**A Framework for Discussing Innovation Support Systems**

*Ken Harrington, Managing Director*

*Skandalaris Center for Entrepreneurial Studies at Washington University in St. Louis*

 Studying a region’s current and past strengths is a common practice that helps leaders and economic development organizations define ***Industry Clusters***. Clusters are important because inventorying intellectual and physical assets can be a foundation for future innovation and economic growth. However, the future is also dependent upon the interests of a region’s entrepreneurs, which may or may not align with an ***Industry Cluster*** theme. This entrepreneurial energy is often dormant and only becomes apparent when it is invited to show itself*.* ***Innovation Support Systems*** can to be intentionally designed to encourage entrepreneurial activity and to unleash latent entrpreneurail energy. Support systems need to form for different interest area, each with an entrepreneur champion who stimulates collaboration across the six phases of innovation maturity. By developing multiple support systems a region can create a broad based ***Innovation Environment*** that causes economic and social growth.

 At the start, a region’s ***Innovation Support Systems*** are often dormant even though they most certainly contain many assets and stakeholders with common interests. The reason for this is that the people have not yet connected. They simply need to meet and collaborate. Uncovering and stimulating these relationship is the first step in building an entrepreneur support system. For example, entrepreneurs, university researchers, students, large company employees, small company leaders, not for profits, young people, economic development organizations and many others may have innovation aspirations but not know about one another’s motivations or activities. This lack of awareness and relationships constrains innovation. Connecting people and making them conscious of one another sparks new entrepreneurial activity. It is a low cost, first step to creating an entrepreneurial culture. Simply uncovering common interests between people who have not met stimulates new ideas and increases entrepreneurial intention.

1. ***Innovation Support Systems*** have four groups of factors that need to be nurtured by regions.
* Two groups are social in nature
* Two groups are economic in nature
1. ***Social Innovation Factors*** relate to people and how they interact. They rely on relationships and trust, are intangible in nature, may be somewhat invisible, take time to establish, and are frequently overlooked by economic development and stakeholder alignment planning efforts.
* ***The Culture Group*** encompasses informal and formal community-wide factors like associations, collaboration events, community knowledge, media messages, education, mentoring support, and other social relationship factors. The culture group also includes personal items like friendships, motivations and values, perceived future rewards or losses, past experiences, recognition, and other items. Culture activities and events can to be consciously engineered to stimulate and energize new relationships. Culture then grows from those relationships and shared experiences increasing community learning.
* ***The Institution Group*** includes items that determine the amount of time and effort that is needed to establish relationships between people when they meet and decide to work on ideas. It includes things like undocumented agreements, idea disclosure formalities, employment agreements, company policies and procedures, contracts, investment terms, wealth sharing agreements, property rights (IP), conflicts of interest, who takes credit for accomplishments, and similar things. In the case of universities, technology transfer policies and procedures a major institution that frequently stifles entrepreneurial energy.
1. ***Economic Innovation Factors*** relate to investments and resources that are economic in nature. Financial resources are needed to fund programming, specific ventures, and infrastructure. Most economic innovation factors, other than the stimulation of social relationship (culture) networks, are tangible in nature.
* ***The Resource Group*** is the expense that funds invention, support system programming, and individual ventures across the six phases of innovation described below. Government programs, corporate, other research initiatives, and bootstrap inventors fund Phase 0 activities. Resources to fund champions who encourage ideas and develop entrepreneurs-Phase 1 and 2 are frequently overlooked. Serial entrepreneurs, high net worth individuals, angel networks, venture capital and other capital providers fund the most promising ventures once the ideas and people have been tested-Phases 3 and 4. Phase 5 yields serial entrepreneurs and new wealth that adds momentum and scale to a region’s culture.
* ***The Infrastructure Group*** is most often capital expenditures. These frequently require large up front investments. They include buildings, lab facilities, research equipment, office space, infrastructure, and similar items.  Shared facilities like incubators and accelerator labs can serve stage ventures without each one having to make the same investments. The need for infrastructure varies with different interest areas. For example, biotech requires large investments during Phase 2-3.
1. ***Innovation Support System’s*** social and economic factors can stimulate or constrain entrepreneurial intention depending upon how well champions and people collaborate. Conscious attention to designing support systems that are entrepreneur friendly creates a multiplier effect spurring entrepreneurial activity. Phases 1 and 2 encourage action with the expectation that first time entrepreneurs will use personal initiative and new relationship to help them advance their concepts. At the end of Phase 2 and during Phases 3 and 4 resources and support must be “earned” and only then will they be allocated by customers or the capital markets. Not all ideas or concepts will advance but they should be allowed to try. There are six phases of innovation maturity.
* ***Phase 0-Discovery and invention*** supports researchers, engineers, clinicians, and inventors
* ***Phase 1-Idea generation and entrepreneur development*** supports first time entrepreneurs
* ***Phase 2-Team and venture launch*** includes team formation, mentoring, bootstrapping, and value and business model validation for ventures that prove they have promise
* ***Phase 3-Venture affirmation*** includes beta testing, customer acquisition, market validation, and uncertainty reduction
* ***Phase 4-Company implementation and growth*** includes later funding rounds, team growth, scaling, and wealth creation
* ***Phase 5-Exits*** signal success that generate new wealth, more investment, wider availability of serial entrepreneurs, more ventures, and scaling of Support System activities
1. ***Collaborative, Passionate Champions*** are an important catalyst for creating vibrant ***Innovation Support Systems.*** A Champion watches over a Support System and serves as an energy source as well as a relationship connector for people. A champion:
* Listens to and understands entrepreneurs with a like set of interests
* Engages people and helps them define their roles within the Support System
* Informs community leaders and asks for support in the form of resources, community messaging, and affirmation
* Is energized more by Support System success than personal gain
* Collaborates with other champions to uncover innovation opportunities between interest areas
* Connects and informs people by using virtual and face-to-face social networking tools

Champions often spin-off new specialty Support Systems by recruiting and supporting people that identify new interest areas with entrepreneur groups that show promise.

1. ***Innovation Support System health can be measured*** by conducting surveys, recording investments, tracking activities, counting outcomes, and discussing Support System evolution over time. Things that need measurement include:
* Surveys about the importance and adequacy of economic and social innovation factors for each entrepreneur interest area
* Research funding, inventions, and patents
* Dollars invested on social and economic factors across the six phases of innovation
* Education, events, competitions, and social gatherings (# and attendance)
* Idea generation and encouragement (# ideas)
* Mentoring activity (# ventures, # mentors)
* Growth in Support System entrepreneur population, including new entrepreneurial intention (# first time entrepreneurs) and recurring entrepreneurial activity (# serial entrepreneurs)
* Economic outcomes like # new companies, $ in funding, # jobs, # successful ventures, and $ wealth created

 Overall, consciously investing to develop and nurture ***Champion-led Innovation Support Systems*** creates an environment of innovation that increases a region's community knowledge around entrepreneurial activity and innovation. This yields creative energy, cultural vibrancy, entrepreneurial intention, economic growth, social welfare, and jobs. Investments need to be made in social factors and economic factors.