development through collaboration with industry and government. The state leader further commented on this change of philosophy and government’s leadership in the change:

I think what you’re going to see is a more concerted effort with this department and the administration really supporting, at a different level and in a different manner, the role that the universities play in conjunction with Pennsylvania’s seven Industrial Resource Centers. [The goal is] to really try to get those organizations to work more closely together but also to pull in other university partners like Point Park that may be able to
help a company with a particular issue. That maybe in the past, Point Park wouldn’t have even been called upon.

**Participative leadership facilitated stakeholder engagement.** Yukl (2013) described participative leadership as a shared or distributed leadership, essentially a process by which leaders encourage and enable others to share responsibility for leadership. Participative leadership is a very useful engagement method to empower stakeholders to participate in their own change process by adding value to the quality of decision making as well as by building buy-in and acceptance. Participative leadership enables stakeholders to be involved in decision making or solution development, making decision making much more effective. The best and most effective decisions are made collaboratively with those stakeholders who can contribute quality to the decision or solution development and who feel some ownership with the decision process and outcome. It is almost like trying to optimize both variables, quality and acceptance. To make the best decision, the aim is to have the highest quality variable multiplied by the highest acceptance variable possible.

The university was very thoughtful and strategic in its recruitment and engagement of participants or key stakeholders in industry and government to participate in the collaborative process. Through participative leadership, the university facilitated stakeholder engagement at the most critical, strategic level by forming almost a shared leadership among tripartite collaborative members. The university may have been “driving the bus” as recalled by a university leader; however, industry and government leaders participated in the collaborative process at a leadership level.
As universities look for opportunities to enhance regional economic development through tripartite collaboration, using a participative leadership model forces university leaders to think about key stakeholders and their meaningful engagement in a collaborative process. Participative leadership also drives the thinking of trying to optimize the product of quality of the collaborative effort in terms of the content or substance of the engagement and acceptance or support of the engagement.

This collaborative effort and the practice of participative leadership at the major stakeholder level among university, industry, and government leaders can also be characterized as an effective team, focused on these university-led projects to enhance regional economic development. Parker (1990) identified twelve characteristics of highly effective teams, and one of the twelve characteristics was the concept of shared leadership. The leadership on these collaborative efforts or teams was often shared, depending on need or experience required of the collaborative group. Participative leadership or shared leadership on these tripartite collaborative efforts should be considered in terms of the fluidity of leadership rather than as position (Kocolowski, 2010). Spillane (2005) provides even more insight when defining shared or distributed leadership as the practice of leadership rather than position.

**Facilitators of tripartite collaboration were seen as leaders.** For the projects described in this study, Point Park University positioned itself as a leader and facilitator of tripartite collaboration. Being recognized by others in the community as a facilitator of a tripartite collaborative effort raised the profile of the university in the eyes of the community. The university developed a strategy to engage the ULI Advisory Panel Process as a means to build a stakeholder engagement process. By positioning itself as a facilitator of a tripartite collaborative
effort, the university’s prominence, reputation, and credibility began to rise in the region. According to the university president, “That [ULI Advisory Panel Process] is really when the profile of the university began to rise.” Government and industry leaders acknowledged the university’s leadership in this tripartite collaboration.

University leaders may consider the value of proactive leadership, particularly in facilitating tripartite collaborative efforts in their regions as a strategy to enhance regional economic development. The university president with the backing of his or her board and leadership team is critically important to initiating and driving tripartite collaborative efforts. This study found that leaders in industry and government placed significant emphasis on the leadership abilities, reputation, and integrity of the university president as well as the institution itself when making decisions on whether to collaborate and to what magnitude to collaborate on tripartite collaborative efforts.

The concepts of collaboration and leverage are important for university leaders attempting to facilitate change. Now more than ever, universities need collaborative partners provide expertise, mitigate resource needs, and garner support on major initiatives to enhance their needs as well as regional economic development. Proactive, participative leadership is necessary to initiate and sustain collaborative efforts and to build and leverage resources. As universities seek to collaborate in order to enhance regional economic development, leadership is critically important, and leadership is about facilitating collaboration in order to change the status quo to improve regional economic development.
Planning and Shared Vision

This study confirmed the importance and significance of a shared vision or the articulation of purpose for collaborative efforts to commence and sustain (Mattessich et al., 2001). Moreover, the process of inspiring a shared vision by envisioning the future and breathing life into future possibilities by enlisting others and enabling them to see the possibilities is core to highly effective leadership (Kouzes & Posner, 2007). In order to drive and sustain tripartite collaborative efforts, university leaders must have a compelling vision and engage others to shape and support the vision.

**Purpose must be compelling and communicated through a shared vision.** Mattessich et al. (2001) described factors of effective collaboration relating to purpose that were built upon a vision, agreed upon and shared by the collaborative partners, coupled with a mission and goals that were unique to the collaborative effort, clear, and attainable.

The results of this study point to the importance of purpose, communicated through a shared vision to be compelling and, after leadership, probably the second-most critical factor. In order to start a collaborative effort, particularly a tripartite collaborative effort to enhance regional economic development, the purpose and vision for a collaborative effort must be compelling and express value shared or agreed upon by all collaborative partners. In order for the vision to be shared it must incorporate an understanding of the needs and desires of the other collaborative partners and major stakeholders. In this study, the university was effective and admired by collaborative partners for investing the time, resources, and energy in seeking an understanding of the needs and desires of others.
Collaborative partners often analyzed the value of a potential collaborative effort by asking themselves, “What’s in it for me?” This “What’s in it for me?” (WIFM) or WIFM factor was of importance to industry and government leaders. This study found that leaders in a tripartite collaborative effort had to justify their investment in support, both vocal and in resources. The collaborative effort and its vision had to be in alignment or of value to the leadership and constituent base of the collaborative partners.

By understanding the needs of others in order to propose a compelling, shared vision, the purpose and vision must show or explain value to collaborative partners. In this study, the university accomplished this by first understanding how industry and government collaborative partners could derive value from the collaborative projects that were initially in the university’s interest. University leaders invested time and resources to understand the needs and desires of industry and government collaborative partners and informed those leaders of the potential mutual value of these collaborative projects to the constituents of industry and government.

The process of developing a shared vision initiates stakeholder engagement. This study demonstrated that effective leaders shaped their vision to incorporate the needs of others in order to create mutual value. According to Kouzes and Posner (2007) leaders engage others to share their vision and enable them to see the possibilities and value to them associated with their vision. This leadership practice is one of the initial steps in the stakeholder engagement process. After identifying potential industry and government collaborative partners, university leaders engaged industry and government leaders by sharing a vision that was of interest to the potential collaborative partner as well as of potential value to them. University, industry, and government
leaders frequently and consistently commented on the importance of developing a shared vision and how this launched broad and sustained stakeholder engagement.

**Stakeholder Engagement**

Stakeholder engagement was indispensable to the success of the tripartite collaborative initiatives explored in this study. A well planned and executed stakeholder engagement process enabled an agreed upon vision for these collaborative projects. Members of the collaborative efforts also benefited from the outcomes of the projects as well as the engagement process.

Stakeholder engagement was essential to develop a shared vision. By engaging tripartite collaborative partners as well as other stakeholders in the community early on by sharing and collaboratively shaping the vision for each of the collaborative initiatives, the university was able to create a shared vision for each of its collaborative initiatives. The research findings made it clear that stakeholder engagement was necessary to develop a shared vision.

A stakeholder engagement process ensured success. Analysis of the interview data and documents, provided insight into the process that was followed to engage stakeholders on these tripartite collaborative projects. The university engaged the Urban Land Institute’s Advisory Panel process to proactively engage stakeholders by communicating and developing a shared vision, soliciting stakeholder needs and wants, and developing a shared vision (Urban Land Institute, 2007). This process loosely followed a three-phase stakeholder engagement process that entailed pre-planning, planning, and implementation. The pre-planning phase entailed an agreement on the value of stakeholder engagement among key collaborative partners. This plan-to-plan involved an identification of potential stakeholders. The planning phase involved strategies on how and when to engage specific stakeholders over the collaborative process. The
implementation phase required engagement with stakeholders throughout the collaborative initiative.

Leaders of tripartite collaborative efforts may consider utilizing a more-structured three-phase stakeholder engagement process in order to use a rational process to ensure effective stakeholder collaboration. University leaders may use a pre-planning phase with a select group of collaborative partners to determine the value of engaging stakeholders and some estimate of effort that would be required of a stakeholder engagement process. This pre-planning phase may also include the identification of stakeholders and then conducting a characterization of each stakeholder. This stakeholder characterization may include the development of a profile for each stakeholder that may include an understanding of what was needed from each stakeholder, what each stakeholder would gain from the collaborative process, and an articulation of a potential value proposition that could be positioned to each stakeholder on the value of being involved in the collaborative effort.

The planning phase of a structured stakeholder engagement process may include a plan on how to educate and initially engage each potential stakeholder in the collaborative process. The planning phase could also include a plan on how and when to engage each stakeholder at different points in time over the collaborative process. The Planning phase can incorporate any type of planning or decision making model as a framework for developing the plan.

The implementation phase of a structured stakeholder engagement process encompasses execution and the engagement of stakeholders to build a shared vision and to add value to the quality of the content of the collaborative process and to build support and acceptance.
Stakeholder participation increased the quality and acceptance of collaborative efforts. The previous discussion on participative leadership provides an explanation into the value of stakeholder participation as a strategy to enhance the quality of the content or substance of a collaborative project as well as to gain support or acceptance for the project. Stakeholder participation processes are effective means to engage stakeholders in order to solicit their experience, expertise, or resources in order to enhance the quality of the content or substance of a collaborative project. The other aim of stakeholder engagement is to build support and ideally acceptance for an initiative.

The effectiveness of a collaborative effort can be measured by product of the quality that goes into a collaborative initiative and acceptance. This process is a balancing act where the collaborative group attempts to optimize the effort to ensure a high level of engagement to build the quality of the collaborative effort’s product as well as the effort to build support and acceptance.

Stakeholder engagement process enhances learning. As is often the case in many engagement efforts, the process of an engagement or collaborative effort is sometimes as valuable as valuable as the product of that collaborative effort. Through analysis of each of the three tripartite collaborative referenced in this study. The participants in the collaborative efforts gained value from participating in the collaborative effort. The process of engaging stakeholders added value in expertise that enabled more effective collaboration and process in subsequent collaborative efforts. Gallagher (1992) suggested that by exploring interpretation of process, we are developing a theory of learning where the interpretational process is more impactful than the interpretational object.
Enabling Factors

The study identified several factors that enabled effective tripartite collaboration among university, industry, and government leaders and organizations. Three enabling factors were critical to effective tripartite collaboration. First, collaboration must be in the self-interest of collaborative partners. Second, the perceived integrity of a collaborative partner is important in forming collaborative partnerships. Finally, informal relationships facilitate the speed and strength of a collaborative partnership.

Collaboration must be in one’s self-interest. The study found that collaboration must be in the self-interest of individuals and organizations before engaging as a partner in a collaborative effort. The “what’s in it for me” or WIFM question must be addressed and satisfied by a collaborative partner before investing time, money, reputation, and other resources in a collaborative effort. Most tripartite collaborative efforts require the investment of time, money, resources, opportunity costs, and political will, particularly for government and some industry leaders. The value of participation in a collaborative effort must exceed the potential costs and risks.

The important concept to consider is that collaborative partners had to see how collaboration was necessary in order to supplement resources, mitigate gaps in expertise and resources, and leverage resources under their control. University leaders with a desire to facilitate regional economic development through tripartite collaboration must understand the potential needs, desires, and self-interest of potential industry and government collaborative partners in order to help those potential collaborative partners envision how collaboration is in their self-interest.
The integrity of a collaborative partner is worth its weight in gold. The findings were consistent in identifying trust and respect as critical characteristics of acceptable collaborative partners in tripartite collaboration. While the leadership literature reflects on the importance of leadership in facilitating collaboration to change the status quo (Bennis, 2007; Kocolowski, 2010; Kouzes & Posner, 2007; Parker, 1990; Spillane, 2005), leaders must model the way by setting the example whereby their beliefs, values, vision, and behavior must be consistent (Kouzes & Posner, 2007).

Leaders engaged in tripartite collaborative efforts must understand that their actions and the actions of their organizations create a perception in their communities. If their historic behaviors are not consistent and lack integrity in the eyes of their community, they will have difficulty engaging and sustaining tripartite collaborative partners.

Networking and informal relationships open doors. Leaders consistently described the value of networking and informal relationships in creating and sustaining tripartite collaborative relationships. Having and maintaining informal relationships opens doors, enabling leaders to build their networks, which provide access to information and resources. Informal relationships also facilitate communication and heighten trust.

One government leader stressed the importance of collaborative leaders to develop relationships while developing a strategic plan and shared vision as part of a collaborative effort. The government leader commented, "If you just go out and do your strategic plan and you have not connected with anybody else, your project just going to fail." Leaders involved in tripartite collaborative efforts must understand the value of their networks and informal relationships. The
breadth and depth of networks and informal relationships enhances their value as a collaborative partner, and this value transcends to the collaborative group.

**Implications**

The description of collaborative efforts to enhance regional economic development from leaders of a mid-range university, industry, and government provided insight beyond the conclusions already discussed. This study demonstrated the value of the conceptual framework, specifically the triple helix model (Etzkowitz, 2012; Warshaw & Hearn, 2014) in order to understand the relationship among university-industry-government organizations and their ability to collaborate and the WCFI (Mattessich et al., 2001) as a lens to analyze and make meaning of the collaborative process that leaders participated in to enhance regional economic development. Limitations of this case study research and opportunities for future potential research are also discussed as are implications for practice that can be applied to universities, industry, and government. Finally, a new model to understand university collaboration is introduced.

**Conceptual Framework Value**

The triple helix model, commonly used as a framework to describe collaborative efforts to advance regional economic development among university, industry, and government (Etzkowitz, 2012; Warshaw & Hearn, 2014), was useful in this study. The dynamic among the three sectors was prevalent and instrumental in the projects examined in this study. Permeability among university-industry-government boundaries as identified by Etzkowitz (2012) was instrumental in creating an entrepreneurial university culture that enabled Point Park to drive regional economic development through the projects that were the focus of this study. Until this research study, not much was known about the process involved to initiative and sustain
permeability in university boundaries. This study can be useful to begin to understand the process involved in initiating and sustaining permeability in university boundaries.

The state government created an environment for triple helix development and overlay networks like Keystone Innovation Zones (KIZ). It was found that newly created overlay networks like Innovation 21 added value by engaging employers to create internships, coops, and facilitate entrepreneurship. In the future, higher education will become important in the development and sustainability of triple helix collaborative efforts.

Increasing demands on industry and government compete for time and resources that are required for university-industry-government collaborative efforts. Shareholder interest on short-term return on investment and focus on quarterly returns makes it difficult for industry to focus longer-term regional economic development initiatives with questionable returns. Likewise, governments at all levels have less resources available for investments in higher education and industry collaborative projects. The expectation of government funding to match industry and higher education investments in regional economic development initiatives is becoming less reliable.

Mattessich et al.’s (2001) WCFI, a framework for understanding community collaboration through twenty factors that influence the success of collaborations formed by nonprofit organizations, government agencies, and other organizations, provided a valuable theoretical framework for this study. The WCFI served as an intuitive framework and as a diagnostic tool by providing a lens through which to explore the effectiveness of tripartite collaboration among leaders in the context of regional economic development.
The six categories and twenty success factors of the WCFI influenced the structure of the interview instrument used in this study. The first series of questions in the interview protocol queried study participants on the history of collaboration in the community and on characteristics of collaborative partners. The second series of questions in the interview protocol focused on gaining an understanding of process and structure, communication, and purpose related to tripartite collaborative initiatives. The final segment of the interview protocol was directed toward learning about resource requirements, including leadership, of successful collaboration.

A majority of Mattessich et al.’s (2001) WCFI factors aligned with the coding structure devised to analyze the interview data collected in this study. The WCFI informed and validated the coding structure; however, the analysis influenced a typology that included the leadership, planning, stakeholder engagement, and the emergence of a triple helix. These parent codes reflected some factors developed in the WCFI. While elements of the WCFI (Mattessich et al., 2001) were incorporated in the aforementioned parent codes, the parent codes of collaboration, participant characteristics, communication, and resources incorporated several WCFI factors.

**Limitations**

There are two limitations to this research, and the limitations are inherent in the research design of this study. A single case study analysis has been characterized with potential concerns around a consistently adopted methodological approach, reliability, and researcher subjectivity. A purposeful sampling strategy to select study participants may limit the range or variation of differences in data collected.

While a single case study analysis was selected to explore the process of tripartite collaboration at a mid-range university, Yin (2009) acknowledged the absence of systematic
procedures and methodological guidelines for case study research. Lack of a consistent rational process could influence researcher subjectivity. A single case study may compound researcher subjectivity since the researcher selected the case. This leads to another limitation. Since this study was conducted on a single case, there may be a question on the external validity of the case. In other words, there may be a concern whether or not this case study is generalizable to other mid-range universities or to other types of higher education institutions.

A purposeful sampling strategy was deployed to select study participants who were leaders in the university, industry, and government who were linked with the aims of this investigation and were familiar with the context of the case. However, there could be bias or question as to why the specific participants were selected to represent their respective sector. There may also be question as to what qualifies the study participants to address the aims of the study (Palinkas et al., 2015).

**Future Research**

This study uncovered opportunities for future research that would advance the understanding of how university leaders collaborate with leaders in industry and government to enhance regional economic development. An understanding of tripartite collaboration was invaluable to this study; however, the triple helix may have a fourth helix that is worth exploring. The process of stakeholder engagement was essential to effective tripartite collaboration, which may lead to opportunities to study this aspect of the collaborative process more closely. Finally, as universities become more cash strapped and their traditional funding partners are under the same financial strain, there may be opportunities to explore other strategies of leverage for universities to effectively resource collaborative projects.
The triple helix model that was used to describe tripartite collaboration to advance regional economic development (Etzkowitz, 2012; Warshaw & Hearn, 2014) and the concept of boundary permeability among university, industry, and government collaborative partners (Etzkowitz, 2012) may be expanded to include a fourth sector partner. The philanthropic sector, primarily private and public foundations, may be an evolving fourth helix. As financial pressures mount on the university, industry, and government sectors, the philanthropic sector may be a fourth collaborative sector partner to provide financial and other resources to sustain university collaboration to enhance regional economic development. This case study established the importance of the philanthropic sector to provide funding for planning, collaborative operations, and capital for collaborative projects to enhance university needs and regional economic development.

This study found that the identification and engagement of stakeholders was critical to effective collaboration. Since the planning required for successful stakeholder engagement was essential to ensuring that a collaborative initiative was of high quality and accepted, further research into the stakeholder engagement process would provide insight into how leaders might improve their planning and execution of these processes. Specifically, future research might explore the process that leaders take to pursue stakeholder identification, characterization, education, and communication. Researchers may also provide insight into the phasing process from stakeholder engagement planning to the execution of stakeholder engagement to measuring the effectiveness of stakeholder participation. Perhaps a comparative case study of large, medium, and small universities could be designed to evaluate the process of these institutions in launching tripartite collaborative projects, particularly in utilizing stakeholder engagement. This research can be expanded to examining the process of tripartite collaborative processes utilizing
stakeholder engagement in other countries and over longitudinal studies studying pre- and post-impact of regional economic development when utilizing these practices.

This study found that higher education institutions will need to have adequate resources in hand before launching collaborative initiatives in the future. Leverage of resources is becoming more important to all higher education institutions, especially for entrepreneurial universities. Future research and policy studies could guide universities on how to more effectively engage industry and government while not sacrificing the core mission, values, and vision of the university. Perhaps a survey instrument or assessment could be developed for universities to assess their readiness and capacity to engage in tripartite collaborative initiatives.

Practice

From this research several considerations emerged for practice. In order to provide leadership in the facilitation of tripartite collaboration to enhance regional economic development, universities must consider their role, capacity, and leverage strategies. Industry should consider opportunities to build and enhance intellectual property and brand value when providing support to tripartite collaborative efforts. Finally, government can continue to build incentives and infrastructure to encourage and facilitate tripartite collaborative efforts to enhance regional economic development. The following are implications for practice.

Collaboration among universities. Galloway and Minton (1997) found that universities, industry, and government have come to realize that that more can be accomplished through collaboration rather than working independently of each other. Results from this study projected that in the future, economic pressures may require lead partners, like universities, to have more funding and other resources in hand. Funding from industry and government is becoming even
more scarce and competitive to acquire. Universities with synergies in mission or location may want to consider increasing collaboration among peer universities to then engage industry and government collaborative partners.

This research found that state governments are looking for collaboration opportunities and encouraging collaborative efforts in their funding prioritization. One government leader described how governments are considering the relationship of a university with other universities. When government is contemplating making investments in universities, a government leader asked, “Are they working in a silo and underutilizing or duplicating resources?”

University leadership is critical, particularly in having the discipline to look for opportunities to add value and to remain relevant. This also applies to adding value beyond the traditional core mission of educating students by impacting communities and regional economic development through technology transfer to industry and government and the development of intellectual property. According to a government leader:

Again, I think it goes back to leadership. I think it goes back to, not just the president but to the folks that sit around the board table. You have to be willing to pick your head up and look around the world to see what some of these other university partners are doing and are doing well. And then how can you take that and acquire it to your own institution and to your own reason to see what opportunities exist.

University-university collaboration is a significant opportunity for universities. Universities would benefit by getting beyond their core mission of educating students to add value to their communities through other synergetic means like technology transfer. Several
government and industry leaders believed that a paradigm shift for universities was necessary to enable them to have more impact as collaborative partners. A government leader stated:

I think from a faculty perspective, again, I think sometimes faculty were probably not incentivized to do research, or not incentivized to look at opportunities for developing IP, or starting their own companies. And we've seen a significant shift in Pennsylvania, specifically with some of our university partners saying, "We need IP policies, but we need them to be supportive of the faculty and/or students who may be generating IPs." [This] may be wanting to take a company and spin it off, or take a technology and license it to another organization, as opposed to not letting them do anything with it and have it just sit on the shelf.

**University Role.** An important consideration that universities may undertake if they desire to engage in tripartite collaboration is one of role. Not all higher education institutions are major research universities with the capacity and expertise to play a role in academic entrepreneurship that includes firm creation and commercialization of intellectual property. Mid-range universities, in particular, must carefully consider their primary mission and whether there is value to their institution and community in broadening their primary mission to provide other benefit to their communities. Universities should consider what opportunities, threats, or gaps exist in their regional economies what role could they play to seize those opportunities, mitigate any threats, or remedy gaps.

This study demonstrated how a mid-range university effectively assessed its long-term needs and capacity against the needs and capacities of potentially interested industry and government stakeholders. A university that methodically goes through the process of
understanding its needs and capacities and then considers the needs and capacities of potentially interested industry and government partners can be in a position to identify opportunities that benefit all potential partners. This study demonstrated that role identification was a primary exercise, which guided collaborative strategy, process, and velocity.

**Universities will need more resources.** An implication derived from this research is that universities will have to acquire more resources upfront, prior to engaging in tripartite collaborative efforts in the future. In discussions with multiple government and industry leaders and through field observations, the days of government and industry investing significant resources in collaborative regional economic development efforts are fewer and far between. As has been stated earlier in this study, severe economic pressures on government and industry are impacting projects that are of interest to universities. Government funding in the form of grants and industry investments in community-based regional economic development projects are scrutinized like never before.

**Reliable universities will be sought after partners.** Universities recognized in their regions as reliable partners in regional economic development will be targeted by governments and industry desiring an opportunity to leverage their own resources. An implication from this research identified that when industry or government has a desire to invest in regional economic development initiatives, they will purposefully partner and share and leverage resources with a university partner that is reliable and worthy of their trust. This perception of trustworthiness and reliability surpasses other reputational characteristics like perceived academic rankings or stature in the academy. Industry and government leaders want to invest and partner with institutions and
leaders who can be trusted and who have a track record of performance that can ensure successful project outcomes.

**Universities could build collaborative capacity.** Universities may enhance their desirability as a partner in tripartite collaboration and increase the amount and quality of collaborative initiatives by building capacity to collaborate. Universities could build collaborative capacity in their regions by developing undergraduate and graduate courses in collaboration. These academic programs should be experiential and include field study opportunities, capstones, and co-operative education experiences to develop collaborative skills in practitioners in higher education, industry, and government. These academic programs could also develop collaborative engagement opportunities.

**Industry may consider leveraging resources to enhance talent and technology.** An implication gained from this study was that industry could be more proactive in pursuing opportunities to collaborate with universities and government, especially to enhance intellectual property or market opportunities through improved regional economic development. The findings from this study revealed that while industry was supportive in tripartite collaborative efforts, their involvement was more by chance or through a directed opportunity, rather than a calculated, proactive strategy to leverage resources to develop new intellectual property to enhance practice or technology or to create or expand markets.

**Governments could provide incentive programs to encourage collaboration.** This research found that the Commonwealth of Pennsylvania established programs to encourage tripartite collaborative efforts to enhance regional economic development. However, the research found that many states and regions in the United States do not have programs to encourage or
facilitate tripartite collaboration. These programs could also be expanded to encourage collaboration among universities. As discussed earlier in this section, university-university collaboration is a significant opportunity for universities. A few states, like Pennsylvania, are creating programs to encourage university-university collaboration and are giving funding priority to university-university collaborative efforts. More states and regions could benefit from this model to stimulate and sustain collaborative efforts in order to leverage and optimize resources.

**Governments may partner with universities to foster and grow collaboration.** By establishing or sponsoring a network of practitioners to share best practices in tripartite collaborative efforts, governments through university partners can create a knowledge base that can be leveraged to build and improve a region’s capacity to engage in tripartite collaborative efforts to enhance regional economic development. These networks can be expanded and utilized to enable experienced practitioners in collaboration to mentor leaders new to tripartite collaboration. These networks could be instrumental, possibly through a university sponsor, to incubate new collaborative efforts.

**A New Model**

This qualitative single case study explored how leaders from a mid-range university, industry, and government described collaborative efforts to enhance regional economic development. This study found that a mid-range university can effectively engage in tripartite collaboration with industry and government to advance regional economic development. The tripartite collaborative process was advanced by several key factors that included an understanding and resolve that collaboration was in one’s self-interest, proactive leadership, an
understanding and acknowledgement of the value and importance of planning in developing a shared vision, and the ability to execute robust stakeholder engagement with collaborating partners and key stakeholders to develop a shared vision.

A new model for university collaboration in regional economic development is shown in Figure 4. This model is built upon the triple helix developed by Etzkowitz (1997); however, it stresses the importance of university proactive leadership and the iterative nature of university-led facilitation to guide tripartite collaborative efforts as well as the supportive leadership provided by industry and distributive leadership provided by government.

Figure 4. A New Model for University Collaboration in Regional Economic Development
The model outlines preconditions for successful tripartite collaboration that include collaboration being in the self-interest of collaborative partners, trust in the leadership of partnering organizations, and the acknowledgement and practice of an intentional planning process and discipline to plan. The three helices of this model depict the university providing proactive leadership to initiate, drive, and sustain the collaborative process. The helices representing industry and government show the supportive leadership provided by industry and the distributive leadership provided by government.

The helix represents an iterative process of collaboration and the importance of permeability among university-industry-government boundaries as identified by Etzkowitz (2012). The model shows a linear and iterative process of actions that must occur in order to affect effective tripartite collaboration. First, a university, if they are initiating a collaborative process, must have a compelling purpose for an initiative and potential collaborative process by being able to address why collaboration is compelling and potentially valued. After the purpose to collaborate is established and validated, the leader of a collaborative process envisions the future and develops the need and rationale to engage stakeholders to develop a shared vision.

The leader of a collaborative effort approaches collaborative partners and key stakeholders and enlists their agreement on the value and resolve to engage stakeholders in the process. Stakeholders are then identified and characterized, as to what their interest may be and what they can add to the process, so that they can be approached and informed on the value of being involved in the collaborative process to develop a shared vision. The leader of the collaborative effort and partners develop a planning process for the collaborative effort. This
planning process includes strategies and tactics to include partners and stakeholders in the development of a shared vision.

After the planning process is developed and stakeholders are identified. Leaders of a collaborative effort engage stakeholders to develop a shared vision, and they may continue to engage stakeholders at different points in time, as needed, during the planning or execution phases of the collaborative initiative. The model then depicts execution of the collaborative effort with consistent communication and feedback with collaborative partners and stakeholders. Finally the model provides for evaluation of the collaborative process and outcomes to inform process improvement and continuous improvement opportunities. A successful tripartite collaborative effort provides confidence and momentum for future collaborative efforts.

Summary

This study explored how leaders from a mid-range university, industry, and government described collaborative efforts to enhance regional economic development. This study found that a mid-range university could improve and leverage its ability to collaborate with industry and government to advance regional economic development in an effective and efficient manner, enabling the institution to become a relevant and critical civic partner in its region and state. The collaboration of university-industry-government partners to pursue regional economic development initiatives was facilitated and furthered by key factors and competencies that included proactive leadership of the university, a competency of planning, an understanding and acknowledgement of the value and importance of stakeholder engagement in developing a shared vision with stakeholders and collaborating partners, and an understanding and resolve that collaboration was in one’s self-interest.
Four conclusions emerged from this study. First, proactive leadership was advanced by the reputation and leadership of the university president. Government supported and encouraged tripartite collaboration through programs and incentives and through distributive leadership, and industry provided supportive leadership through integration and adding value to efforts. Second, participative leadership facilitated stakeholder engagement. A discipline of planning was an important first step to engaging partners in collaborative efforts, and the process of developing a shared vision ensured sustainability of the collaborative process. Third, stakeholder engagement was instrumental to ensure quality of a collaborative process and buy-in. Finally, collaborative partners must have an understanding of “What’s in it for me?” and understand the value of leveraging resources through collaboration to achieve a win-win-win.

Several implications and recommendations for future research and practice were identified in this study. The triple helix model used to describe tripartite collaboration to advance regional economic development may be expanded to include a fourth helix that includes the philanthropic sector. Since the study found that the identification and engagement of stakeholders was critical to effective collaboration, further research of the stakeholder engagement process could provide insight into how leaders might improve their planning and execution of these processes.

Results from this study projected that in the future, economic pressures may require universities to have more funding and other resources in hand before embarking on collaborative efforts to enhance regional economic development. Funding from industry and government is becoming even more scarce and competitive to acquire. Universities with synergies in mission or location may want to consider increasing collaboration among peer universities to then engage
industry and government collaborative partners. Universities must carefully consider their primary mission and whether there is value to their institution and community in broadening their primary mission to provide other benefit to their communities. This is an especially important consideration for mid-range universities that often lack the resources and capacity of larger research universities. Universities should consider what opportunities, threats, or gaps exist in their regional economies what role could they play to seize those opportunities, mitigate any threats, or remedy gaps.

Finally, a new model was developed to understand university collaboration in regional economic development. The model outlines preconditions for successful tripartite collaboration and stresses the importance of university proactive leadership and the iterative nature of university-led facilitation to guide tripartite collaborative efforts as well as the supportive leadership provided by industry and distributive leadership provided by government. The model shows a linear and iterative process of actions that must occur in order to affect effective tripartite collaboration.
References


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Appendix

Appendix A. Interview Protocol

The interview protocol will be utilized for leaders and key stakeholders in the university, industry, and government.

Participant background information to be collected prior to each interview

- Position/title
- Roles and responsibilities in the organization
- Length of employment with the organization
- Mission of the organization

Introduction

- Explain purpose of the study as well as potential value, limitations, and risks
- Obtain informed consent to audio record the interview as well as to participate in the study and to utilize participant data
- In order to understand how leaders collaborate to enhance regional economic development, I would like you to consider three Point Park University projects that occurred over three points in time as a context for our discussion:

A. Academic Village, a multi-block living and learning hub that transformed the University campus and the Downtown neighborhood was initiated about five years ago. In this project students, city residents, and business people interact in a new green, urban park that unites Market Square and the Cultural District.

B. Center for Media Innovation, a New York City-style media facility in the heart of Downtown that provides hands-on-experience for students and enables them to collaborate with professionals in a laboratory for media innovation, which opened in September 2016.

C. Pittsburgh Playhouse Theater, which is currently under construction across the street from PNC Financial Service Group’s new world headquarters in Downtown.
Environment for Collaboration

1. Why did you and your organization decide to collaborate with [industry and government – or – the university and government – or – the university and industry] on these projects?

[Possible probes: history or culture of collaboration in the community, reputation of a collaborative group]

2. Were there any characteristics of the groups that you collaborated with (industry and government – or – the university and government – or – the university and industry) that were important in your decision to collaborate with them on these projects?

[Possible probes: respect, understanding, ability to compromise, and trust].

Process, Structure, and Communication

3. For each of these projects, describe how university-industry-government collaboration began and ensued over the duration of these projects.

[Possible prompts for the following elements:

a. Sense of ownership of the collaborative process and the result(s)
b. Level and depth of participation of management and staff involved
c. Roles, rights, and responsibilities of participants
d. Who provided leadership?
e. Ability to adapt to change
f. Openness and frequency of communication
g. Informal relationships or communication links]

4. What factors influenced the success of these collaborative efforts?

5. Were there any factors that diluted, impaired, or jeopardized any of these projects?

[Prompt: Or had the potential to dilute, impair, or jeopardize any of these projects?]

6. How were the vision and the goals and objectives of these collaborative efforts communicated and agreed upon among the collaborative members?

[Possible prompts: Were the goals and objectives clear to all involved and realistically attainable? Did the collaboration partners share the same vision on regional economic development projects? If so, how did the partners gain consensus on a shared vision?]
Resources

7. If it were ten years from now and you wanted to launch a project (or a project with the University), what would you need to have in place to make this happen? What would be the critical criteria of success?

Conclusion

8. What other information would you like to share that may be useful or relevant for this research?

- Thank the participant for their active participation and remind them that they will have an opportunity to review and approve their interview transcript.
Appendix B. Maintaining a Chain of Evidence

Case Study Report
  ↓
Case Study Database
  ↓
Citations to Specific Evidentiary Sources
  In the Case Study Database
  ↓
Case Study Protocol
  (Linking questions to protocol topics)
  ↓
Case Study Questions

(Yin, 2009)
### Appendix C. Interview Summary by Question

<table>
<thead>
<tr>
<th>Interview Question</th>
<th>University Leaders</th>
<th>Industry Leaders</th>
<th>Government Leaders</th>
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<tbody>
<tr>
<td>Environment for Collaboration</td>
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<tr>
<td>1. Why did you and your organization decide to collaborate with [other sectors] on these projects?</td>
<td>Needed to collaborate; did not have resources to pursue projects alone</td>
<td>Convergence of individuals with mutual interest</td>
<td>Stimulate economic development and serve as a catalyst and coordinator of activity</td>
</tr>
<tr>
<td>2. Were there any characteristics of the groups that you collaborated with that were important in your decision to collaborate with them on these projects?</td>
<td>Capacity to help was important. In addition to having diverse representation of major stakeholder groups, they were looking for partners that could add value by providing general support, technical support and expertise, or financial assistance</td>
<td>Successful and reliable partners who bring expertise as well as financial resources to a project. Partners must stand behind their projects. An interest in a partner’s mission was also important.</td>
<td>Having relationships already in place, quality of leadership, having a plan that describes direction and priorities, and transparency; universities are a target partner because of the ability to leverage knowledge and technology with industry and other government funding sources</td>
</tr>
<tr>
<td>Process, Structure, and Collaboration</td>
<td>University had a vision to expand the university and led and drove the collaborative process by consistently and continually engaging key stakeholders in the formulation, planning, and execution of the vision for these projects</td>
<td>University took a leadership role and invited industry to participate because project visions were of interest to industry, and they needed industry involvement; university managed collaborative process and kept industry engaged</td>
<td>The state created programs to stimulate tripartite collaboration (Keystone Innovation Zone program); university provided the leadership to begin and drive these projects by sharing their vision and engaging industry and government to participate as well as keeping them informed</td>
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<tr>
<td>3. For each of these projects, describe how university-industry-government collaboration began and ensued over the duration of these projects.</td>
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<tr>
<td>4. What factors influenced the success of these collaborative efforts?</td>
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<td>Right time and location – City and business was ready to make improvements in Downtown area; university president’s leadership and ability to share the vision; early and often communication and stakeholder engagement that continues to this day; tenacity</td>
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<td></td>
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<tr>
<td>Ability of the driver or developer of these collaborative efforts to understand what is needed in the community; this understanding will help to ensure project success, which mitigates risk; coming together of like interests</td>
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<tr>
<td>Leadership and ability of university leaders to understand and be able to identify impact that they can have on the local community beyond educating students; ability to pursue one’s self-interest while also impacting the community in a positive way; inclusive and transparent process; patience and tenacity</td>
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<tr>
<th>5. Were there any factors that did or could have diluted, impaired, or jeopardized any of these projects?</th>
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<tr>
<td>Funding and financial meltdown of 2008; tax exempt status of universities places pressure on properties being taken off property tax rolls; historic preservation groups often resist development projects, which could stop a project or increase its costs</td>
</tr>
<tr>
<td>Money and appropriate location; any negative public event could scare off partners or investors, which did not occur</td>
</tr>
<tr>
<td>Tax exempt status of universities and fear of properties being taken off tax rolls; politics of competing interests; funding; university leadership that does not understand how universities can impact communities beyond educating students</td>
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<th>6. How were the vision and the goals and objectives of these collaborative efforts communicated and agreed upon among the collaborative members?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Good communication strategy and plan; communicating the vision of the projects to stakeholder groups and key individual stakeholders through group and individual meetings while explaining value to those stakeholders and soliciting their buy-in; building upon key individual leadership relationships</td>
</tr>
<tr>
<td>Good documentation of the project keeps the project and partners on course; lead partner having an ability to share and communicate the vision with project stakeholders; open and honest communication</td>
</tr>
<tr>
<td>Leadership must be credible and have ability to share their vision; a plan that demonstrates positive impact on the community; important to bring partners along when developing a project vision and not springing a project upon partners; series of frequent, consistent stakeholder meetings; established relationships and consistent, open communication;</td>
</tr>
</tbody>
</table>
### Resources

7. If it were ten years from now and you wanted to launch a project, what would you need to have in place to make this happen? What would be the critical criteria of success?

| Universities would need to have more of its own financial resources as public, private, and foundation support has been declining; credibility that we did what we said we were going to do – credibility is really important to earning trust to do more; integrity and reputation of being a good partner; ability to demonstrate value to the community and key stakeholders |
| Record of success of previous projects; justification for a new project and its impact on the community or other projects; must feel comfortable with who we are partnering with; mutual interest in a project among partners; money in place; leadership in place that is respected and that can bring together partners |
| Must have good leadership around the table; need to have a good partnerships (breadth and depth across organizations) with an understanding of what each partner can bring to accomplish the mission; a robust stakeholder engagement process is very important; it is helpful for government to have early exposure to upcoming projects; must demonstrate positive impact to the community |

### Conclusion

8. What other information would you like to share that may be useful or relevant for this research?

| If you can articulate the vision and make it compelling, people will come along |
| Point Park has been a great success story for both the university and community; leadership is critical to successful collaboration |
| The philanthropic sector is tied into the community and collaborates well with universities, industry, and government; planning is important in these initiatives as well as having an understanding of how these projects impact the community |