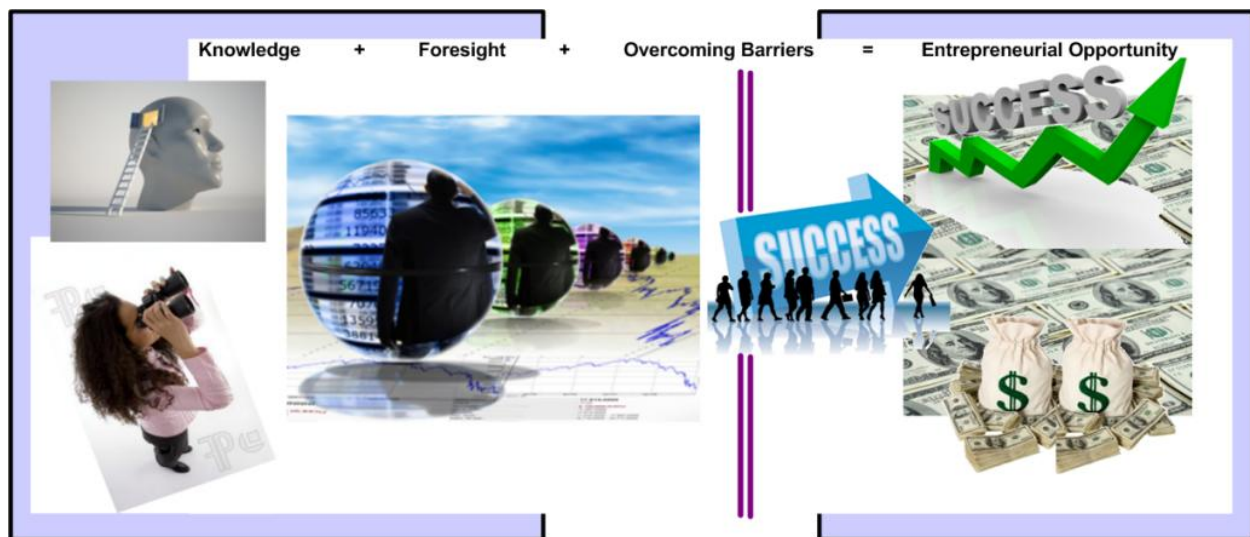


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## Knowledge and Knowledge Barriers

November 14, 2011



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## Abstract

This paper investigates spacial clustering of entrepreneurship and considers work advanced by David Andersson in the field. It assesses the influence that knowledge, in the form of insight, has on creating local economic opportunities, and relates how knowledge is used to advance the theory of spacial clustering to other economic models. A survey of how knowledge is used in some of our economic theories is performed to see if its use in the spacial clustering proposition is consistent. In reviewing how knowledge influenced the spacial nature of entrepreneurship, it was determined that alertness of local economic opportunities plays an essential role in determining successful economic endeavors and supports a core management construct that accurate information is fundamental for effective decision making.

The review of how knowledge is used within many of our current economic theories is enlightening. Entrepreneurial knowledge with local time and space information incorporated was found more persuasive as a basis for investments than centralized technical knowledge. Alertness of profit opportunities was found to be the type of knowledge that will consistently reduce investment risks. Knowledge, in its many forms, is not necessarily reducible to entrepreneurial alertness, but rather, is merely a factor that helps explain when discoverable profit opportunities are available to entrepreneurs. Entrepreneurs must still have perfect foresight and overcome knowledge barriers. This paper concludes that spacial clustering of entrepreneurial innovation, despite the introduction of new networking technologies that facilitate near-universal distribution of information, is an appropriate economic model that takes into account the face-to-face nature necessary for maintaining entrepreneurial alertness.

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### Introduction

This paper investigates spacial clustering of entrepreneurship and considers work advanced by Andersson (2005, pg. 21) in the field.<sup>1</sup> It assesses the influence that knowledge, in the form of insight, has on creating local economic opportunities, and relates how knowledge is used to advance the theory of spacial clustering to other economic models. A survey of how knowledge is used in some of our economic theories is performed to see if its use in the spacial clustering proposition is consistent. In reviewing how knowledge influenced the spacial nature of entrepreneurship, it was determined that alertness of local economic opportunities plays an essential role in determining successful economic endeavors and supports a core management construct that accurate information is fundamental for effective decision making.

### Knowledge and Knowledge Barriers

This section surveys how knowledge is used in some of our fundamental economic theories. A review of articles dealing with economic decision making and entrepreneurship seems to converge into analyzing the knowledge necessary to exploit economic opportunities, or overcome the barriers that restrain the acquisition of such knowledge.

The origin of the theory of general equilibrium is credited to a French-born, Swiss economist, Leon Walras.<sup>2</sup> In his *Éléments d'économie politique pure* (1874–77), which translated from French to English means, *Elements of Pure Economics*, he built a system of simultaneous equations to model the economy and asserted that since the number of equations equaled the number of unknowns, the equations could be solved to give prices for goods that would result in equilibrium of supply and demand. Armed with the calculated price values that achieve equilibrium, investors could presumably plan the production of their goods.

Italian economist, Enrico Barone,<sup>3</sup> extended Walras' conditions of general equilibrium, and in 1908, presented a mathematical model of an economy under which certain relations, later identified with shadow prices, had to be satisfied for "maximum collective welfare." The shadow prices corresponded to the least-cost-price of production reached in competitive equilibrium. He suggested that economic efficiency in a collectivist economy was achievable. Armed with the knowledge of the shadow prices investors could make more informed production decisions.

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<sup>1</sup> Andersson, David E. (2005), *The Spatial Nature of Entrepreneurship*, The Quarterly Journal of Austrian Economics, Vol. 8, No. 2, Summer 2005, pg.s 21-34.

<sup>2</sup> Léon Walras (1834 – 1910), was an economist credited with one of the first comprehensive mathematical analyses of general economic equilibrium. Because Walrus' wrote in French, his work did not get much attention in Britain, the hotbed of 19th-century economics. Today, however, he is one of the most widely studied 19th-century economists.

<sup>3</sup> Enrico Barone (1859 – 1924) has been referred to as the founder of the pure theory of a socialist economy. His analysis, and the responses of the Austrian Economists', fueled discussion on whether equilibrium price values could be calculated, and whether market socialism could be coordinated in the 1930s. He stressed that such a result could not be calculated easily, but only by experimentation on a large scale with a large data collection effort.

Friedrich Hayek<sup>4</sup> was an Austrian-born economist considered to be one of the most important economist and political philosopher of the twentieth century. His account of how changing prices communicate signals in the form of knowledge that allow investors to coordinate their plans is widely regarded as an important achievement in economics. In *Economics and Knowledge*,<sup>5</sup> Hayek asserted that equilibrium analysis is based on a faulty premise that all managers universally get the “totality” of information they need to base their economic decisions on from the economy. Consequently, equilibrium principles mislead decision makers into believing information about the price of goods that an economy can support. Since these price values are then used as the basis of investment decisions, riskier business operations may result. In a second paper, *The Use of Knowledge in Society*,<sup>6</sup> Hayek questioned how economic systems use knowledge to support investment decisions and pointed out that scientific knowledge collected by centralized planners is wholly inadequate since it does not have the capacity to consider local opportunity knowledge.

John Nash,<sup>7</sup> proposed a solution concept in game theory referred to as the “Nash Equilibrium.” In a game involving two or more players, in which each player is assumed to know the equilibrium strategies of the other players, and no player can benefit by changing his or her strategy while the other players keep their strategy unchanged, then the current set of strategy choices and the corresponding payoffs constitute a Nash equilibrium.<sup>8</sup> Essentially, a non-cooperative game is a “profile of strategies, one for each player in the game, such that each player's strategy maximizes his expected utility payoff against the given strategies of the other players.”<sup>9</sup> If the behavior of all the players in such a game can be predicted, then a Nash equilibrium state is achieved. On the other hand, if the predicted behavior “does not satisfy the conditions for Nash equilibrium, then there must be at least one individual whose expected welfare could be improved simply by re-educating him to more effectively pursue his own best interests.”<sup>10</sup> In a business context, armed with knowledge of competitor strategies, a group of competitors could obtain a Nash equilibrium state if none of them can benefit from changing their strategy. Thus, equilibrium in a non-cooperative competition occurs when each economic decision maker's strategy maximizes his expected utility payoff against the given strategies of the other competitors. Armed with the knowledge there is a Nash equilibrium state and, more importantly, that

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<sup>4</sup> Friedrich August von Hayek (1899– 1992) was best known for his defense of free-market capitalism. Hayek was concerned with business cycles, the role of the government in the economy, and especially with totalitarianism. In 1974 Hayek shared the Nobel Memorial Prize in Economics with Swedish economist Gunnar Myrdal for his pioneering work in the theory of money and economic fluctuations.

<sup>5</sup> Hayek, Friedrich A. (1937), *Economics and Knowledge*, *Economica Journal*, New Series, Vol. 4, No. 13, February 1937, pgs. 33-54.

<sup>6</sup> Hayek, Friedrich A. (1945), *The Use of Knowledge in Society*, *The American Economic Review*, Vol. 35, No. 4, September 1945, pgs. 519-530.

<sup>7</sup> Nash, Jr., John Forbes, (born 1928) is an American mathematician and economist who made advances in game theory, differential geometry and partial differential equations. Nash provided insight into the factors that influence chance in games. He shared the 1994 Nobel Memorial Prize in Economic Sciences and was the subject of a recent Hollywood movie titled *A Beautiful Mind*.

<sup>8</sup> Nash, Jr., John F. (1950), *Equilibrium Points in N-Person Games*, *Proceedings of the National Academy of Sciences U.S.A.*, Vol. 36, pgs. 48-49.

<sup>9</sup> Myerson, Roger B. (1999), *Nash Equilibrium and the History of Economic Theory*, *American Economic Association, Journal of Economic Literature*, Vol. XXXVII, Nashville, TN, September 1999, pg.s 1067-1082.

<sup>10</sup> Id., Myerson (1999), pg. 1073, para. 2.

competitors do not have a business advantage to change their business strategies, investment decisions can be made with less risk.

Kirzner (1973, pg. 48) developed a theory of entrepreneurship that contends entrepreneurial action is an attempt to profit from perceived differences in buying and selling prices.<sup>11</sup> The pure entrepreneur, he asserts, “proceeds by his alertness to discover and exploit situations in which he is able to sell for high prices that which he can buy for low prices. Pure entrepreneurial profit is the difference between the two sets of prices.”<sup>12</sup> Kirzner’s theory is likely the most direct example of knowledge utilization. If an economic decision maker determines that a product can be made or bought at one price, and sold for a larger amount per unit, then that knowledge can be leveraged to set up an investment targeted at exploiting the difference in the prices.

Gary Hamel’s<sup>13</sup> theory of core competency tracking<sup>14</sup> is enlightening and seems well suited as a tool for today’s corporate managers to plan investments. Essentially, when you clarify core competencies, “your entire organization knows how to support your competitive advantage, and readily allocates resources to build cross-unit technology and production links.” The result is a management team that, armed with the knowledge of what the corporation’s core competencies are, can identify projects which embody the firm’s core competencies and leverage their unique skill sets and offerings to become successful.

In a theory about economic benchmarking,<sup>15</sup> Drucker (1995, pg. 54) relates the economic successes a corporation has with their ability to create “core competencies” that lead to market leadership positions. In a discussion on knowledge requirements he begins to abstractly define the type of data that should be collected to help the corporate managers monitor the strength and relative position of their core competencies. By aligning with Hayek’s concern that managers need accurate, but relevant, information to base their economic decisions on, Drucker “takes the first important steps towards defining the types of information modern information systems can process to support economic decision makers with near real time data monitoring the strength and position of core competencies.”<sup>16</sup> By focusing on knowledge about core competencies, “our society can limit the damage brought to light by Hayek’s contention that individual economic decision makers require information systems that distribute the “totality” of economic data to all participants in the market place, but impliedly are not

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<sup>11</sup> Kirzner, Israel M. (1973), *Competition and Entrepreneurship*, University of Chicago Press, Chicago, IL, 1973, pg. 48, para. 2.

<sup>12</sup> Id., Kirzner (1973), pg. 48, para. 2.

<sup>13</sup> Hamel, Gary (born 1954), was recently ranked by *The Wall Street Journal* as the world's most influential business thinker, and Fortune magazine has called him "the world's leading expert on business strategy." Hamel has authored 15 articles for the *Harvard Business Review* and is the most reprinted author in the *Review's* history. As a consultant and management educator, Hamel has worked for companies including General Electric, Time Warner, Nokia, Nestle, Shell, Best Buy, Procter & Gamble, 3M, IBM, and Microsoft. His pioneering concepts such as "strategic intent," "core competence," "industry revolution," and "management innovation" have changed the practice of management in companies around the world.

<sup>14</sup> Hamel, Dr. Gary P., (1990), *The Core Competence of the Corporation*, Harvard Business Review, May-June, 1990.

<sup>15</sup> Drucker, Peter F. (1995), *The Information Executives Truly Need*, Harvard Business Review, January – February 1995, pgs. 54-62.

<sup>16</sup> Ray, Jeffrey S. (2010), “The Economic Man Standard,” paper presented to SMC University, Zurich, Switzerland, October 23, 2010, pg. 12, para. 2.

capable of being delivered, since central planners have no way to ascertain how end users will leverage it to suit local opportunities.”<sup>17</sup>

Holcombe (1998, pg. 45) contributes the theory of entrepreneurial accumulation.<sup>18</sup> It asserts that successful business ventures owe their existence to “an accumulation of past entrepreneurship.”<sup>19</sup> Holcombe asserts that “entrepreneurial insights lay the foundation for additional entrepreneurial insights, which drive the growth process.”<sup>20</sup> The theory provides that accumulation of entrepreneurship can create an environment where present profit opportunities exist because of past entrepreneurial actions.<sup>21</sup> In an interesting distinction, Holcombe notes that even though knowledge doesn’t necessarily create entrepreneurial discoveries, it will create “discoverable opportunities.”<sup>22</sup> Armed with the knowledge that the investment team has leveraged their relationships to support successful business operations in the past, the same team can pursue new opportunities with less risk.

Stewart (2002, pg. 1) convincingly shows that conventional accounting is broken and provides inaccurate valuations.<sup>23</sup> Conventional accounting, which presumably is used to support a majority of today’s economic decisions, does not provide decision makers with accurate information since it fails to take into account the cost of the capital that is used to generate earnings. By overstating earnings, managers are knowingly overstating the value of their company shares to investors, who then make poor investment decisions based on the misrepresented valuations. Since traditional accounting processes inhibit the generation of accurate information, they are categorized as a knowledge barrier. To counter the knowledge barrier created by our conventional accounting processes, Stewart defined a new Economic Value Added (EVA) metric that does account for the cost of capital and, therefore, results in more accurate corporate valuations. If used as the basis of economic decision making, the EVA metric will eliminate the pressure on corporate managers to make risky investment decisions funded with low interest loans<sup>24</sup> which tend to show some profit on the balance sheet no matter how poor the opportunity is.

According to Andersson (2005, pg. 21), there is spacial positioning of entrepreneurs due to alertness of profit opportunities which are dependent on location.<sup>25</sup> Entrepreneurial process justifies a realistic urban and regional economic model that combines equilibrium into a dynamic setting where agglomeration economies are exploited. Andersson notes that since Kirzner’s theory of entrepreneurship fails to consider alertness opportunities associated with “spacial positioning” it is

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<sup>17</sup> Id., Ray (2010), pg. 12, para. 2.

<sup>18</sup> Holcombe, Randall G. (1998), *Entrepreneurship and Economic Growth*, The Quarterly Journal of Austrian Economics, Vol 1. No. 2, pg.s 45-62.

<sup>19</sup> Andersson, David E. (2005), *The Spatial Nature of Entrepreneurship*, The Quarterly Journal of Austrian Economics, Vol. 8, No. 2, Summer 2005, pg.s 21-34.

<sup>20</sup> Id., Holcombe (1998), pg. 46, para. 1.

<sup>21</sup> Id., Andersson (2005), pg. 24, para. 4.

<sup>22</sup> Id., Holcombe (1998), pg. 50, para. 1.

<sup>23</sup> Stewart III, G. Bennett (2002), *Accounting is Broken, Here’s How to Fix It: A Radical Manifesto*, Stern Stewart Research’s Evaluation Periodical, Vol. 5, Issue 1, NY, September 2002.

<sup>24</sup> Id., Bennett (2002), pg. 6, para. 4.

<sup>25</sup> Id., Andersson (2005), pg 21, para. 2.



incomplete.<sup>26</sup> So why are spacial relationships important to economic decision makers? A spacial relationship is said to link a location with knowledge about profit opportunities. Thus, it is our old friend “knowledge” again. Each location is said to have a “unique agglomeration of knowledge”<sup>27</sup> associated with it. Entrepreneurs can increase their alertness to profit opportunities by tracking the spacial positioning of centers of innovation.

Although not wanting to compare myself with the esteemed economists referenced above, the author does want to make a final point about knowledge which I referred to in a previous paper. Pertaining to corporations that communicate vertically through classical organizational structures, it is my contention that data gets deceptively manipulated as it moves up the management chain to senior managers. In addition to slowing down decision making, a centralized communications approach is also “vulnerable to producing poor or politically based decisions as successive layers of management filter the real issues in the information they pass up the management chain to protect their standing.”<sup>28</sup> Communicating through vertical organizational structures, therefore, is a knowledge barrier.

Each of the economic theories just discussed is summarized in Table 1 on the next page and categorized as either a “Knowledge Utilization” concept, or a “Knowledge Barrier.”

The remainder of this paper looks at how our economic models assume knowledge is used, with a specific focus on how knowledge furthers the spacial clustering concept, and concludes that knowledge, in its many forms, is not necessarily reducible to entrepreneurial alertness, but rather, is merely a factor that helps explain the discoverable profit opportunities that entrepreneurs face.

### Types of Knowledge

Knowledge is typically referred to in a general sense. Hayek made a distinction between scientific knowledge being utilized by central planners and local opportunity knowledge that could be the basis to exploit a competitive advantage. Kirzner described an entrepreneurial alertness to discover and exploit economic opportunities. Loasby (1999, pg. 1) made a distinction between “knowing that,” and “knowing how.”<sup>29</sup> Knowing that refers to scientific knowledge of facts and theories, while knowing how refers to having the skill to perform the actions necessary to achieve the desired objective. Loasby goes on to make another distinction in the types of knowledge. Direct knowledge refers to personal knowledge, and indirect knowledge is associated with knowing where to get the desired knowledge. In current times with the availability of the internet as a research tool, and its associated information overload, management of indirect knowledge is of greater importance and needs to be harvested similar to “just-in-time” procurement of parts on an assembly line.

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<sup>26</sup> Id., Andersson (2005), pg. 21, para. 3.

<sup>27</sup> Id., Andersson (2005), pg. 23, para. 5.

<sup>28</sup> Ray, Jeffrey S. (2010), “The Economic Man Standard,” paper presented to SMU University, Zurich, Switzerland, October 23<sup>rd</sup>, 2010, pg. 10.

<sup>29</sup> Loasby, Brian J. (1999), *Knowledge, Institutions, and Evolution in Economics*, London, Routledge.

## Knowledge and Knowledge Barriers

**Table 1. Utilization of Knowledge in Economic Modeling**

Theory	Creator	Year	Knowledge Aspect	Statement of Theory
Theory of general equilibrium	Walras, Leon	1877	Knowledge Utilization	A price value at the intersection of the supply and demand curve establishes equilibrium price values where a buyers willingness to pay for a product is equal to a sellers willingness to sell it.
Pure theory of social economy	Barone, Enrico	1894	Knowledge Utilization	Extended the conditions of the general equilibrium model to show the feasibility of trial-and-error movement to market equilibrium.
Propositions about the acquisition of knowledge	Hayek, Friedrich A.	1937	Knowledge Barrier	Perfect foresight, although an assumption in equilibrium analysis, is not possible and price values that achieve equilibrium cannot be calculated.
Theory of knowledge	Hayek, Friedrich A.	1945	Knowledge Barrier	Scientific knowledge collected by centralized planners is inadequate to base economic decisions on because it averages out local time and space knowledge needed by entrepreneurs to take advantage of local economic opportunities.
Non-Cooperative Game Theory	Nash, John F.	1950	Knowledge Utilization	Equilibrium in a non-cooperative game occurs when each player's strategy maximizes his expected utility payoff against the given strategies of the other players.
Theory of entrepreneurship	Kirzner, Israel M.	1973	Knowledge Utilization	Entrepreneurial action is an attempt to profit from differences in buying and selling prices of goods.
Theory of core competency tracking	Hamel, Gary P.	1990	Knowledge Utilization	Successful companies need to track the relative position and strength of their core competency areas to plan a path forward that will allow them to retain their leadership role.
Theory of economic benchmarking	Drucker, Peter F.	1995	Knowledge Utilization	Productivity information in the form of benchmarking comparisons against leaders in the industry helps an organization improve competitiveness by making employees realize what steps must be taken to become competitive.
Theory of entrepreneurial accumulation	Holcombe, Randall G.	1998	Knowledge Utilization	Successful business ventures owe their existence to accumulation of past entrepreneurship. Successes result in entrepreneurial insights that lay the foundation for additional entrepreneurial insights, which drives the growth process.
Conventional accounting provides inaccurate information	Stewart III, G. Bennett	2002	Knowledge Barrier	Conventional accounting fails to take the cost of capital into account and overstates earnings which misleads investors.
EVA metric facilitates accurate evaluations	Stewart III, G. Bennett	2002	Knowledge Utilization	A new metric, the Economic Value Added (EVA), that takes the cost of capital into account should be used as the basis of economic decision making to eliminate the pressure to make risky investments simply because they can be funded with low interest loans.
Theory of spacial clustering of entrepreneurial innovation	Andersson, David E.	2005	Knowledge Utilization	There is a spacial positioning of entrepreneurs due to alertness of knowledge of profit opportunities that are dependent on location.
Theory of filtered data manipulation	Ray, Jeffrey S.	2010	Knowledge Barrier	Data gets deceptively manipulated as it moves up the management chain in a centralized reporting company so reporting managers can improve their perceived standing that results from the data.

Andersson also makes some distinctions between how knowledge is used. Whether or not you agree with the proposition that there is a spacial positioning of entrepreneurship, these distinctions alone advance economic theories. In defining the relationship between entrepreneurial alertness and knowledge he describes the former as the “*initiating knowledge* that must always precede the resulting economic decision and action.”<sup>30</sup> (Italics added). Unlike specialized knowledge for which there are labor markets to exploit the special skills, no market is said to exist for entrepreneurial services. Rather than focusing on the services provided by business development professionals and taking exception to this statement, I choose to interpret it in a favorable way. All managers, myself included, must obtain a bit of entrepreneurial spirit as we search for the next opportunity to pursue after our current project is

<sup>30</sup> Id., Andersson (2005), pg. 23, para. 2.

finished. But the current project is where we apply our special skills, or core competency services, to pay the bills, not the entrepreneurial spirit we sometimes summon.

It seems that the indirect, initiating knowledge is where all the trouble lies. Even with new tools like the internet that can make information available almost anywhere, this type of knowledge has to be observed and sensed by face-to-face interactions to be correctly interpreted and acted upon. This is the type of entrepreneurial knowledge that, as Hayek pointed out, cannot be accounted for in many of our economic models. It may also give credibility to Andersson's proposition that there is a spacial positioning of entrepreneurship. While information can easily be distributed without regard to geography, face-to-face relationships are necessary to capture alertness to local opportunities.

### Theory of Spatial Clustering

As a private pilot I have always marveled at how congested and busy the urban areas are where we live and work. Yet when I take off and head in any direction I get, within a short period of time, to completely rural areas with little or no indication of mankind's influence. Andersson's theory of spatial clustering asserts there is a spacial positioning of entrepreneurs that result from alertness of profit opportunities. I think I may have seen this spacial clustering of innovation from the air. As the theory goes, entrepreneurs discover and exploit profit opportunities in different ways, ranging from buying and selling goods at a profit to complex activities involving creation of new services or product innovation. The spacial setting of an entrepreneur is said to influence both the knowledge they embody as workers, and the flows of communicated knowledge they can receive.<sup>31</sup> Specialized innovation clusters, such as Silicon Valley and New York City, are derived from "location-specific concentrations of tacit knowledge."<sup>32</sup> It is reasonable to assume that a person located in an agglomeration of economic activities will notice more profit opportunities. The discovery of such a location constitutes a "spatial positioning of the entrepreneur, which amounts to being alert to the profit generating attributes of a place, and which amounts to a type of fixed start-up activity."<sup>33</sup> Locations with access to tacit knowledge, and local articulated opportunity knowledge that are too new and/or detailed to have been distributed to other locations, are considered superior generators of profit opportunities.<sup>34</sup>

Profits are said to have a coordinating effect on market participants, and across markets for that matter, by signaling where price discrepancies exist. Rivalry among producers will gradually erode the profit opportunity as prices level across competitors and market areas. Timing of the discovery of the opportunity, and one's alertness to discover it, are therefore important, and give entrepreneurs that are properly positioned spatially into agglomeration centers a distinct advantage.

An initial thought one cannot escape from is whether or not this proposition is severely diminished by recent gains in networking technology that allow information to be transmitted almost universally

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<sup>31</sup> Id., Andersson (2005), pg. 24, para. 2.

<sup>32</sup> Desrochers, Pierre (1998), *A Geographical Perspective on Austrian Economics*, Quarterly Journal of Austrian Economics, Vol. 1, No. 2, pg.s 63-83.

<sup>33</sup> Id., Andersson (2005), pg. 25, para. 1.

<sup>34</sup> Id., Andersson (2005), pg. 25, para. 2.

without regard to geography or spacial positioning. Andersson (2005, pg. 24) addresses this concern when he says the transmission of knowledge “still requires spacial proximity. This is especially true of tacit know-how .... which depends for its interpersonal transmission on face-to-face contacts.”<sup>35</sup> Desrochers (2001, pg. 25) confirms the relationship between geographical location for the transmission of tacit knowledge and innovation. He contends agglomeration economies are associated with specialized clusters that derive location-specific concentrations of tacit knowledge.<sup>36</sup> Desrochers (1998, pg. 63) also explains that face-to-face interactions between stakeholders transmits tacit knowledge about innovative capacity that are better captured in personal relationships.<sup>37</sup>

### Local Knowledge and Entrepreneurial Alertness

All of the economic theories discussed above and summarized in Table 1 make assumptions about how knowledge does or does not make it to economic decision makers. A central theme consistently referred to by our best economist is that there is a relationship between successful organizations and their ability to leverage knowledge about local time and space economic opportunities. This section investigates the influence knowledge has on being alert to local entrepreneurial opportunities.

The probability of an investment's success is related to the amount of existing knowledge that is exploited to implement it. Some of this knowledge must necessarily include what Hayek refers to as local "knowledge of the particular circumstances of time and place."<sup>38</sup> This "body of very important but unorganized knowledge" cannot be scientific knowledge, leading one to conclude that it cannot be used effectively by a central planning center.<sup>39</sup> Anderson (2005, pg. 23) asserts the “[e]ach location is associated with a unique agglomeration (or stock) of knowledge, which determines the array of profit opportunities that entrepreneurs may discover.”<sup>40</sup> More than anything else, an entrepreneur's alertness to local time and space economic opportunities will determine their successfulness. Hayek addressed the issue directly when he said, “it would seem to follow that the ultimate decisions must be left to the people who are familiar with these (local time and space) circumstances, who know directly of the relevant changes and of the resources immediately available to meet them.”<sup>41</sup> (Clarification added).

Andersson (2005, pg. 22) shows preferential treatment of the spacial factor when he notes that Kirzner's theory of entrepreneurship does not contain an explicit treatment of time and place, and concludes that the theory is incomplete because it does not account for spacial positioning. Accounting for time, however, is not considered to be essential and Andersson provides, “while the entrepreneur may choose her spacial location, there is no way in which she would be able to choose her location in time. Recalling Hayek's proposition that local “time and space” knowledge could be exploited to economic advantage, my initial concern is that by discounting the time element from his analysis Andersson seems

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<sup>35</sup> Id., Andersson (2005), pg. 24, para. 1.

<sup>36</sup> Desrochers, Pierre (2001), *Geographical Proximity and the Transmission of Tacit Knowledge*, Review of Austrian Economics, Vol. 14, No. 1, pg.s 25-46.

<sup>37</sup> Id., Desrochers (1998), pg. 65.

<sup>38</sup> Id., Hayek, F. A. (1945), pg. 521, para. 4.

<sup>39</sup> Id., Hayek, F. A. (1945), pg. 521, para. 4.

<sup>40</sup> Id., Anderson (2005), pg. 23, para. 5.

<sup>41</sup> Friedrich August von Hayek, *The Use of Knowledge in Society, Austrian Economics: A Reader*, ed. Richard M. Ebeling, Hillsdale, MI, 1991, pg.s 254-255.

to be at odds with Hayek. Although the entrepreneur cannot choose her location in time, she can choose when she acts on economic opportunities and when she goes to various locations to be exposed to local economic alertness. Time and space seem to be naturally coupled. I'm not able to follow the distinction as to why space is imperative but time can be abstracted out. The Entrepreneur can also decide when to act, but more importantly, can decide when to go to urban centers like New York, or specialized clusters abundant with tacit knowledge like Silicon Valley, to leverage face-to-face interactions and utilize alertness knowledge that can be optimized by considering space, as well as time, agglomeration opportunities.

While I disagree with Andersson's premise that time can be abstracted out, although his point that spacial relationships must be considered in the economic model is compelling. Migrating to under developed markets with entrepreneurial opportunities created in urban areas, at the right time, adds other dimensions (time and space) to Holcomb's contention that entrepreneurial successes owe their existence to accumulation of past entrepreneurial successes. Locations with good access to tacit knowledge or local articulated knowledge too new and detailed to have been distributed to other locations are said to be "superior generators of profit opportunities."<sup>42</sup>

### The Influence of Migrations and Imitations

When an entrepreneur buys labor in one market because it is a better value (i.e., better, cheaper, faster), and sells the resulting product in a second market that can support a better price structure, there is a "bridging" of markets. An entrepreneur engaged in such activities will attract migrations and imitations.

Migration occurs when an immigrant in one country notices that salaries for their skill set, above any cost of living discrepancies, is better in another location and migrates there to take advantage of them. As more and more of these workers migrate toward the better salaries, the old location will start to develop a shortage and eventually start to raise the salaries and close the gap at least to a point where it won't be worth the cost of moving. As more and more workers migrate, the new location will eventually recognize the shortage is diminishing and will start to lower the offered salaries. Eventually, an equilibrium state will be achieved where both locations will offer about the same salaries. At this point the economic opportunity related to the offering of the existing service to the new location will be lost since it will no longer achieve a better selling price. The spacial approach relates how profit, rents and capital value changes overtime due to changing land use patterns. According to Andersson, a spacial approach "should illuminate urbanization and migration processes by relating how profits, rents, and capital values change over time due to changing land use patterns."<sup>43</sup> The spacial clustering theory should, and does, model and explain urbanization and migration processes quite well. It will be interesting to see if further work is done in this area.

Imitation is a similar concern to the entrepreneur that sells products across markets due to favorable price structures. If a second entrepreneur sees a competitor producing a product and selling it in

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<sup>42</sup> Id., Andersson (2005), pg. 25, para. 2.

<sup>43</sup> Id., Andersson (2005), pg. 21, para. 3.

another location due to favorable selling prices, then they will be tempted to set up a similar operation. The competition between the original entrepreneur and the imitator will eventually be strong enough to erode sales prices until at some point there is no longer an advantage for selling at the new location. Thus, to the extent that labor services have close substitutes, imitation tends to lower costs in the higher-priced labor market and raise costs in the lower-priced one until an equilibrium state is achieved between the two markets.

Migration and immigration are examples of spacial positioning concepts that are explained quite well by the spacial positioning model and seem to produce logically sound results. Anderson uses this fact as proof of his theory of spacial clustering and notes they tend to explain why this type of entrepreneurship often triggers the urbanization process.<sup>44</sup>

### **Well Defined Property Rights Stimulate Knowledge as Human Capital**

In stressing the role of spacial clustering on entrepreneurial innovation, Anderson (2005, pg. 32) identifies a general vagueness about "entrepreneurial knowledge," which is sometimes confused with deployable technological knowledge like that embodied in migratory, technically skilled, workers considered to be human capital.<sup>45</sup> In an interesting footnote the author illustrates the difference between entrepreneurial and technical knowledge by using the former Soviet Union as an example. Poor underdeveloped countries stifle exploitation of entrepreneurial opportunities due to contested property rights that are poorly protected by dysfunctional institutions subject to "bureaucratic arbitrariness" and corruption. Since potential entrepreneurs do not have any mechanism for protecting property accumulated through successful entrepreneurial activities, they are not as motivated to pursue entrepreneurial opportunities. With respect to the Soviet Union, they were able "to host substantial agglomerations of people with advanced technological knowledge or man capital"<sup>46</sup> for as long as they tightly controlled emigration. Since the Soviet Union lacked the system property rights that make exploitation of the entrepreneurial knowledge desirable, profit opportunities were not pursued in their closed economies despite having the skilled labor to do so. Thus, to exploit "technical knowledge" as a "entrepreneurial knowledge" opportunity, the knowledge must also exist within a construct (such as well defined property rights) that motivates its use with respect to economic opportunities.

### **How Knowledge Advances the Theory of Spacial Clustering**

Accurate knowledge is fundamental for effective decision making. More importantly, the right kind of knowledge is needed to support the economic opportunities that arise in particular circumstances. One could think of situations where scientific knowledge, despite Hayek's warning that we not rely on it to the extreme that central planners do, could be harnessed to propel a successful business venture. There are many other forms of knowledge that could support successful business operations given the right circumstances. As managers we are trained to make decisions based on reducing risk levels to the extent possible. What we need, therefore, is consistency; that is entrepreneurial knowledge that will

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<sup>44</sup> Id., Andersson (2005), pg. 29, para. 4.

<sup>45</sup> Id., Andersson (2005), pg. 32, para. 3.

<sup>46</sup> Id., Andersson (2005), pg. 32, footnote 7.

consistently result in successful business pursuits. The review of economic theories summarized in Table 1 tells us that entrepreneurial knowledge that leverages local economic opportunities is more effective, more often, for engaging in successful business ventures. Consider the types of information that each theory suggests can be exploited to consistently predict favorable business conditions:

- The price value of goods at the intersection of the supply and demand curve [Walras – theory of general equilibrium]
- The strategies of competitors and the knowledge that their objectives have not changed [Nash – non-cooperative game theory]
- The difference in the buying and selling price of goods [Kirzner – theory of entrepreneurship]
- The relative position and strength of your organizations core competencies [Hamel – theory of core competency tracking]
- Productivity information in the form of benchmarking [Drucker – theory of economic benchmarking]
- Information pertaining to past relationships that have been tied to successful business ventures [Holcombe – theory of entrepreneurial accumulation]
- Information related to alertness of knowledge of profit opportunities [Andersson – theory of spacial clustering of entrepreneurial innovation].

Holcombe also leveraged the concept of time to help explain entrepreneurship.<sup>47</sup> In discussing his theory of entrepreneurial accumulation,<sup>48</sup> he stressed the importance of time in real-life entrepreneurship when he asserted that "successful business ventures owe their very existence to an accumulation of past entrepreneurship." Business relationships already primed by past successes, for example, will be easily convinced to expand the scope of the dealings to pursue new opportunities. Holcombe correctly asserts that "entrepreneurial insights lay the foundation of additional entrepreneurial insights, which drive the growth process."<sup>49</sup>

So, given the claim that there is a spacial positioning of entrepreneurship, how can we use our analyses of knowledge to support or contest it? What type of knowledge is necessary to exploit the theory to economic advantage? How does the required knowledge compare to other economic theories that have been around long enough to develop a track record and give us confidence in how we use it? Answers to these questions will help us make a decision regarding the claim of spacial positioning of innovative opportunities. If there is one thing we can conclude based on review of how knowledge requirements influence economic theories, it is the type of knowledge that could be consistently exploited to base successful business operations on is not technology related. Rather, it is an entrepreneurial alertness to profit opportunities. If our entrepreneurs see a profit opportunity, it is their alertness to the opportunity that is the essential knowledge that can be consistently exploited, not

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<sup>47</sup> Id., Holcombe (1998), pg. 45.

<sup>48</sup> Id., Holcombe (1998), pg. 45.

<sup>49</sup> Id., Holcombe (1998), pg. 46.



the nature of particular transaction.<sup>50</sup> So when we try to act like centralized planners and blindly implement an economic approach universally, like calculating a value for goods at the intersection of the supply and demand curves, or the difference in the buying and selling prices, for example, we are vulnerable to some failures. There will be circumstances that universal application of these formulas will result in bad investment decisions due to the dynamics of the market place. But when we focus in on the entrepreneurial alertness to profit, like observing that the strategies of our competitors has no advantage to change,<sup>51</sup> monitoring organizational core competencies<sup>52</sup>, or leveraging past relationships that have led to successful ventures,<sup>53</sup> for example, which can be related to Hayek's concept of perfect foresight, we begin to focus on the correct aspects of knowledge that will ensure our economic decisions are based on accurate information and, as a result, will more consistently lead to success. Anderson (2005, pg. 32) addressed the confusion between the non-deployable character of entrepreneurial foresight, and deployable technology knowledge when he concluded "the remedy for this vagueness is a spatial theory of development that puts entrepreneurial alertness to profit opportunities at its core."<sup>54</sup>

### Conclusions

A review of how knowledge is used within many of our current economic theories has been conducted. Entrepreneurial knowledge with local time and space information incorporated was found more persuasive as a basis for investments than centralized technical knowledge. Alertness of profit opportunities was found to be the type of knowledge that will consistently reduce investment risks.

Knowledge, in its many forms, is not necessarily reducible to entrepreneurial alertness, but rather, is merely a factor that helps explain when discoverable profit opportunities are available to entrepreneurs. Entrepreneurs must still have perfect foresight and overcome some of the knowledge barriers indicated in Table 1 to increase their probability of success. In equation form, you might say that:

**Knowledge + Foresight + Overcoming Knowledge Barriers = Entrepreneurial Opportunities.**

Finally, spacial clustering of entrepreneurial innovation, despite the introduction of new networking technologies that facilitate near-universal distribution of information, is an appropriate economic model that takes into account the face-to-face nature necessary for maintaining entrepreneurial alertness.

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<sup>50</sup> If there is a technical component to the undertaking, the entrepreneur will presumably hire workers with the required skills.

<sup>51</sup> A Nash equilibrium means that for a brief moment in time your entrepreneurial foresight will be based on a market place where your competitors do not have a business advantage to change their strategies. Having this knowledge will reduce the entrepreneurial risk when an investment decision is made.

<sup>52</sup> Monitoring the position and strength of your core competencies will make you alert to profit opportunities in the core competency area.

<sup>53</sup> Investment risk is reduced where similar strategies and relationships are re-engaged into new opportunities.

<sup>54</sup> Id., Andersson (2005), pg. 32, para. 4.