

# **What Makes IPZs Click?**

*The Successes and Developmental Challenges of  
Three Innovation Partnership Zones*



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**July, 2011**



The Washington Economic Development Commission is an independent, non-partisan commission charged by the Legislature with the mission of creating a comprehensive statewide strategy to guide investments in economic development, infrastructure, workforce training, small business assistance, technology transfer and export assistance. The WEDC membership is comprised of business, labor, academic, and association and government leaders. In carrying out this legislative mandate and related responsibilities the WEDC will:

- Provide leadership, guidance and direction to the Governor and Legislature on a long-term and systematic approach to economic development.
- Formulate a common set of outcomes and benchmarks for the economic development system as a whole and measure the state's economic vitality.
- Define public, private, and philanthropic sector roles and best practices ensuring Washington captures the next generation of technology investment and global market opportunities.
- Provide a forum for geographic and industry cluster "institutions for collaboration" to build stronger partnerships.

## EXECUTIVE SUMMARY

Legislation was passed in 2007 directed the Department of Commerce (formerly the Dept. of Community, Trade, and Economic Development) to design and implement the Innovation Partnership Zone (IPZ) program. IPZs are regional networks that generate new knowledge, encourage business growth, create new jobs, and improve economic infrastructure. An IPZ may be designated after formation of a partnership between three types of organizations: research institutions, private firms in research-based industries, and workforce training organizations.

The goal of this study was to uncover what makes IPZs “click.” This report examines IPZs in three communities: Grays Harbor, Bothell, and Walla Walla. These IPZ case studies were selected to reflect the diversity of the IPZ program and the state’s economic conditions. Analysis sought to answer:

- Have IPZs provided fresh and new ways of thinking about economic development?
- What factors have been most important to their successes?
- What have been their greatest developmental challenges?
- What policies could help IPZs better function as a centerpiece of the state’s economic development efforts?

Innovation is this amazing intersection between someone's imagination and the reality in which they live.

—Ron Johnson

Preliminary findings suggest that IPZs can be useful tools in the coordination of regional economic development through innovation-focused networks.

IPZs provide a new way of thinking about economic development by drawing upon three best-practice development models: cluster economic development theory, networking theory, and sustainable industry theory. Each IPZ studied demonstrates attributes of these development models to varying degrees, though the models are not mutually exclusive. Ultimately, IPZ successes are largely dependent on providing leadership and facilitating networking between private and public actors, and sharing resources and positive externalities to achieve economies of scale.

The Grays Harbor IPZ has successfully leveraged private investment and public infrastructure to create a thriving innovation cluster focused on sustainable manufacturing. In Bothell, biomedical companies have partnered with the University of Washington to conduct research and commercialize products for ultrasound diagnostic and therapy devices. The Walla Walla IPZ partners a community college with private companies focused on water quality, winemaking, and clean energy.

Despite early successes, these IPZs have also experienced developmental challenges. A lack of operational funding, few opportunities for IPZs to network with each other, restrictive geographic boundary rules, and state

reporting requirements can impede IPZ productivity.

This report presents five preliminary policy recommendations aimed at providing IPZs with better coordination and more opportunities to leverage existing resources:

- Creation of a pilot competitive planning grant program that assists in the funding of regional economic development strategic plans;
- Establishment of a web-based clearinghouse for innovation-focused opportunities and resources;
- A work group that establishes and monitors best practices for

college and university participation in IPZs;

- The development of new rules for defining an IPZ's geographic boundaries; and
- Modification of performance metrics to better integrate the needs of local economies.

Future research on IPZs should evaluate the efficacy of IPZs in generating jobs and innovation outcomes, as well develop proxies to measure the effectiveness of “intermediary” processes such as networking activities or the role of local leadership in IPZ success.

# INTRODUCTION

Washington's Innovation Partnership Zones (IPZs) have experimented with a diversity of approaches to stimulating economic growth. Since the program's creation in 2007, a dozen IPZs have leveraged over \$1 billion of private investment in industries such as aerospace, bio-fuels, biomedicine, clean energy, clean data technology, water management, and viticulture.<sup>1</sup>

What lessons can we learn from these fledgling laboratories of innovation-focused economic development? For example, have IPZs provided fresh and new ways of thinking about economic development? What key factors have been most important to their successes? What have been their greatest developmental challenges? Most importantly, what policies could help IPZs better function as a centerpiece of the state's economic development efforts?

This study will address the above questions by pointing a spotlight on IPZs in three communities: Grays Harbor, Bothell, and Walla Walla. These IPZs were selected to reflect the diversity of the program – and the state's economic conditions.

## IPZ Program Background

Washington's economy faces significant challenges due to increased global competition, structural adjustment, and the recent recession. In response, the Washington Economic Development Commission (WEDC) has called for a "Decade of Innovation" to turbocharge the state's economic growth. A prime tool for doing so is the development of "innovation clusters." These are regional networks that generate new knowledge, encourage business growth, create new jobs, and improve economic infrastructure.

Toward that end, legislation was passed in 2007 that directed the Department of Commerce (formerly the Dept. of Community, Trade, and Economic Development) to design and implement the IPZ program.

An IPZ may be designated after formation of a partnership between three types of organizations: research institutions such as colleges or universities, private firms in

## Current Innovation Partnership Zones

- Bellingham Innovation Zone
- Bothell Bio Medical Manufacturing Corridor
- Grays Harbor Sustainable Industries
- Central WA Resource Energy Collaborative
- Pullman IPZ
- Sequim North Olympia Peninsula Innovation Partnership Zone
- Snohomish Aerospace Convergence Zone
- South Lake Union Life Sciences Innovation Partnership Zone
- Spokane University District
- Tri-Cities Research District
- Vancouver Steinmuller Innovation Zone
- Walla Walla IPZ

<sup>1</sup> Washington State Department of Commerce. 2010. Innovation Partnership Zones: First Steps toward a More Collaborative Approach to Economic Development.

research-based industries that are usually export focused, and groups focused on workforce training. In addition, IPZs must operate within identifiable geographic boundaries that provide distinct identity and the capacity to accommodate firm growth, and present a strategic plan for regional cluster development.<sup>2</sup>

Each IPZ should strive to position itself as a statewide leader in the research and development of commercially viable innovations, be they products or services. This is to be accomplished through an unusually high level of collaboration, both among businesses as well as between the public and private sectors.

For example, promising networks have developed between colleges and universities, chambers of commerce, economic development councils (EDCs), Associate Development Organizations (ADOs), port commissions, and Small Business Development Centers (SBDCs). Success for these networks has depended upon bringing to the table existing companies and potential investors.

## **Methodology**

This report was designed to build upon descriptive research on IPZs recently conducted by the Dept. of Commerce.<sup>3</sup> The goal was to conduct analytical research that essentially asked: What make IPZs click? Researchers employed an ethnomethodological approach grounded in theory to examine the development model, operational structure, and participating stakeholders

of each IPZ in order to assess its successes, challenges, and needs.

Three IPZs were chosen for study that reflect the state's breadth of industry activity, and disparate natural and economic resources:

- Grays Harbor Sustainable Industries IPZ
- Washington State Biomedical Device Innovation Zone (Bothell)
- Walla Walla Innovation Partnership Zone

The analytical framework presented in the next section of this study was developed to inform the scope of research questions for the case studies. The dominant means of data collection was site visits to each IPZ, where stakeholder interviews were conducted. The focus of the case studies was an analysis of stakeholder perceptions.

It was beyond the scope of this project to present a detailed analysis of IPZ finances. In addition, due to methodological limitations, researchers did not employ statistical techniques to make comparisons between IPZs. For example, traditional industry cluster performance metrics are of limited help when studying innovation clusters. Location quotient analysis (LOQ) and nearest-neighbor analysis are often used to assess patterns of growth and success in industry clusters. However, innovation clusters are not easily defined and quantified in a statistically meaningful way. Washington's IPZs often straddle standard industrial classification codes (NAICS).

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<sup>2</sup> Washington State Legislature. 2007. SB 1091

<sup>3</sup> Commerce, 2010

Furthermore, some companies operating within an IPZ may be hesitant to disclose sensitive, proprietary data due to concerns about compromising competitive advantage.

The findings section includes recommendations. These should be viewed as preliminary, both because of the limited number of IPZs researched and the limitations of ethnomethodological study.



## INNOVATION CLUSTERS AND IPZS

Washington's IPZs are partially grounded in traditional economic development theory, although many are also exploring new approaches. Most notably, they are not exclusively industry clusters. By the same token, many of the state's traditional industry clusters have not received IPZ designation.

IPZs are referred to as innovation clusters. These are defined as collections of stakeholder groups – or networks – that share resources and organizational similarities. These networks, tailored to unique regional needs, focus on developing products and services in emergent industries. Innovation clusters draw upon three best-practice development models:

- Cluster economic development theory
- Networking theory
- Sustainable industry theory

These models are not mutually exclusive. Some IPZs are grounded more heavily in one development model, while others utilize a hybrid of two or more (see *Appendix*).

Why break out of the box of traditional economic development grounded in industry-based clusters? Because research suggests that innovation clusters provide important, measurable economic benefits to local, state, and national economies.<sup>4</sup>

Jonathan Sallet describes innovation as “the driving force of economic growth in developed economies . . . the creation of additional economic value through the creation or recombination of knowledge in any sector, in any place.” He argues that the principle driver of innovation clusters is leverage – creating incentives for private parties to coordinate activities and resources and maximize outcomes with a low initial public investment.<sup>5</sup> In this sense, proximity to similar industries is less important to IPZ stakeholders than proximity to resources and networking opportunities.



Baptisma and Swann note that manufacturing firms are more likely to innovate if employment in their sector is strong within their home region. A study by Aharanson and colleagues demonstrated that Canadian biotech companies are nearly eight times more innovative when located in clusters. Wennberg and Lindqvist found that new firms in Sweden could increase survivability rates by locating within a cluster. Finally, Spencer and colleagues argue that regions with a higher percentage of cluster employment perform better economically than regions with fewer clusters.<sup>6</sup>

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<sup>4</sup> Sallet, J. 2010. Innovation policies in tough times on tight budgets: the case for regional innovation clusters. Organization for Economic Co-Operation and Development. Available online: <http://www.scienceprogress.org/2010/10/innovation-policy-tight-budgets-and-tough-times/> Accessed 21 December 2010.

<sup>5</sup> Ibid

<sup>6</sup> Muro, M. and Katz, B. 2010. The new “cluster moment”: how regional innovation clusters can foster the next economy. Brookings Metropolitan Policy Program.

## CASE STUDY I: Grays Harbor Sustainable Industries IPZ

This IPZ, which is located at the Port of Grays Harbor, fuses sustainable industry theory with traditional industry cluster development. The IPZ includes companies as diverse as Imperium, a biodiesel production and research firm; Paneltech International, a company focused on eco-friendly building materials; and the Wishkah River Distillery, a start-up craft distillery that will produce small batches of quality vodka, whiskey, and gin.

### Successes

Grays Harbor has been successful in leveraging \$20,000,000 of private investment and creating highly specialized jobs – a scientist at Imperium is a recent graduate of Harvard – that serve to strengthen the area’s human capital.

Gary Nelson of the Port of Grays Harbor provided three key reasons for this IPZ’s success in procuring private investment and talent:

- The port has effectively administrated existing resources and leveraged assets to procure private investment. IPZ designation functioned as helpful branding in the port’s efforts to leverage assets and attract businesses.
- The IPZ partnership provides a vehicle for public and private stakeholders to reach a consensus on development priorities.
- Companies located within IPZ boundaries share the benefit of existing transportation opportunities. Water, rail, and automobile shipping infrastructure are easily accessible to all stakeholders.

The port has provided most of the IPZ’s operational resources, and is lauded by stakeholders for effectively soliciting private investment. Sid Watts, general manager of plant operations at Imperium, commented, “The port has made wise decisions spending available moneys.” The decision to upgrade port facilities was made with the participation of all IPZ stakeholders. Watts praised the decision to expand and upgrade railroad spurs, as well as upgrade Terminal I. The port’s decisions have “benefitted Imperium, but have been made for the general good of business in Grays Harbor.”



The president of Grays Harbor Community College attends all IPZ meetings. Meanwhile, the Grays Harbor’s Jobs Team supports the IPZ’s development by encouraging public entities and county commissioners to focus on job growth. The Jobs Team is an informal group that meets every four to six weeks. Ed Brewster, President of

Grays Harbor College, noted that IPZ stakeholders and the Jobs Team work together to encourage “one voice, collaboration, and a consistent set of priorities.” Nelson recalled a time when the port engaged in extensive lobbying in Washington, D.C., and Olympia. This lobbying was largely ineffective, and projects went unfunded, because policy agendas lacked coordination. An inclusive network of stakeholders at the Grays Harbor IPZ has strengthened community-wide communication, prioritized goals, and emphasized collaboration over competition.

These stakeholders, while diverse in size and specialization, share the benefits of tri-modal transportation resources at the port: access to the state highway system, an extensive railroad system, and a previously underutilized waterway that can maximize distribution potential when market demand increases.

Sharing infrastructure is an integral component of cluster development, even when companies operate in divergent industries. This sort of geographically-focused resource sharing is indicative of traditional industry cluster development. Hoegh Autoliners utilizes port facilities to load Chrysler and Jeep products bound for Beijing. Paneltech uses shipping infrastructure for exports to South Africa and Europe. Imperium utilizes truck, railway, and marine shipping infrastructure to receive feed stock and ship biodiesel to foreign markets.



Nelson noted that the port holds a major advantage over other regional ports: “We’re two hours from the open ocean, compared with an eight-hour trip from Seattle.” Nevertheless, he stressed that Grays Harbor cannot focus entirely on shipping. Manufacturing innovative products and services is an important goal. Companies operating within the IPZ also

look forward to sharing research facilities, such as an advanced biochemical laboratory that will be built in the IPZ incubator currently under construction.

Grays Harbor IPZ participants pointed to the importance of an IPZ designation when pursuing local funding. The port has received funding from the state’s Community Economic Development Board (CERB) to leverage state rural county tax (“0.09 percent” tax) funding for infrastructure improvements.<sup>7</sup> County commissioners approved the use of this funding based on recommendations from a local advisory board. These funding

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<sup>7</sup> RCW 82.14.370 authorizes rural counties to impose a local sales/use tax of up to 0.09 percent. Tax receipts may only be used for financing public facilities, such as street improvements, bridges, water/sewer systems, etc., which serve economic development purposes. This tax does not change tax rates for consumers and is credited against the state 6.5 percent sales tax. All 32 eligible counties are currently levying the 0.09 percent local tax.

sources have resulted in approximately \$600,000 yearly to be used for capital upgrades to port infrastructure. The funds cannot be used for operations.

## Challenges

A number of developmental issues inhibit the Grays Harbor IPZ's growth. A lack of operational funding is compounded by the IPZ's ad-hoc administrative structure. In addition, state interpretation of the IPZ program's enabling statute has prevented Grays Harbor from integrating into its IPZ a major business park outside the harbor area.

The ad-hoc administrative structure presents administrative challenges. IPZ members have not established a 501(c) (3) or other structured organization and operate without a formal board of directors. The lack of formalized decision-making can be a liability when pursuing funding opportunities. Volunteers representing several stakeholders administer the IPZ, and are pursuing a nonprofit as a management option.

As mentioned above, the port has taken a lead role in managing the day-to-day activities of the IPZ. However, the port is a public entity subject to public disclosure laws – which may result in potential developers and businesses hesitating to discuss confidential or proprietary business information with the port. Stakeholders suggested that the Grays Harbor Economic Development Council (EDC) might be better equipped to negotiate with developers because, as a 501(c) (6)



organization, it is able to provide more confidentiality. Indeed, one option is that the county's EDC could also play a key role in procuring IPZ operating funds as well as managing the day-to-day operations of a proposed business incubator.

Stakeholders argued that Grays Harbor's growth has been impeded by the geographic limitations of the state's IPZ program. Nelson said the state's IPZ boundary restrictions do not make sense in a rural county like Grays Harbor. Statutory interpretation of these restrictions has not allowed the Satsop Development Park – located 17 miles east of Aberdeen – to be integrated into the IPZ operations and funding. It is likely that the concerns expressed by Grays Harbor can be accommodated by a different interpretation of the statute by the Dept. of Commerce.

The Satsop Development Park is a 1,700-acre industrial complex located at the site of a former nuclear reactor facility. The park hosts companies as diverse as George Washington Machinery, NewWood Manufacturing, NWAA Labs, Olympic Composites, and the Simpson Door Company. Satsop also hosts offices for the Association of Washington Businesses, The Bank of the Pacific, GE Energy Services, and Qwest Communications. In addition, the port maintains an office at the site alongside Grays Harbor College's commercial driver's license and forestry programs, Centralia

Community College’s Center for Excellence for Energy, and Northwest Laborers’ Employers Training Trust.

The Satsop Development Park meets or exceeds IPZ requirements on its own merits. However, stakeholders argued that public dollars can be better used to leverage private investment if the Satsop site were included in the Grays Harbor IPZ. The two locations are connected by the major highway in the county.



Finally, companies in the IPZ are subject to market volatility. Imperium is among the world’s largest producers of bio-fuel, but its facility currently operates at only 10-15 percent capacity. The company’s primary markets are now located in British Columbia and Oregon, where distributors are mandated to sell a 2-5 percent biodiesel blend.



Paneltech has experienced choppy waters as well. For example, some manufacturers have hesitated to replace traditional products such as plastic with Paneltech’s resin-based materials. Nevertheless, Paneltech owners and employees envision a time when common household items – kitchenware, countertops, windowsills, siding, and eyeglasses – are produced with their patented PaperStone material. Paneltech has sold their products to companies such as Starbucks and

Applebee’s in countries ranging from the United States to the UK, Italy, and South Africa.

## CASE STUDY II: Washington State Biomedical Device Innovation Zone

**B**othell's IPZ closely resembles traditional industry cluster development, though networking is paramount to its growth. This IPZ benefits from four assets:

- Companies share similar organizational structures and values – with a notable emphasis on research, quality control, regulatory practices, and high-tech manufacturing.
- Physical proximity allows for easy communication and high levels of interaction between IPZ stakeholders.
- The region has a large pool of specialized labor.
- Networking assures the IPZ's visibility on a global scale.



### Successes

The Bothell area is recognized as a world center for ultrasound research, and also the hub for biotech research statewide. Bruce Jackson of Cascadia MedTech Association said that a key to Bothell's success is "virtual" operation and networking. This IPZ has not possessed a formalized leadership structure. Instead, it has functioned as a loose network of cooperating organizations with the goal of making Bothell the world's hub for ultrasound technology.

Terry Sweeny of Philips Healthcare illustrated the power of informal networks: "Marketing [the IPZ] is likely unnecessary. Companies already know that Seattle is a hub of ultrasound and biotech." The Bothell IPZ's network of biomedical professionals spans the globe, though geographic proximity allows high levels of interaction.



Companies such as EKOS, Siemens, Honeywell, and Philips have located in Bothell to take advantage of existing expertise and labor pools. EKOS Chief Operating Officer Douglas Hansmann expressed optimism about Bothell's IPZ designation and biomedical network, noting that "all the biomed professionals know each other on a first name basis." He recounted instances when EKOS employees, during particularly difficult economic times, found employment with Philips, and vice versa. Though

Bothell-based companies do not conduct joint research and development ventures, all noted increased utilization of the same machine shops and electronics manufacturers, and a tendency toward synergistic learning between companies.



EKOS was founded in 1990 and currently employs 90 people. The company is focused on commercializing ultrasound technology as treatment for blood clots. The company's researchers have found that the application of ultrasound increases the efficacy of thrombolytic drugs, thereby eliminating blood clots more effectively than drug therapy alone. EKOS holds 24 patents. Their products have been on the market for five years, and the company has sold over 20,000 ultrasound catheter devices. EKOS

catheters recently received the CE mark in Europe for treatment of pulmonary embolisms. The European biomedical market is roughly the same size as its American counterpart and is integral to EKOS's export-based strategy.

The Bothell area's biomedical industry was well developed prior to the creation of an IPZ. However, one goal has been to reduce the barriers to entry of new firms. Toward that end, the IPZ is working with UW Bothell to launch a business incubator and research laboratory. The goal is to start six new businesses yearly in the incubator.

Current plans call for renovating a building on the UW Bothell campus. In 2009 the Dept. of Commerce awarded the IPZ a \$500,000 capital grant for building renovation. Construction will begin after the IPZ completes an operations plan for the facility.

## Challenges

The Bothell IPZ benefits from a world-renowned biomedical device industry cluster. However, funding issues coupled with a lack of administrative and research capacity hinders the IPZ's growth. Like their Grays Harbor counterparts, Bothell companies also face unpredictable markets, though the barriers are more regulatory in nature.

The IPZ is thus far an all-volunteer operation. For example, Terri Battuelo functions as the coordinator for the IPZ as part of her portfolio of duties for the City of Bothell.



Richard Penny, vice chancellor of advancement and external relations at UW Bothell campus, expressed a need for operational funding. Cascadia MedTech's Bruce Jackson said funding could be used to increase the IPZ's virtual presence by providing information technology support. The IPZ will also need staffing to run a business incubator and research laboratory being jointly developed with UW Bothell.

That said, Jackson also noted the detrimental effects that large amounts of funding can have on an IPZ's governance. He argued that pursuing the above-mentioned capital grant of \$500,000 "almost broke up the steering committee," because stakeholders disagreed about funding priorities and logistics. Jackson attributed much of the Bothell IPZ's success to being a virtual operation that lacks start-up operation funding from the state. Having no funding meant that there was no need to hire staff and house them.

Bothell is beginning to chart a long-term strategy for covering operational costs. Some stakeholders have suggested charging companies a fee for IPZ membership. However, Battuello, said that few, if any, companies have expressed interest in paying for a membership. She argued that other funding mechanisms should be found so the IPZ can be a free resource for companies.

The IPZ is instead creating a 501(c) (3) nonprofit. This will allow the organization to pursue grants to help fund operations. The new organizational structure will also allow the IPZ to hire paid staff. This is particularly important for launching the business incubator and research laboratory, whose need for dedicated operation staffing did not align with available resources from the organizational partners.

The ability to secure FDA approval for new products is critical to all of the Bothell-based companies. They all would benefit from greater research capacity at local universities, as the clinical studies necessary for FDA and CE approval are often cost-prohibitive for smaller businesses.

Would Bothell benefit from a relaxation of state rules regarding IPZ boundaries? Stakeholders expressed a desire to cooperate with biomedical companies as far north as Everett or Bellingham, which could provide exceptional opportunities for growth statewide. However, they also stressed the importance of targeting geographical investments to the Bothell biomedical corridor. Small businesses perform well when they are located close to larger hub companies, and the Bothell IPZ contains numerous large, internationally recognized leaders in biomedical production and research.

Battuello, the IPZ coordinator, said that significantly expanding zone boundaries would be "detrimental to the local feeling of ownership of the cluster."

## CASE STUDY III: Walla Walla Innovation Partnership Zone

**W**alla Walla typifies a hybrid model of cluster, networking, and sustainable industry theory. Located in the heart of Washington’s wine country, the Walla Walla IPZ is a hub for wine innovation and water research, with a particular emphasis on natural resource conservation.

### Successes

A major emphasis has been placed on coordinating activities between public and private stakeholders. The IPZ represents a partnership between the City of Walla Walla, Walla Walla Community College (WWCC), the Confederated Tribes of the Umatilla Indian Reservation (CTUIR), ETS Laboratories, the Walla Walla Valley Wine Alliance, Nelson Irrigation Corporation, Unibest International, and numerous other companies. Indeed, Walla Walla displays the broadest partnerships of the three IPZs studied.

The high level of collaboration found at the Walla Walla can be attributed to:

- Proactive leadership
- Existing natural resources (water and vineyards)
- The ability to coordinate financial resources effectively.

The community college has aggressively integrated its activities with private, industry-based activities in the region. The college provides opportunities for students to study viticulture, enology, and water science while working with real-world companies in the field. A high level of collaboration has helped assure the growth of Walla Walla’s wine industry and continued interest in the region’s multijurisdictional management of water resources. As a case in point, a study indicates that Walla Walla’s wine cluster continued to grow despite the recent recession.<sup>8</sup>



PHOTO COURTESY WALLA WALLA COMMUNITY COLLEGE  
**Walla Walla Community College operates its own vineyard where students learn to grow grapes.**

College President Steve VanAusdle has played an important role in the IPZ by championing two campus-based centers for innovation: the William A. Grant Water and Environment Center and the WWCC Center for Enology and Viticulture.

The Walla Walla IPZ has also taken advantage of traditional industry cluster development due to the prevalence of water resources, the preexisting wine industry, and a fledgling wind energy cluster. IPZ leaders continue to find innovative ways to

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<sup>8</sup> Economic analysis of the Walla Walla wine cluster: past, present, and future. 2007. Moscow, ID: Economic Modeling Specialists, Inc.

communicate across industry sectors and integrate private and public interests and resources.

VanAusdle praises the IPZ's ability to target investments effectively. The IPZ used a \$500,000 capital grant from the state to fund a water quality center that currently boasts a payroll of \$3.4 million. Likewise, IPZ leaders plan to pursue grant money to formulate a strategic plan that may include ideas for expanding Walla Walla's cluster development to include wind energy projects.



The college plans to further integrate WWCC's academic curricula with IPZ industry activity. A watershed ecology program has enrolled 35 students this year – over twice the anticipated enrollment of 16. The college has also played a leadership role in developing a third industry cluster: WWCC has dedicated \$1 million to forming a new wind energy education program on campus. This new program is slated to support the region's burgeoning wind

energy industry. The campus is located within 150 miles of over 4,000 wind turbines that are past the permitting phase of development.

Mark Riess, Chief Executive Officer of Unibest International, reported that his company would benefit from increased laboratory capacity at the college, as well as student internships or work-study programs for agricultural analysis and continued product development. Unibest is a diversified, research-intensive company that develops products for soil testing and other environmental monitoring media. The company has patented a resin that absorbs impurities in water, allowing scientists to analyze water quality in an expedited, unobtrusive manner. In addition, Unibest has patented a water collection cylinder, known as a "resin capsule." This capsule contains a helix, which spins to collect water from riverbeds for environmental analysis.

Building the zone's research capacity can be crucial to the growth of small firms like Unibest. The cost of testing prototype water-quality equipment in a commercial lab, and subsequently patenting products and processes, can be prohibitive. In addition, Riess notes that a research laboratory staffed by students could provide Unibest with rigorous product-testing processes while providing students with hands-on experience.



Unibest has also partnered with a broad network of institutions to advance its research into resin-based technology. Partners include Harvard University, the University of Kentucky, the University of Tokyo, and the Swedish University of Agricultural Science.

## Challenges

Walla Walla's IPZ is advanced enough in its development that most major challenges are either external or philosophical.

Tim McCarty, the IPZ administrator, pointed to the relative lack of networking opportunities. Locating a company in a metropolitan area such as Seattle or Portland provides more opportunities to "bump into people" and share ideas.

A lack of operational funding has been an issue for all three IPZs studied, but it takes on a somewhat differing coloring in Walla Walla. Private-sector stakeholders in Walla Walla emphasized the need for IPZs to assist them in business planning and marketing. This is difficult to do without operational funding. However, stakeholders also raised the philosophical question of whether IPZ funding would inordinately benefit private industry, to the detriment of the city and county governments that help organize IPZ activities. It was suggested that further research should examine how local jurisdictions benefit from the IPZ program.



This is a difficult issue to analyze due to the already closely linked relationship between Walla Walla's public and private sectors. The region's wine cluster exists symbiotically with the college's viticulture center and encourages students to locate in the region, and the water research cluster exists symbiotically with the college's water center and encourages water-based industry to locate in the area.

Despite the broadness of this IPZ's partnerships, Walla Walla is not immune from breakdowns in communication. Unibest's Reiss relocated to the area partly because it is designated as a historically underutilized business (HUB) zone, which provides contract advantages and bid preferences when dealing with the federal Environmental Protection Agency (EPA). This potentially important selling point was not known even among a number of IPZ stakeholders participating in this study.

## FINDINGS & RECOMMENDATIONS

Over the years a veritable alphabet soup of programs have been developed by the federal government and virtually all states to promote exportation, innovation, infrastructure investment, and regional economic planning. However, this nationwide accumulation of initiatives essentially designed to foster cluster development has become what Mills, Reynolds, and Reamer call “wildly ad hoc, idiosyncratic, and uncoordinated.”<sup>9</sup>

One of the promises of Washington’s IPZ program is that it would help cultivate greater coordination of regional economic development through innovation-focused networks. Preliminary – and largely qualitative – evidence suggests that IPZs can be a useful tool in achieving this goal, according to stakeholders from Grays Harbor, Bothell, and Walla Walla IPZs.

Nevertheless, each of the three IPZs assessed by this study has experienced developmental challenges. This section will largely focus on summarizing those challenges and present policy recommendations intended to provide IPZs with better organizational coordination and more opportunities to leverage existing resources.

### **FINDING 1: Lack of Operational Funding Limits IPZ Development**

The most frequently cited challenge was finding sufficient operational funding to accomplish an IPZ’s strategic goals. Without funding, zone administration has been performed either on an ad-hoc basis, or by staff from one of the partners on a time-available basis.

Ad-hoc staffing can accentuate the nebulous and informal structure of an IPZ. In contrast, staff donated by a public-sector partner can give that organization a dominant power position within the IPZ, potentially limiting its inclusiveness.

Stakeholders said that operational funding would allow IPZs to hire staff to coordinate communication within the IPZ, cultivate potential developers, and attract private investment through marketing campaigns.

None of the three IPZs has found a stable source of funds to cover dedicated staffing costs. One of the biggest debates within individual IPZs has been assessing various options, such as charging membership dues, pursuing grants, and creating services that generate revenue.

A major trend among the IPZs is to consider incorporating as a nonprofit organization, which makes some of the above-listed funding options more plausible. However, such a

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<sup>9</sup> Mills, K., E. Reynolds, and A. Reamer. 2008. Clusters and competitiveness: A new federal role for stimulating regional economies. Washington: Brookings Institution. Available at [www.blueprintprosperity.org](http://www.blueprintprosperity.org)

step also increases pressure for stable staffing – and funding. Thus far none of the IPZs studied has settled on a financially sustainable business model.

To date, IPZs have only received state funding for capital expenditures. Although these dollars have been particularly important to the development of capital projects by rural IPZs, stakeholders were close to unanimous in their call for the state to provide operational funding.

Such a request is problematic given the state’s current budget situation, the lack of well-developed business models for stand-alone IPZs, and the already fragmented system of economic development initiatives in Washington.

**Recommendation** – Create a pilot competitive planning grant program that assists in the funding of regional economic development strategic plans. This program could be funded through a small percentage of state capital funding for infrastructure. The focus of these plans would be to better leverage existing resources – including federal incentives from the Small Business Association, Dept. of Energy, Dept. of Agriculture, and the National Science Foundation – and make innovation-focused initiatives a high priority. An up-to-date regional strategic plan would henceforth be an eligibility requirement for recipients of state capital grants to IPZs.

## **FINDING 2: IPZs Lack Opportunities to Network with Each Other**

Companies operating within an IPZ can benefit from traditional cluster development. They share public and private resources, have access to highly specialized labor pools, and share organizational and procedural similarities. However, IPZ stakeholders also emphasized the importance of networking outside the confines of an individual IPZ. This was particularly important in rural areas.

An IPZ’s operational performance could be improved by networking and collaboration with other IPZs. By the same token, in an increasingly globalized and virtualized economy, innovation-focused companies could benefit from networking with kindred spirits even if they are located in another IPZ across the state.

The IPZ program has provided few opportunities for inter-IPZ networking and collaboration. This is partly a function of the program’s local focus. In addition, a lack of funding has limited the coordinating role that the state could play.

**Recommendation** – Establish a web-based clearinghouse for innovation-focused opportunities, communication tools, and resources. To minimize costs and maximize network development, the tool could be at least partially built around the “wiki” model of shared editing. This tool could also assist in better coordinating IPZs and regional small business resources such as ADOs, EDCs, and SBDCs. In addition, frequent state-level IPZ summits could be cost-effective vehicles for statewide networking, training, and policy development.

### **FINDING 3: Building Closer Ties to Educational Institutions**

Each IPZ is required to collaborate with an institution of higher learning to help assure skilled labor and the diffusion of knowledge. Colleges and universities play an integral role in the creation of innovative ideas through research and development programs. Higher education institutions can also provide IPZs with well-trained, entry-level staff and learning opportunities for students.

The leadership roles that Grays Harbor Community College, UW Bothell, and Walla Walla Community College play within their respective IPZs are arguably examples of best practices at work. Nevertheless, building partnerships has not always been easy because of the differing authorizing environments of the business community, local government, and higher education. For example, the pace of decision making of academic institutions can be much slower than may be needed by business start-ups.

**Recommendation** – The Dept. of Commerce and each of the state’s higher education’s governing entities should participate in a work group that establishes and monitors best practices for college and university participation in IPZs. These best practices should be of relevance to IPZs at different stages of their development, from nascent to advanced. In addition, “innovation vouchers” could provide funding for private-sector research and enable companies to access services from pre-approved organizations such as universities, community colleges, incubators, or federal laboratories.

### **FINDING 4: One Set of Rules on IPZ Geographic Size Does Not Fit All**

How tightly geographical boundaries should be drawn around IPZs was one of the biggest debates among stakeholders who participated in this study. Grays Harbor argued for looser boundaries whereas Bothell expressed concerns about changing current rules.

At issue is how the Dept. of Commerce interprets authorizing legislation for the IPZ program (SB 1091, 2007). Statutory language stipulates that an IPZ must demonstrate:

*“Identifiable boundaries for the zone within which the applicant will concentrate efforts to connect innovative researchers, entrepreneurs, investors, industry associations or clusters, and training providers. The geographic area defined should lend itself to a distinct identity and have the capacity to accommodate firm growth.”*

The debate appears to ultimately boil down to a divergence of interests between rural and urban IPZs. Grays Harbor’s IPZ argued that it could better leverage existing private investment if the Satsop Industrial Park – which is 17 miles away – could be included in its boundaries. Conversely, the Bothell IPZ expressed concerns that the removal of geographic requirements might reduce that zone’s standing as the primary biomedical location in the state.

**Recommendation** – The Dept. of Commerce should develop two-tiered rules for defining geographic areas that preserve concentrated development patterns for urban IPZs while allowing rural IPZs to draw boundaries large enough to gain economies of scale.

## **FINDING 5: State Reporting Requirements Not Always Cost-Effective**

Stakeholders from the three zones criticized the reporting requirements. Each IPZ is required by statute to submit performance data annually to the Dept. of Commerce. Data include private investment information, job creation measures, and measures of innovation. IPZs reported difficulties completing the annual reports due to a lack of staffing and data privacy issues. Furthermore, stakeholders reported that annual reports, in their current form, are not a very useful tool for them in assessing zone performance.

State policy makers would also benefit from more useful data. IPZ annual reports primarily focus on inputs and outputs, rather than empirical outcome data. Thus, it is difficult to make meaningful comparisons between zones because input and output metrics may vary widely depending on geography, industry focus, and size, and the age of a particular IPZ.

**Recommendation** – IPZs should focus on performance metrics in relation to local economies rather than working from a one-size-fits-all matrix provided by the state. The Dept. of Commerce has provided useful recommendations for modifying IPZ performance data.<sup>10</sup> Easing the annual reporting requirements would allow IPZ administrators to focus on key developmental issues. If operating funds become available, a more fundamental modification of reporting requirements may provide policymakers with the data needed to assess innovation development statewide.

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<sup>10</sup> Commerce, 2010

## **CONCLUSION: *Next Steps in Better Understanding What Makes IPZs Click***

**F**uture research on IPZs should go beyond collecting the impressions of IPZ participants. The research scope should also include measures of inputs and outcomes delineated in Figure 1 (see *Appendix*). One of the central conundrums in evaluating the efficacy of IPZs in generating jobs and innovation outcomes is the “but for” question: Would the outcomes we observe be any different if there were no IPZ present?

Separating out the complex institutional arrangements and networks facilitating the value added IPZs provide is complicated work. And while inputs and outcomes are – at least in theory – “measurable,” existing public data sources lack the level of specificity necessary to explore these issues. With this understanding, future analysis should include collaboration with the Employment Security Department and the Department of Revenue, owners of two highly detailed firm-level data sets, to aggregate job and firm growth within the boundaries of each IPZ.

On the even more challenging issue of empirically following the development of so-called “intermediary processes” (e.g., networking activities or the role of local leadership), future work should explore ways to develop imperfect proxies for these activities. A comprehensive survey of IPZ resident firms – a structured set of consistent, uniform, periodic, and confidentially administered questions to firm CEOs and other IPZ members – could provide valuable insights into the role of the IPZ in fostering growth.

## APPENDIX: Cluster Economic Development Theory, Networking Theory, and Sustainable Industry Theory

What follows is a brief discussion of how these three models underpin IPZs. This will provide useful context for the case studies of the three IPZs.

### Cluster Economic Development Theory

Industry clusters have been defined as “geographic concentrations of interconnected businesses, suppliers, service providers, coordinating intermediaries, and associated institutions like universities or community colleges in a particular field.”<sup>11</sup>

Harvard researcher Michael Porter popularized cluster economic development theory in *The Competitive Advantage of Nations* (1990). However, the roots of this school of thought reach back a century. In 1890, Alfred Marshall argued that similar industries and businesses naturally settle in the same geographic area to increase productivity and enhance competitiveness. Marshall called this phenomenon “agglomeration.”<sup>12</sup>

Agglomeration can be understood as the process of creating clusters. Some recent examples include the Silicon Valley technology boom of the early 1990s, the technology and information cluster in Seattle, and the aerospace industry in Wichita, Kansas.

Economist Paul Krugman offers three key reasons for agglomeration:

- Agglomeration concentrates several firms in a single location and offers a pooled market for workers with industry-specific skills.
- Localized industries can support the production of non-tradable, specialized inputs and services such as labor, transportation, processing, and handling.
- Information and resource spillovers between companies can give clustered firms better production processes than isolated producers.<sup>13</sup>

The international community’s embrace of cluster development speaks to the effectiveness of the model. Currently, 26 countries in the European Union (EU) have programs to support cluster development. Japan introduced the Industrial Cluster Project and Knowledge Cluster initiative in 2001. In 2009, the initiative supported 102 industry clusters with over ¥30 billion (approximately \$360,000,000). Ryohei Nakamura found that clustering is positively associated in Japan with higher productivity in manufacturing, retail, wholesale, and finance industries.<sup>14</sup>

Clusters provide an opportunity for policymakers and private entities to reconsider growth as a product of regional development, and focus resources accordingly.<sup>15</sup> Alan

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<sup>11</sup> Muro and Katz, 14

<sup>12</sup> Purdue University, Center for Regional Development. 2007. Unlocking rural competitiveness: the role of regional clusters.

<sup>13</sup> Krugman, P. 1991. Increasing returns and economic geography. *The Journal of Political Economy*, 99, 3, 483-499.

<sup>14</sup> Nakamura, R. 2008. Agglomeration effects on regional economic disparities: a comparison between the UK and Japan. *Urban Studies*, 45 (9): 1947-1971.

<sup>15</sup> Muro and Katz, 9.

Berube, former policy advisor to the US Dept. of Treasury, notes, “Regions are not part of the national economy, they ‘are’ the national economy.”<sup>16</sup>

Washington is home to several traditional industry clusters. Most notably, the relatively young biomedical cluster in Bothell merges the proximity of like-industry with the educational resources available from the University of Washington’s Bothell campus (UW Bothell). Diffuse health care clusters in Seattle, Tacoma, and Spokane benefit from close proximity to world-class research institutions and hospitals such as the University of Washington (UW), the Fred Hutchinson Cancer Research Center, and Swedish Medical Center. Finally, Boeing has encouraged a large and well-developed aerospace research and manufacturing cluster near Seattle and Everett that has been a world leader for decades in commercial flight and defense technology.

## Networking Theory

Networking theory explains how individuals and organizations communicate and build relationships to exchange information and ideas. This open exchange helps maximize the use of available resources and increases a cluster’s chance of success. EDC Executive Director Egils Milbergs stresses the importance of creating relationship capital through participation in the IPZ program – and how crucial it is for stakeholders to understand networking as an iterative process. IPZ stakeholders should strive to continually create new avenues for information and idea sharing across divergent interests.

Sociologist Mark Granovetter describes how weak relational ties are central to networking. He argues that individuals tend to have a collection of close ties (close friends). This group will exhibit similarity in many ways. Groups of close ties will have vetted and established cultural norms, patterns of behavior, and modes of communication.

Likewise, individuals will have a group of weak ties (acquaintances) that exist outside of their collection of close friends. Individuals have less interpersonal contact with weak ties, and thus share fewer social similarities. Few of an individual’s acquaintances will know one another, though each acquaintance will belong to a group of close ties with its own social structures. Hence, information and ideas are most easily diffused when communication with one’s weak ties is increased. Thus, innovation is best cultivated when groups with close ties, and different shared beliefs, interact.<sup>17</sup>

Claus Steinle and Holger Schiele argue that some industries possess a propensity for network-based innovation. In particular, a long value chain with distinct competencies, network-based innovation, and volatile markets increases the tendency for companies to cluster and share information through networks.<sup>18</sup>

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<sup>16</sup> Berube, A. 2007. *MetroNation: How U.S. metropolitan areas fuel American prosperity*. Washington, DC: Brookings.

<sup>17</sup> Granovetter, M. 1983. The strength of weak ties: A network theory revisited. *Sociological Theory*. 1. 201-233.

<sup>18</sup> Steinle, C. and H. Schiele. 2002. “When do industries cluster?: A proposal on how to assess an industry’s propensity to concentrate at a single region or nation. *Research Policy*. 31. 6. 849-858

The Grays Harbor IPZ provides two examples of companies networking to expand markets. Imperium uses networking to help assess market potential in Europe and Canada, while Paneltech is pursuing networking opportunities to open the Chinese market to their products. Biomedical companies from the Bothell IPZ engage in network-based learning with regards to the opportunities and challenges of pursuing Federal Drug Administration (FDA) approval of medical devices. In these ways, companies can – formally and informally – share information about similar organizational processes while pursuing innovation in their own unique products and services.

## Sustainable Industry Theory

Business administration professor Michael V. Russo stresses that sustainable companies embrace a whole-systems approach toward business development.<sup>19</sup> Instead of a singular focus on traditional measures such as short-term profits and market share, these companies also pursue socially-oriented goals such as increased employment, quality of life improvements, and long-term ecological protection.

Sustainable industry theory is a broad and emerging field of study. Researchers and industry professionals disagree over a precise definition of sustainability. For example, Holmberg and Sandbrook documented more than 70 definitions of the term sustainable development as early as 1992.<sup>20</sup> However, Starik and Rands offer a common definition of sustainable industry:

...a collection of organizations, with a commitment to economic and environmental goals, whose members can exist and flourish (either unchanged or in evolved forms) for lengthy time-frames, in such a manner that the existing and flourishing of other collectivities or entities is permitted at related levels and in related systems.<sup>21</sup>

Sustainable industries can differ from traditional industries in fundamental ways. For example, industrial designers William McDonough and Michael Braungart call for a shift from a linear, “take-make-waste” production model to a circular, “borrow-use-return” approach that mimics the way nature works – all waste becomes food for other creatures. This philosophy underpins the emerging zero-waste movement, which aims to use industrial practices that meet consumer needs while eliminating damage to the environment.<sup>22</sup>

Because of its focus on resource conservation, sustainable industries are more likely to share or sell waste resources to a secondary market. For example, Grays Harbor’s Imperium has sold byproducts of their bio-fuel manufacturing process to Paneltech for

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<sup>19</sup> Russo, M.V. 2003. The emergence of sustainable industries: building on natural capital. *Strategic Management Journal*. 24. 317-331.

<sup>20</sup> Holmberg, J., and R. Sandbrook. 1992. Sustainable development: What is to be done? In J. Holmberg, ed., *Policies for a small planet*. London: Earthscan, 19-38.

<sup>21</sup> Ibid

<sup>22</sup> McDonough, W. and M. Braungart, 2002. *Cradle to cradle: Remaking the way we make things*. New York: North Point Press.

use in its high-tech resins. Resource conservation can also result in greater collaboration with companies in seemingly unrelated industries.

Sustainability theory explains why the divergent industries at the Grays Harbor IPZ can cooperate toward a common goal, though cluster development theory explains how these companies can benefit from existing, geographically concentrated infrastructure.

Other examples of innovation grounded in sustainability theory include Walla Walla's IPZ, which merges viticulture with water science to maximize sustainable agriculture and minimize water use. In addition, the Central Washington Resource Energy Collaborative IPZ in Kittitas County utilizes the expertise and resources from public and private partners – Central Washington University, enXco Development Corporation, Puget Sound Energy, and Kittitas County – to grow a concentrated, regional clean energy resource.

## **Using Theory to Better Understand What Makes IPZs Click**

In this report, IPZs are viewed as geographically delimited institutional arrangements that embody and enable processes. These processes, in turn, foster national and global relationships between actors and provide access to expansive markets for exporting goods and services produced in Washington. In the schematic below (see Figure 1), the IPZ is represented as an intermediary boundary spanning, value-adding mechanism. Our outcomes of interest – high paying jobs, new firms, and proxies for innovation activity – are a function of key inputs, listed on the left hand side.

But the simple accumulation of these inputs does not necessarily lead to increases in the outcomes on the right-hand side, e.g., high paying jobs are not simply a direct function of the amount of new computers and real estate. Instead, there needs to be a process through which these resources are strategically aligned, coordinated, and linked in ways that make the whole greater than the sum of its parts.

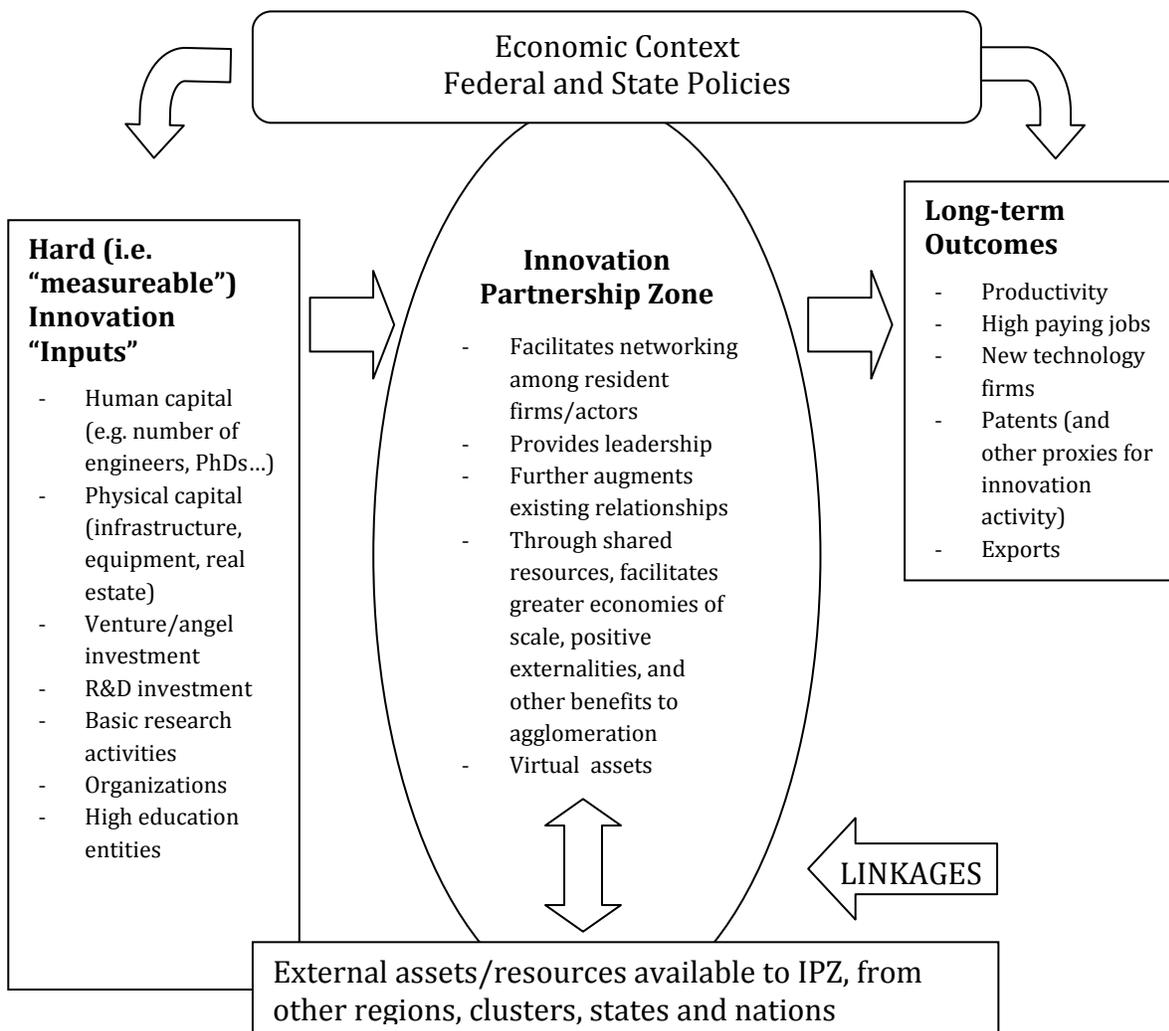
As a simple example, consider the IPZ function of organizing networking programs. In the absence of these events, companies would still continue to innovate and workers would be hired. But by facilitating these cross-firm and personal linkages, more ideas are generated and new opportunities are discovered for partnering and combining efforts between companies may result. In this sense, while the IPZ may not necessarily create a cluster, it furthers the agglomeration benefits accrued by firms and individuals resident in the cluster, facilitating greater economies of scale and positive externalities through shared resources and leadership interested in the benefits of all members of the innovation community.

It is important to note, based on the schematic below, that while factors and outcomes are at least in theory countable (though significant data limitations exist), the processes embedded and integral to the role of the IPZ are much more subtle and qualitative. For example, one cannot count the degree of “connectivity” between firms, such as information sharing and personal friendships, in any meaningful way. Also note that in this preliminary study of IPZ development, the outcomes may require long periods of

time to germinate. One cannot expect significant growth in high-paying jobs and new firms in only a two- or three-year period.

In the case studies above, “success” is a guarded term. We are evaluating the emergent behavior, processes and relationships of IPZ actors in seeking innovation and economic outcomes e.g., the recognition among IPZ resident actors of a broader local community of “innovators” to which they may increasingly identify with. Future research, after enough time has passed for these processes to take root, will look at the true outcomes of interest: productivity gains, start-up firms, exports, high paying jobs, and other proxies of innovation activity (e.g., patents).

**FIGURE 1. Schematic Representation of the Role of IPZs**



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