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Collective Entrepreneurship: The Strategic Management of Research Triangle Park

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The Strategic Management of Research Triangle Park

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Abstract

Perception and action describe the entrepreneur as a dynamic figure in economic activity. It follows then that entrepreneurship entails a process that begins with perception and is completed with action. When it comes to places—meaning physical localities—rarely is it the case that the perception of opportunity and the ability to act on that perception are embodied in a single individual. This paper illustrates the strategic management of one place in particular, Research Triangle Park in central North Carolina. This history of Research Triangle Park suggests and that the early perception for the park, and the action to see it from "seed to harvest," were the result of many individuals each exhibiting their own entrepreneurial ability. Thus, we introduce the notion of *collective entrepreneurship*, and we suggest that it might be a critical ingredient to a recipe for the successful strategic management of places.

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Introduction

The entrepreneur and the actions of the entrepreneur, entrepreneurship, have over time been characterized in many ways, and those characterizations are as varied as the scholars who have proffered them. As Hébert and Link (1989, p. 41) wrote, "the entrepreneur has worn many faces and played many roles." But, Hébert and Link (2009) go further and synthesize extant thought by suggesting that an entrepreneur is one who perceives opportunity and has the ability to act on that perception.

Perception and action describe the entrepreneur as a dynamic, not static, figure in economic activity. It follows then that entrepreneurship entails a process that begins with perception and is completed with action. This action may or may not be successful over time. Regardless of how the market reacts to the entrepreneurial undertaking,[1] boldness and risk taking have nevertheless been demonstrated.

When it comes to places—meaning physical localities—rarely is it the case that the perception of opportunity and the ability to act on that perception are embodied in a single individual. This is not to say that one individual is not capable of such behavior. Machlup (1980, p. 179) noted that an entrepreneur is "alert and quick-minded, [one who perceives] what normal people of lesser alertness and perceptiveness would fail to notice."

When it comes to places, however, timing is not in the sole control of the entrepreneur. He/she is often shackled with ownership and regulation issues as well as competing personalities. These constraints often dampen a single person's ability to move a place in a new direction.

[1] Link and Link (2009) argue that the public sector, absent a market mechanism, can exhibit entrepreneurial behavior.

When it comes to the strategic use of places, history will show that several entrepreneurs have often had critical roles to play.[2] Closely related to the use of places is how those places have been strategically managed.

This paper illustrates the strategic management of one place in particular, Research Triangle Park in central North Carolina. This history of Research Triangle Park suggests and that the early perception for the park, and the action to see it from "seed to harvest" (Link 2002), were the result of many individuals each exhibiting their own entrepreneurial ability along the way.[3] Thus, we introduce in this paper the notion of collective entrepreneurship, and we suggest that it might be a critical ingredient to a recipe for the successful strategic management of places.

The Place, Research Triangle Park

Research Triangle Park is an actual tract of land of approximately 6,800 acres located in the center of a scalene triangle formed by (alphabetically) Duke University, North Carolina State University,[4] and the University of North Carolina at Chapel Hill. See Figure 1.

At present, there are about 170 global companies in the Park employing nearly 39,000 individuals and contractors.

The Perception of a Park

Brandon P. Hodges was elected as state treasurer of North Carolina in November 1948 with the goal of bringing new types of industry, technology-based industries in particular, into the state. At that time, the North Carolina economy was centered on the traditional industries of furniture, textiles, and tobacco. In 1950, according to the U.S. Department of Commerce, there were only five states in the nation that had a per capita income level lower than North Carolina's. By 1952, only two states did—Arkansas and Mississippi. There was justifiable concern that the economy needed to diversify in order to grow, and some thought that the state's university structure could possibly be used as a key element in an economic development plan.

[2] See, for example, this discussion by Safford (2009) about the strategic management of Youngstown, Ohio, and Allentown, Pennsylvania.
[3] The remainder of this paper draws directly from Link (1995, 2002).
[4] North Carolina State College of Agriculture and Engineering of the University of North Carolina at Raleigh became North Carolina State University in 1965.

Romeo Guest, a Greensboro North Carolina contractor, is generally credited with the Research Triangle concept.[5] His idea was simple. For many years, North Carolina, and the South in general, lagged in scientific research and in the application of research to industry. So, perhaps the triangle universities could act as a magnet to attract research companies into the area, and this in turn would lead to the development of new technology-based industries throughout the state.

Guest was able to sell his idea to Brandon Hodges, and in early December 1954 Brandon Hodges took the Research Triangle idea to Governor Luther Hodges (no relationship). But, the Governor was at that time only lukewarm to the concept.

It has been argued (Link 1995) that the Governor, because of his textiles background, did not fully understand the nature of research and development (R&D) much less its role in economic development. After the unsuccessful December meeting with the Governor, William Newell, director of the North Carolina Textile Research Center and one intimately familiar with the importance of R&D, prepared at the urging of Brandon Hodges and others a report entitled "A Proposal for the Development of an Industrial Research Center in North Carolina." The report was sent to the Governor in late January 1955. Records from the ensuing meeting with the Governor show that the meeting went well; archival communications suggest that thereafter the Research Triangle idea because simply known as "the Governor's Research Triangle" (Link 1995).

Management of the Perception

Guest took it upon himself to meet with the relevant leadership at the three triangle universities. These meetings were not simply an altruistic gesture. Rather, Guest saw a specific role for himself in the Research Triangle project. He hoped to become the contractor for all of the companies that would eventually locate in the Park, so university commitment to the park idea was critical.

[5] Although, as the history of the Park shows, many individuals took credit for the Park idea especially after its success was inevitable. See Link (1995).

Throughout early 1955 there were numerous meetings about how to implement the Governor's Research Triangle idea including the creation of several committees and working groups. For example, in May of that year the Research Triangle Development Committee was established, and a formal statement of the relationship between the park and the three universities was articulated (Link 1995, pp. 28-29):[6]

> The basic concept of the Research Triangle is that North Carolina possesses a unique combination of educational and research resources and communication facilities eminently suitable to the fostering of industrial research. It is not anticipated that the three universities in the Triangle shall engage directly in the conduct of industrial research, except under carefully designated and administered policies. Rather, the principal functions of the Universities are to stimulate industrial research by the research atmosphere their very existence creates, and to supplement industrial-research talents and facilities by providing a wellspring of knowledge and talents for the stimulation and guidance of research by individual firms.

In March 1956, William Friday became acting president (and later president) of the University of North Carolina system. He, along with Governor Hodges, was instrumental in forming the Research Triangle Committee, Inc. This was a non-stock, non-profit, benevolent, charitable, and educational corporation for the purpose of encouraging and promoting the establishing of industrial research laboratories in North Carolina primarily in the triangle area. This organization became the motivation for North Carolina representatives from the public sector and the university communities to publicize the research triangle concept and to attempt to recruit companies into the area. But, a place was needed to demonstrate to research companies that the triangle concept was viable and was coming to fruition.

The Research Triangle Committee, Inc. attempted to identify investors in land that would eventually become the park. Simply, it was believed that companies that were interested in the

[6] This is an important statement, and one that at the time was often overlooked and misunderstood by non-academicians. The universities saw themselves as magnets to attract research companies to the area, not as participants in those companies' research efforts.

concept would want to visit North Carolina and see something tangible. One investor, Karl Robbins of New York, was found. Robbins had in his earlier years been involved in North Carolina's textile industry so he knew people in the state as well as its citizenry. He initially invested $275,000, and those funds were used by Guest and others to option parcels of land under the name of Pinelands Company. By the end of 1957, just over 3,500 acres had been optioned with another 440 acres pending; the final purchase price would be $700,000.00. However, Robbins became reluctant to meet his promised $1 million investment. The reason for his waning interest in the project was the visible lack of North Carolina investors. Robbins would not send any additional moneys unless matched by investments by North Carolinians. But, such moneys were not to be forthcoming at that time.

Action on the Perception

The for-profit Pinelands Company vehicle for obtaining land for the Park did not seem to be working. While Guest's perception of the role of a research park as a driver for North Carolina's future economic development was widely accepted as sound, neither Guest nor the Governor's office had the ability to act on that perception in a way that would bring the idea to fruition.

Robert Hanes, President of Wachovia Bank and Trust Company, who was a supporter of the triangle idea, and Governor Hodges realized that it was time for a change in course. They approached Archie Davis, chairman of Wachovia Bank and Trust Company, to sell stock in Pinelands Company.

Davis, who knew nothing about Research Triangle or Pineland Company before his meeting with Hanes and Hodges in August 1958, realized immediately on hearing about what had transpired that Guest's perception of the role of a research park for the state was sound but the management of the park idea to date was flawed. As Davis noted (Link 1995, p. 68):

> To me, I just felt without knowing anything about it, [the park idea] just didn't make sense. If this [park] indeed was designed for public service, then it would be much easier to raise money from corporations and institutions and the like,

who were interested in serving the State of North Carolina, by making a contribution.

At an October 1958 meeting of the Research Triangle Committee, Inc., Davis pointed out that the idea of a research park has a public character and should be non-profit undertaking. It was agreed that Davis would raise $1 million for the Committee plus $250,000 for a main building. Within a 30-day period Davis traveled the state, at his own expense, speaking one-on-one with people about supporting a research park for the good of North Carolina, and by the end of December he had exceeded his fundraising goal.

What David did, Guest could never have done. While Guest was entrepreneurial in his perception of the idea of a research park, it took Davis' ability to act on that perception to raise sufficient funds to launch the Park.

The Strategic Management of the Park

One of the most significant events in the history of North Carolina took place on January 9, 1959 in Raleigh. Governor Hodges announced that Davis had raised $1.425 million. These funds were to be used for three purposes:

- to establish the Research Triangle Institute to do contract research for business, industry, and government;
- to construct a new building to house the Institute in the park; and
- to acquire the land that was assembled by Robbins and to pass control of Pinelands Company to the non-profit Research Triangle Foundation.

Soon thereafter Guest resigned from his role in Pinelands Company and watched, as an outsider, what was to happen.

In early October 1959, Chemstrand Corporation purchased 100 acres and broke ground on a research facility later that month. However, it was not until April 1965 that the park idea was validated. IBM announced that it would locate a 600,000 square foot research facility on 400 acres in the Park. That event became the prologue for the future.

Research Triangle Park is arguably to most successful research park in the nation (Link 2002), and perhaps this is due to a unique management strategy. It was written into the certificate of incorporation of the Research Triangle Committee, Inc. in 1956 (Link 2002, p. 63):

> It is the intent and purpose of the corporation to promote the use of the research facilities of the [Duke University, North Carolina State, and University of North Carolina at Chapel Hill] … through cooperation [among] the three institutions and cooperation [among] the institutions and industrial research agencies … . The corporation is a non-profit, benevolent, charitable, and educational corporation and has no capital stock. Upon the dissolution of the corporation, all assets of the corporation shall be divided equally among [the institutions] for the purpose for which [the] institutions were founded.

In 1974, Davis, in his role as president of the Research Triangle Foundation, realized that the universities needed a presence or home in the Park noting (Link 2002, p. 64): "It would be a shame … for the principal beneficiaries of the Park—the universities—not to have some land in the Park for their own use." In 1975, the Triangle Universities Center for Advanced Studies, Inc. (TUCASI), a non-profit corporation, was established on 120 acres in the center of the Park.

According to news reports at that time (Link 2002, pp. 72-73):

> A unique undertaking, TUCASI, represents the nation's first three-university corporation designed to plan and develop joint research and educational activities in a major research park … The major purpose of [TUCASI is] to assist in and facilitate the planning and execution of non-profit research and educational programs that utilize and enhance the productivity of the intellectual and physical resources of [three world-class universities].

In a sense, TUCASI is the universities' home within Research Triangle Park. TUCASI is an ever-present symbol that the universities are at the heart of the Park's mission and therefore at the heart of its success. TUCASI is like a park within a park.

Toward a Theory of Collective Entrepreneurship[7]

Figure 2 presents a simple representation of the development process. Measured on the axes are the allocation of time and effort to public interest and to self-interest that characterized Research Triangle Park.[8] For Guest, the ideal mix of effort to public and private interest is represented by point G. This point represents the result of a complex calculus of both Guest's preferences for the characteristics of the park and the likelihood that a park could be developed with such a mix, that is, it represents for Guest the mix of public and private interest with the highest expected utility. As represented in Figure 2, this mix is consistent with Guest's best estimate, I_G, of the isoquant that would produce the park.[9] In his attempt to put together a workable plan for the park, Guest would presumably have been flexible and willing to explore a variety of public/private combinations different from point G, but sufficiently close so that the net utility after subtracting the additional cost of exploring such alternatives was still positive. The ellipse surrounding G represents the boundaries of his area of exploration with the horizontal orientation of the ellipse indicating that given Guest's experience, contacts, and interests, he had greater flexibility in exploring a range of private interest levels than public interest levels. Guest, as we know, was unsuccessful in furthering the park concept, that is, in bringing it to a reality. Thus, the actual isoquant lies outside of Guest's area of exploration and remained unknown after his efforts.

A similar process occurred with Davis with the addition of the fact that Davis could learn from Guest's (failed) efforts. We suppose that initially, that is, before Guest's efforts, Davis had a relatively balanced ideal mix of public and private interest at point. And, associated with that initial ideal, Davis would have had a region over which he would have been willing to explore, as noted by the circle around point D, and a best estimate I_D of where the isoquant for the park lay. However, having observed Guest's unsuccessful efforts, Davis revised his estimates of the I_D to $I_{D'}$. With that change, his ideal moved to the point D′, and the area of exploration to the ellipse surrounding the point D′. The vertical orientation represents the apparent fact that

[7] "An economist is someone who sees something that works in practice and wonders if it would work in theory." – Ronald Reagan

[8] One could alternatively view this as a tradeoff between proposed levels of public capital and private capital.

[9] It is possible for Guest's ideal G to not be on his best estimate I_G of the isoquant for producing the park if his preferences differ from his subjective judgment of the likelihood of how the park can be developed.

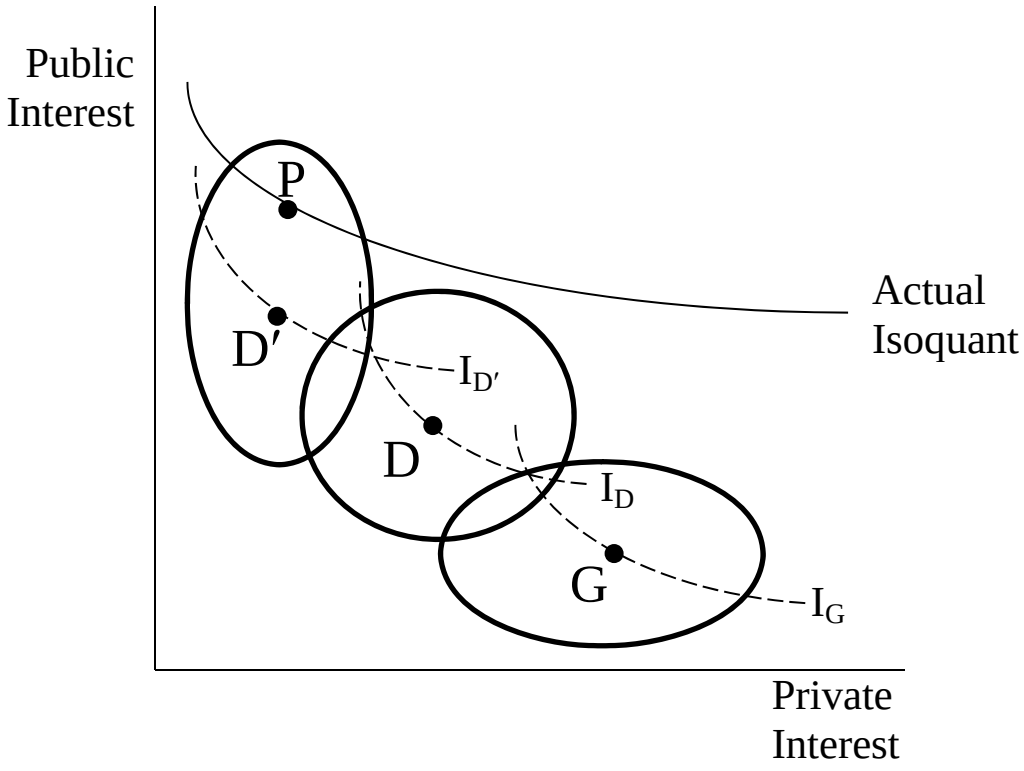
Davis's ability to search over a range of possible level of public interest was now greater than it was over ranges of private interest. As we know, Davis was successful, and hence the actual isoquant, while not perhaps equal to his hypothesized $I_{D'}$, lay within the area he explored. He thus identified a combination such as point P of public and private interest that worked, and the park was created in a manner that would facilitate growth.

To the extent that the above description approximates the strategic management of the development of Research Triangle Park, then one might hypothesize that the strategic management of places is functionally related to the collective positive entrepreneurial effort of individuals, each exercising his/her perception and action at different time based on their personal preferences, expertise, and estimation of the best steps forward. Collectively, they engage in what might be called a process of social sequential learning that moves a place forward for the common weal.

Figure 1:
The Research Triangle Area and the Park[10]

[10] These maps are courtesy of the North Carolina Department of Commerce.

Figure 2
Sequential Learning with Competing Utility Functions & Perceptions



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