

# *Managing the Emergence of Clusters:*

## *An Increasing Returns Approach to Strategic Change*

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**M**anagement scholars have recently begun to take a fresh look at two established concepts: a ubiquitous organizational phenomenon called “clustering” (Baum & Haveman, 1997; Poudier & St. John, 1996), and an unorthodox change theory based on the “science of complexity” (McKelvey, 1999; Stacey, 1995, 1996). In this article, we link these concepts to develop strategies for catalyzing and guiding the emergence of clusters. These strategies apply to economic activities characterized by increasing returns to scale (Arthur, 1994, 1996; Krugman, 1991, 1995, 1996), and they entail collective action by entrepreneurs, policy makers, and not-for-profit (NFP) officials (Van de Ven, 1993). We argue that clustering is not simply a static “location effect” as mainstream theories have suggested, but a dynamic process amenable to a special type of entrepreneurship, one we call “macroentrepreneurship.” We organize the strategies available to macroentrepreneurs in a three-stage model, and illustrate them using the case history of Branson, Missouri’s entertainment cluster that features musical performance theaters.

While this article focuses on managing the emergence of organizational clusters, many of the strategies we address are applicable to other emergent organizational phenomena. For example, readers will find many of the strategies transferable to the creation of industrial parks

(Rauch, 1993) and new urban forms such as revitalized city centers, edge cities, and waterfront developments (Hall & Hubbard, 1998). Furthermore, many of these strategies extend to the building of collaborative networks of entrepreneurial firms in virtual space such as Internet Capital Group's network of 70 business-to-business (B2B) e-commerce firms (e.g., CyberCrop.com, e-Chemicals.com, PaperExchange.com), about a dozen traditional firms (e.g., AT&T, IBM, GE Capital Services, DuPont), and several nested incubator networks (e.g., Safeguard Scientifics, eColony) that help startups with a variety of issues including managing and working with venture capital funds (<http://www.internet-capital.com>). We apply the lessons from Branson, Missouri to this broader domain in the discussion section.

## CONCEPTUAL AND THEORETICAL FOUNDATIONS

### CLUSTERING

On observing dense agglomerations of firms in Lancashire's cotton and Sheffield's cutlery industries, Alfred Marshall (1920) coined the term "industrial district." Despite the significant impact of industrial districts on economic activity throughout history and their ubiquity across industries, the study of industrial districts (also called "clusters" or "hot spots") received little attention in the economic literature (Krugman, 1991). In the 1990s, however, the topic attracted renewed scholarly interest, largely as a consequence of Porter's (1990) book *The Competitive Advantage of Nations*, which examined organizational clusters around the globe.

Porter defines clusters as "geographic concentrations of interconnected companies and institutions in a particular field" (1998: 78). Importantly, the focal organizational population and key institutions symbiotically coexist with a number of related and supporting organizational populations. In the US's Silicon Valley, for example, the dominant semiconductor manufacturers are sited near Stanford University, and alongside producers of electronics, instrumentation, computing equipment, and software as well as specialized venture capital and law firms (Saxenian, 1994).

Porter argued that by clustering firms enhance not only their own competitive advantage, but also the competitive advantage of regions and nations. These advantages arise from:

- ◆ High levels of innovation as a consequence of firms pushing each other to continuously upgrade capabilities and improve products and services.

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- ◆ Inter-firm information and resource exchange through dense networks of social, professional, and business relationships.
- ◆ Improvements in shared transportation, communication, and other public infrastructure.
- ◆ Abundant supplies of workers with specialized skills.
- ◆ Reduced consumer search costs.
- ◆ Increased legitimacy (Baum & Haveman, 1997; Krugman, 1991; Porter, 1990; Pouder & St. John, 1996; Saxenien, 1990).

Clustering is a topic that interests practitioners as well as academics, as evidenced by cover stories and special issues of *Business Week* (Foust & Mallory, 1993; Kelly *et al.*, 1992), *The Economist* (1997), and the *Wall Street Journal* (1999). Indeed, public officials, business executives, and entrepreneurs all over the world are attempting to imitate Silicon Valley (Kelly *et al.*, 1992; *The Economist*, 1997; *Wall Street Journal*, 1999). Economic development officials in Australia are benchmarking Huntsville, Alabama's defense and aerospace cluster (Souder, Schoening, & Spann, 1994). Executives at Corning have taken the lead in establishing the "Ceramics Corridor" in upstate New York to accelerate innovation in ceramic materials (Kelly *et al.*, 1992).

But how successful have attempts such as these been? Leading economic geographers report that efforts to engineer the emergence of clusters in the 1980s and 1990s bore meager results (Scott, 1992). These strategic efforts have focused on static "location factors," such as the existence of military bases, universities, venture capital resources, or local market demand that would serve as a catalyst for a cluster; however, such strategies have usually failed because they have done too little, too late in response to the dynamic processes at work (Scott, 1992). Nevertheless, recent theoretical advances help explain both the static factors and the dynamic processes involved in the emergence of clusters.

## COMPLEXITY THEORY

Complexity theory has been used to explain the emergence of order in self-organizing systems such as firms, clusters of firms, and whole economies (Krugman, 1996; Stacey, 1996). Proponents of complexity theory argue that new orders emerge spontaneously from the repeated interaction of numerous events, whether behavioral (e.g., human actions) or material (e.g., technological events), occurring at lower levels within the system. Among the earliest complexity theorists were members of the Austrian school of economics, whose work on spontaneous market order

runs from founding father Carl Menger (1883/1985) to Nobel laureate Friedrich Hayek (1988, 1989).

Modern complexity theory has flourished over the last 35 years or so, with roots principally in evolutionary biology, computer science, information systems, mathematics, and chemistry. It is this “new science of complexity” that has begun to capture the attention of scholars in the behavioral and organizational sciences. Modern complexity theory incorporates a variety of conceptual frameworks, including dissipative structures, chaos theory, NK landscapes, synergetics, autopoiesis, self-organized criticality, cybernetics, fractals, and increasing returns (cf. Lichtenstein, 2000; McKelvey, 1999). In this article we adopt an increasing returns perspective, an approach to economic change based primarily on the work of Brian Arthur (1994, 1996). While strategic management scholars have begun adopting an increasing returns perspective, they have focused mainly on how firms establish their technology as an industry standard; for instance, how Microsoft and Intel established the Wintel personal computing standard (Arthur, 1996; Hill, 1997). Increasing returns can also be used to explain the development of clusters (Arthur, 1994: 49–67), but the perspective has yet to be applied to strategies for fostering their emergence.

Unlike the orthodox perspective, in which markets eventually run into limitations due to diminishing returns and settle predictably into a stable state where numerous firms compete, this new perspective allows for increasing returns. Economists use the term increasing returns to refer to self-reinforcing processes where those that get ahead, whether by strategy or chance, thereby get further ahead, and those that lose advantage become further disadvantaged (Arthur, 1996). Such self-reinforcing processes are driven by positive feedbacks that magnify slight, early advantages for one among a number of competitors, causing it to eventually “lock-in”<sup>1</sup> the market while other competitors are locked out (Arthur, 1994). In such “winner-take-all”<sup>2</sup> markets, history matters a great deal. When it comes to early history, small causes can have large effects—a telltale sign of nonlinear systems. Further, economists contend that the winner may not even offer consumers the best possible alternative (Arthur, 1994).

Proponents of increasing returns argue that to understand clustering fully, both static factors and dynamic processes must be considered. Static factors include the geographic attractiveness of a location in the absence of other firms. Dynamic processes refer to the history of initial decisions by entrepreneurs to select a specific location, as well as the subsequent

decisions of firms to adopt this location in order to gain the benefits of being close to firms that do what they do (Arthur, 1994). The location's geographic attractiveness and the actions of entrepreneurs coevolve, making the location grow more attractive with the passage of time (cf. Krugman, 1995: 46).

A naturally attractive location would be favored by participants in industries that found its climate, beauty, local market demand, and availability and price of land, labor, capital, and transportation ideal for that particular industry's activities. Assuming that entrepreneurs in the industry have similar tastes and preferences, they will choose the same optimal location, and geographic clustering will occur (Arthur, 1994). For example, the motion picture cluster in Hollywood was chosen in part because movie producers had similar tastes and preferences for its good outdoor lighting, dry weather, and wide variety of scenery, coupled with the availability of inexpensive real estate and proximity to Los Angeles' labor market and commercial and transportation infrastructure (Enright, 1990).

However, clusters also arise from historical accidents. The arbitrary location decision of a pioneering firm can attract other firms that recognize the benefits of co-location. As additional firms jump on the bandwagon, momentum builds, and the location becomes locked in as firms adopting this location increasingly rigidify the spatial structure of the industry. That is, the industry locates in one (or a few) places, locking other places out (Arthur, 1994: 51). Further, because an industry's location can be influenced by accidents of history and the time sequence of foundings, it is conceivable that other locations would have in fact proven superior (Arthur, 1994). The tufted carpet and rug cluster in Dalton, Georgia, for example, was unwittingly catalyzed by a teenaged girl who began making tufted bedspreads as gifts for family and friends beginning in 1895. Her efforts spawned a cottage industry in tufted bedspreads, which seeded the tufted carpet and rug cluster in the late 1940s. Between 1951 and 1955, 41 firms jumped on the bandwagon. By 1963, Dalton was firmly locked in with 63 firms producing the bulk of tufted carpets and rugs for the US market (Deaton, 1993).

Further, the strategic location decision by a pioneering firm (or firms) can trigger the same process. Hollywood again provides an example. New York-based Motion Picture Patents Company (MPPC) held all the major projector and camera patents and went to great lengths to prevent infringement, including filing lawsuits against and strong-arming violators. The early motion picture producers who infringed these patents were attracted to the Los Angeles area in part because it was far enough

away from New York to escape running battles with the MPPC and close enough to the Mexican border to permit flight from the jurisdiction of US marshals. In 1909, the first film studio's strategic choice of location quickly attracted additional film studios as well as related and supporting firms to the location, and these, in turn, attracted others. By 1910 15 studios had opened, and by 1914 Hollywood was locked in as the dominant motion picture cluster (Enright, 1990).

In summary, firms establish themselves initially in a location as a result of its attractiveness, or as a consequence of historical accident or strategic action. Increasing returns magnify the original advantage of a particular location, build momentum, and drive that location to become locked in as the nexus of specialized business activities. The presence of the initial concentration of firms attracts additional firms who recognize the benefits of being close to similar and related firms, and this greater concentration of firms, in turn, attracts others (Arthur, 1994).

#### *MACROENTREPRENEURSHIP*

Van de Ven (1993) argued that the type of entrepreneurship required for industry emergence is not the traditional form that emphasizes the isolated behaviors of individual entrepreneurs. Rather, the creation of new industries requires a holistic, interactive, complex systems approach to entrepreneurship, which he described as a “macroperspective of entrepreneurship” (Van de Ven, 1993: 211). Central to this perspective is the recognition that entrepreneurship is the collective achievement of numerous entrepreneurs in public, private, and not-for-profit sectors (Van de Ven, 1993). Such a view is entirely consistent with complexity theory, whose proponents emphasize the importance of both cooperation and competition in the emergence of self-organizing systems (Arthur, 1996; Hench, 1997; Stacey, 1996).

Specifically, these entrepreneurs who “run in packs” (Van de Ven, 1993) are individuals who recognize the necessity of cooperation in order fully to capture the benefits and minimize the costs of clustering. They include collective organization executives, chamber of commerce directors, government administrators, elected officials, university bureaucrats, academics, and entrepreneurs and business executives from all sectors of the cluster. In contrast to traditional entrepreneurs who act in isolation and secrecy to improve the competitive advantage of their firm (i.e., “microentrepreneurs”), we call the participants in these public-private-NFP partnerships “macroentrepreneurs” (Bygrave, 1989) because their collective action, mobilization of resources, and strategies are

directed toward the competitive advantage of all firms in the cluster as well as of the location as a whole (see Astley & Fombrun, 1983).

*A CRUCIAL CAVEAT AND RECONCEPTUALIZATION OF STRATEGIC CHANGE*

At this point, a crucial caveat is in order. Deliberate efforts to intervene during the emergence of self-organizing systems to impose specific desired features are likely to yield suboptimal results (Hayek, 1988). Because no “central controller” can take into account the complexity and detail of all the particular facts nor rapidly adapt to changes in these facts, “deliberate” intervention almost always results in unintended outcomes of lower fitness than would have been obtained were “natural” self-organizing processes allowed to work (Hayek, 1988). It is a mistake to believe that the long-term outcomes of such systems can be planned or predicted (e.g., Hayek, 1988; Juarrero, 1999; Stacey, 1996). These are the realities of managing the emergence of self-organizing systems, especially higher-order ones like clusters. Traditional management by planning and control is inappropriate. A new worldview that reconceptualizes management, strategy, and change is required (Arthur, 1996; Hensch, 1997). Instead, macroentrepreneurs must pursue a form of strategic change that has two unique features.

First, the fact that no central controller is necessary in self-organizing systems does not mean that no management is necessary (Anderson, 1999). The management of self-organizing systems requires indirect interventions where managers attempt to create the conditions under which self-organization can take place (Anderson, 1999; Hayek, 1988). Further, by attempting to “influence the feedback” (Anderson, 1999: 129) that causes complex systems to self-organize, managers can “induce their formation” (Hayek, 1988: 83). Here, the role of management is not as the “engineer” of specific behaviors and outcomes, but as the “steward” of self-organizing processes (Anderson, 1999). In this role, macroentrepreneurs can increase the probability that a cluster will emerge by guiding and influencing its development. What they cannot do is ensure its emergence by planning and controlling its development.

Secondly, the inability to predict the particular path or long-term destination of a self-organizing system does not imply that the future is wholly indeterminate. Self-organizing systems exhibit patterns of behavior that are archetypal (Hayek, 1989; Stacey, 1996). Thus, while macroentrepreneurs will be unable to predict the specific form in which the

archetype will be realized, they can predict how archetypal patterns emerge (Stacey, 1996). That is, they can make only “pattern predictions” (Hayek, 1989: 4). Choi, Dooley, and Rungtusanatham (in press) offer business cycles as a commonplace example of pattern prediction, noting: “even though its exact nature is not predictable, the boom-and-bust characteristic of a ‘business cycle’ is a well-accepted pattern of behavior embedded in the economy.” A related point is that the evolutionary path “chosen” is heavily influenced by the previous history of the system (e.g., Hayek, 1988; Juarrero, 1999; Stacey, 1995). As Mark Twain noted, “history doesn’t repeat itself, but it sometimes rhymes” (Hench, 1997: 662). Thus, while macroentrepreneurs will have to deal with a large element of chance in the emergence of a cluster, the pre-history of the cluster can offer them guidance.

### *RESEARCH SETTING AND METHODS*

#### *BRANSON, MO—A CASE STUDY IN MACROENTREPRENEURSHIP*

Branson, Missouri emerged over more than 100 years to become a leading tourist destination in the US. This small town nestled in the Ozarks of rural Missouri currently attracts about seven million visitors annually. The sheer volume of tourists has earned it the distinction of being the number one motorcoach and number two automobile vacation destination in the country. Visitors come to enjoy an affordable family vacation in the natural beauty of the Ozarks. They come to relax in a small town atmosphere and partake of a slower pace of life. And they come to consume the area’s unique cultural products and services produced primarily by performance theaters, all of which exhibit a very high level of consistency in terms of style of entertainment<sup>3</sup> and adherence to local values (Howard, 1997). The theaters coexist symbiotically alongside a host of interrelated companies including shops, hotels and motels, restaurants, and amusements such as theme parks. Because country has been the music of choice in most theaters, this cluster has been labeled the “Broadway of country music.”

The fact that the Branson cluster was not established entirely, or even mostly, through an overall plan does not make it a “bad” case to sample for the type of strategic management of change we wish to explore here. In fact, it provides a typical case in which historical accidents, strategic actions, and concerted attempts to guide the process commingle over time. It can help us understand not only the process, but critical points where leverage could be applied by macroentrepreneurs to more fully

unleash the power of increasing returns (even though it may not be), helping entrepreneurs profit even more from serendipity or their own strategic actions.

Data for this article come from 38 interviews, extensive documentary evidence, survey responses, and direct observations made during multiple visits to Branson over a 10-month period in 1995 and 1996.<sup>4</sup> We also conducted follow-up studies in 1997 and 2000 to get “member checks” of our findings and interpretations. We used case-study methods to analyze the data, taking an iterative approach in which we moved back and forth between data, extant literature, and emerging theory (Glaser & Strauss, 1967). To facilitate this effort, we coded the qualitative data and developed data displays as recommended by Miles and Huberman (1994). We also analyzed quantitative data using Poisson and negative binomial regression.

These methods, data displays, quantitative results, and theoretical findings are reported elsewhere (Chiles & Meyer, 2000). Our goal in this article is to draw on these data and analyses to provide practical, yet theoretically grounded, advice on how to manage the emergence of clusters. In the next section, we argue that the process through which clusters of organizations grow, lock in, and decline can be characterized by three sequential stages, and we draw on our study of Branson to illustrate the role of macroentrepreneurs in this process.

## *A THREE-STAGE MODEL OF MACROENTREPRENEURSHIP*

### *OVERVIEW OF THE MODEL*

Based on our analysis of the evidence, we found that the process of managing the emergence of clusters in an increasing returns world was best described in three broad, potentially overlapping, phases: pre-history; origination and lock-in; and maturity. Figure 1 provides summaries of the strategies available to macroentrepreneurs in each stage.

The first two phases are both characterized by a coevolutionary interplay among accidents of history, the strategic actions of individuals, the concerted efforts of macroentrepreneurs, and the location’s natural attractiveness and unique history and culture. Both are periods during which macroentrepreneurs attempt to exploit the benefits of clustering. However, for the purpose of this article, their differences come into play as a function of where in the course of the self-organizing process a would-be macroentrepreneur seeks to intervene.

If the location currently is or recently was a “featureless plane,”<sup>5</sup> then pre-history strategies represent the most appropriate starting point.

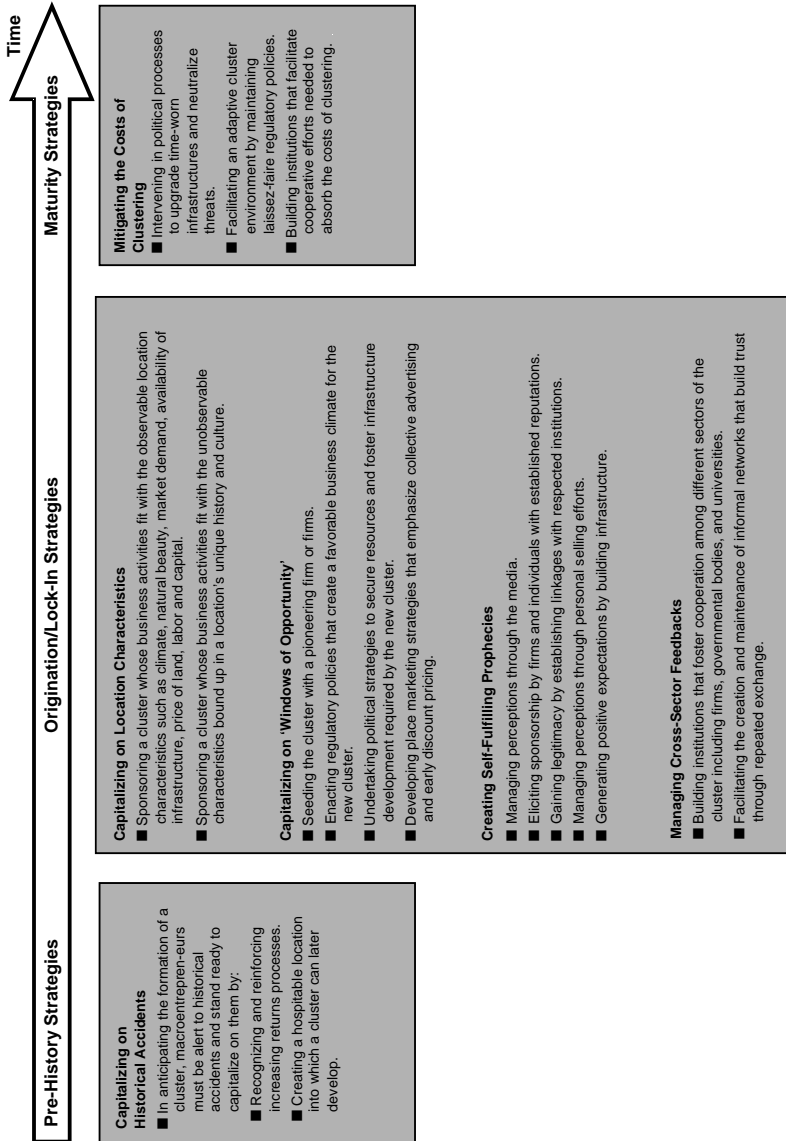


Figure 1 Strategies for managing the emergence of clusters

Here, macroentrepreneurs must be ready to capitalize on chance events to set the stage for an emergent cluster. They can attempt to influence increasing returns processes by building institutions that foster collective efforts, by intervening in political-legal processes to ensure the develop-

ment of a supportive infrastructure, and/or by creating a hospitable business environment into which a cluster can later emerge through the enactment of unique location-specific or liberal regulatory policies.

If the location has evolved for some time, then origination/lock-in strategies are the logical point of departure. In this phase, macroentrepreneurs need to sponsor or encourage a cluster whose business activities fit with the observable and unobservable location characteristics of a region. Further, they must jump start increasing returns processes that develop momentum and lock in a location. Or, if such processes have already been initiated, they must stand ready to capitalize on them. Specifically, they must move quickly to seed the nascent cluster with pioneering firms, enact advantageous governmental regulations, undertake political initiatives to secure needed resources and infrastructure, advertise in order to educate potential customers and entrepreneurs, use aggressive pricing strategies to attract entrepreneurs, create self-fulfilling prophecies, and build institutions that facilitate cooperation.

Eventually, the costs of clustering may outweigh the benefits as congestion increases, infrastructure wears, pessimism rises, and innovation wanes. In the final phase, macroentrepreneurs must anticipate problems such as the costs of time-worn infrastructures and polluted environments, and devise approaches to reduce them. They also need to maintain a regulatory environment that is conducive to firm innovation, upgrading, and responsiveness.

### *THE PRE-HISTORY PHASE: CAPITALIZING ON HISTORICAL ACCIDENTS*

In anticipating the formation of a cluster, macroentrepreneurs must be alert to historical accidents and stand ready to capitalize on them by influencing the increasing returns process.

*In 1896, a minister named Harold Bell Wright was unable to cross the flooded White River at Branson, Missouri. He sought shelter with a local couple who took him in. Taken by their friendliness and the natural beauty of the area, he returned during many subsequent summers and penned a novel whose story was set in the region, interwoven with its cultural idiosyncrasies, and crafted with thinly disguised portraits of its inhabitants. Published in 1907, the novel became a national bestseller and brought the first wave of tourists who sought the people and places described within its covers. Fortuitously, the completion of a passenger railroad service in 1906*

*provided tourists with access to this geographically isolated region. Shortly thereafter, work was begun on a dam across the White River. Its completion in 1913 formed Lake Taneycomo, which brought even more tourists.*

*The tourists generated by these accidents led to the founding of numerous entrepreneurial ventures that sought to profit from serendipity by meeting the needs of tourists. These tourist businesses, in turn, generated even more tourists. Furthermore, new and better roads coevolved with the increased tourism and tourism-related businesses. In this way, accidents of history occurring at roughly the same time set in motion a cascade of self-reinforcing events that gathered momentum, locked in Branson as a tourist destination, and created a fertile market niche in which the theater population would later take root.*

*On a number of occasions, macroentrepreneurs capitalized on these historical accidents by making concerted efforts to influence feedbacks and add fuel to the increasing returns process underway. First, two booster organizations started pooling members' money and investing it in collective advertising programs to attract tourists, both beginning shortly after Lake Taneycomo was impounded. One local observer recognized that these organizations contributed to an increasing returns process "whereby development begets promotion and additional promotion leads to further development" (Rafferty, 1980: 210).*

*Secondly, one of these booster organizations joined forces with another such organization to petition their congressman in 1933 to sponsor their cooperative efforts to make another dam on the White River near Branson a reality. The congressman bulldogged this "Table Rock" project through his tenure of over 20 years. As early as 1952, funds were appropriated for the construction of Table Rock Dam, which in turn sparked a flurry of entrepreneurial effort in anticipation of the dam's completion and the tourists it would attract. It was in this flurry of business venturing that the performance theater population would have its first tangible genesis.*

*Thirdly, a local chamber of commerce was formed immediately after the Second World War and began pooling members' contributions for the purpose of collective advertising targeted at tourists.*

Macroentrepreneurs must also stand ready to capitalize on historical accidents by creating a hospitable location into which a cluster can later emerge.

*Branson's founding fathers created a hospitable location for businesses by adopting laissez-faire government policies. And they instituted morality*

*ordinances that prohibited not only saloons, but also gambling, horse racing, cock fighting, card playing, and square dancing. While these value-laden rules were inhospitable to some organizations, they granted others legitimacy and a hospitable environment in which to flourish.*

*THE ORIGINATION/LOCK-IN PHASE: CAPITALIZING ON  
LOCATION CHARACTERISTICS*

A desirable location is distinguished by characteristics such as natural beauty, attractive climate, large local demand, inexpensive labor, or superior access to transportation. For macroentrepreneurs interested in establishing a cluster, it pays to sponsor one whose particular business activities fit the location's unique characteristics. The poorer the fit, the greater the risk of failure, the longer the time horizon for success, and the greater the likelihood that "massive, concerted, and extremely expensive action by central government authorities" will be required (Scott, 1992: 65).

*The most important observable location characteristic for theater entrepreneurs was strong local tourist demand. Indeed, Branson had benefited from a long history and solid reputation as a tourist destination since the turn of the century. Beginning about the time of Table Rock's construction phase from 1954 to 1959, however, tourists had virtually nothing to do at night for entertainment. It was this "crack in the market" that theater entrepreneurs exploited.*

Because most observable location characteristics coevolve with entrepreneurial action as noted earlier (and hence can be improved with time), it is even more important for macroentrepreneurs to look beneath the surface to unobservable characteristics bound up in a location's unique history (which is unchangeable) and culture (which changes very slowly).<sup>6</sup>

*Theaters adopted performance practices that reflected to a remarkable degree the widely shared values, or local culture, in Branson. These shared values included Protestant Christian, traditional family, and American nationalistic values as well as a country aesthetic and nostalgic vision of the "good old days" (Howard, 1997).*

*Furthermore, the theaters were small business ventures, often family run. This organizing mode was an ideal fit with an area "steeped in laissez-faire, entrepreneurship and individual rights," as described by one informant.*

Conversely, a lack of fit between the unobservable characteristics of a location and the organizational activity of a cluster can thwart its establishment.

*Several informants commented that failure would have been extremely likely for a Las Vegas-style cluster focusing on adult entertainment such as gambling, nude dancing, or blue humor. This conjecture was at least partially based on knowledge that performers who actually broke the unwritten rules of the local culture were sanctioned and had to change their ways or else leave town.*

We caution against viewing the role of culture and its fit with the activities of a cluster as important only in “cultural industries” such as Branson, Las Vegas, and Hollywood. It is a powerful force in many other types of clusters, including high-technology ones such as Silicon Valley (*The Economist*, 1997: 7) and Utah’s software cluster (Kelley *et al.*, 1992: 84).

#### CAPITALIZING ON “WINDOWS OF OPPORTUNITY”

In an increasing returns environment, it pays to be a first mover (Arthur, 1994). Efforts to lock in a location can have profound impact if they are undertaken during a brief window of opportunity early in the process. In a strong increasing returns environment, the window closes when the first mover has a head start and enough momentum to lock in the market. Late entrants (i.e., other locations or other competing organizational forms in the same location) may never be given a chance to develop (Arthur, 1994).<sup>7</sup>

The risks are considerable in either case: The first mover must correctly identify new opportunities before they are proven, and the late imitator risks being locked out of the market. The returns from a successful new cluster are, however, substantial. To realize them, the collective efforts of macroentrepreneurs are usually needed to amass sufficient resources and achieve sufficient strategic scope. Four strategies for opening or responding to the opening of windows of opportunity are central: strategic seeding, regulatory policy, political strategy, and place marketing.

Before we describe each strategy in greater detail, we need to address an important point. A number of distinct windows of opportunity are likely to open as the origination/lock-in phase unfolds. Above, we have emphasized the first window, the one marking a transition from the pre-history phase to the origination/lock-in phase. This first transition is arguably the most important, because failure to get through it renders

moot any discussion of subsequent windows. However, for clusters that make it through the first window, other windows will likely appear over time. Passage through any window results in an important qualitative transformation of the cluster; so macroentrepreneurs need to anticipate not just one, but multiple windows.

Our previous work using a dissipative structure perspective of complexity theory explores these issues in detail (Chiles & Meyer, 2000). In brief, we found that the Branson origination/lock-in phase included three distinct eras. First, spanning the years 1955 to 1982, Era #1 was characterized by pioneering local theaters; this era was initiated by events during Window #1 from the mid-1950s to the late-1960s. Secondly, spanning 1983 to 1990, Era #2 was characterized by country music celebrity theaters; this era was initiated by events during Window #2 in the early 1980s. Finally, spanning 1991 to 1995, Era #3 was characterized by popular music celebrity theaters; this final era of our study was initiated by events during Window #3 in the early 1990s. In the accounts below, we distinguish evidence according to the appropriate window and era.

First, strategic seeding of a location with a pioneering firm or firms can jump start the increasing returns process that creates clusters (Rauch, 1993).

*Window/Era #1. The theater that inaugurated the cluster in Branson was seeded in 1955 by the collective action and combined resources of the chamber of commerce, city government, influential local citizens, local businesses, and a college. Then a few more theaters started springing up in the late 1950s and 1960s. This set in motion an increasing returns process that attracted other theaters who, in turn, attracted others.*

Secondly, an environment that embraces the unique character of a new cluster and permits its relatively unhampered expression is ideal for helping the cluster take root and flourish (Astley, 1985; Hayek, 1988). This environment is shaped in part by a location's business climate, which depends, in turn, on local regulatory policies (Hayek, 1988). These governmental policies can be changed administratively by incumbent officials or shaped by macroentrepreneurs intervening in the regulatory process.

*Window/Era #1 and #2. Local regulatory policies in the Ozark tradition of laissez-faire were cited by several theater owners as critical, especially early on, to providing a hospitable environment for the emerging theater population. As one pioneer put it: "Lack of regulation made it easy to found a busi-*

*ness here. There was nobody to answer to. No building permits. No fire codes. No requirements for breaks, signs or number of parking spaces. This made it easier and cheaper. This was a significant factor for early theaters.”*

Thirdly, when the window of opportunity for seeding a cluster opens, well-timed political initiatives are often necessary to secure crucial resources that can, in turn, have a profound influence on increasing returns processes.

**Window/Era #1.** *Political maneuvering in the legislative process by Branson’s congressman continued into the origination/lock-in phase and ensured that Table Rock Dam would become a reality, sustaining growth and drawing the second major wave of tourists to the region.*

Given its importance in the location and timing of emerging industries (Chandler, 1977), transportation infrastructure is also a prime target for political action during windows of opportunity.

**Window/Era #1.** *Transportation infrastructure was of paramount importance in Branson, as one informant explained: “Transportation is as big an issue as it gets. If you don’t have it, you can’t make it work.” During the early years of the origination/lock-in phase, Branson’s main transportation artery underwent a dramatic reconstruction that made the location more accessible than ever to motoring tourists. In the words of one informant, “It helped open things up a lot.” This was especially critical given that passenger railroad access had been discontinued the year before highway reconstruction commenced.*

*While infrastructure development during windows of opportunity represents a powerful leverage point for macroentrepreneurs,<sup>8</sup> our evidence did not confirm the role of collective action in lobbying for reconstruction of this highway.*

Finally, macroentrepreneurs seeking to capitalize on windows of opportunity can pursue what Kotler, Haider, and Rein (1993) call place marketing strategy. To jump start an increasing returns process or to influence the feedback of one already underway, this strategy disseminates information about opportunities in the cluster to attract additional customers and entrepreneurs to the location. An important component of this strategy may be heavy early discounting to build a loyal customer base (Rauch, 1993). Like other strategies based on increasing returns, place marketing

strategies usually require collective action and a willingness to sacrifice short-term profits for long-term competitive advantage (Arthur, 1996).

*Window/Era #1 and #2.* While macroentrepreneurs in Branson did not engage in heavy early discounting of land (for example) to attract entrepreneurs as industrial parks have been known to do (cf. Rauch, 1993), the early theaters did strategically keep ticket prices low to make their entertainment affordable for vacationing families. This helped facilitate a circular process that Branson theaters relied on heavily, repeat visits.

*Window/Era #2 and #3.* Macroentrepreneurs were, however, heavily involved in stepping up campaigns to advertise Branson's tourist attractions through collective marketing organizations.

#### CREATING SELF-FULFILLING PROPHECIES

Thus far, we have emphasized the role of concrete actions and historical events in initiating increasing returns processes that take over to drive the market to lock in a location. However, subjective expectations and beliefs about the future can also play a role in increasing returns environments. If macroentrepreneurs can create confidence in a location, thereby convincing people that it will one day become the best destination, then a critical mass (of firms, customers, and infrastructure) can be drawn to the location and the belief will become a self-fulfilling prophecy (Krugman, 1991). At work is a positive psychological contagion that begins as macroentrepreneurs form collective understandings that spell out the social and economic purposes of the cluster they envision, and persists as these cognitions become widely shared, assume the aura of concrete reality, and feed self-reinforcing behavior. Furthermore, proponents of rival locations may defer if they believe that the market will be locked in at another location (Arthur, 1996). Where history, actions, and expectations operate concurrently, the probability of a location becoming locked in is further increased (Arthur, 1988).

Juarrero's (1999) discussion of narration and causation also informs our understanding of self-fulfilling prophecy by linking the behavior and mindsets of individual agents to the broader social and psychological context in which complex adaptive systems are embedded. Specifically, she argues that understanding the evolution of a complex adaptive system requires the recognition that an individual's behavior flows from their state of mind, and that their mindset and behavior (recursively) interact with the broader social and psychological context.

An article in *The Economist* provides insight into the role of self-fulfilling prophecy in the Branson cluster:

**Window/Era #3.** “[O]n December 9th 1991 . . . ‘60 Minutes’ referred to Branson as the country-music capital of the universe. It was not true, of course; the title . . . probably belonged to Nashville. But because promoters and tour-bookers thought it might be true . . . they could overlook Branson no longer. And, besides, their telephones started ringing. The hype rapidly fulfilled itself. Today Branson receives around 10,000 tours a year” (*Economist*, 1995: 25).

Understanding how to construct shared beliefs about reality, shape expectations, and create self-fulfilling prophecies is of great importance in macroentrepreneurship, especially during windows of opportunity.<sup>9</sup> A key to this process is the ability to affect particular people’s expectations or perceptions—especially customers, government officials, the general public, members of the financial and accounting community, and members of the press (Hybels, 1995). This requires macroentrepreneurs to engage in image making through the stories they tell and the associations they create, leading stakeholders to perceive a cluster’s activities as legitimate. Successful attempts to influence such stakeholders’ expectations and perceptions improve the flow of financial, human, physical, and informational resources to the cluster. Ultimately, this flow of resources translates into real dollars for cluster participants.

Several strategies for managing legitimacy and fueling the fire of self-fulfilling prophecy are particularly relevant for macroentrepreneurs. First, the public’s perception of a cluster can be shaped through the media to enhance its legitimacy. This can be achieved through news stories and features, popular movies, shows, books, and advertising. News stories and features represent the most credible sources (Kotler, Haider, & Rein, 1993). As one of the central legitimizing forces in society, the press can bestow legitimacy on a cluster through positive coverage (Hybels, 1995).

**Window/Era #1 and #3.** *In addition to the novel discussed previously, media exposure has brought the Branson area positive publicity and popularity for many years. Two events during the origination/lock-in phase are especially noteworthy: Five episodes of The Beverly Hillbillies were shot on location in Branson in 1969; two segments about Branson were aired on 60 Minutes, one in 1991 and the other in 1992. Both sets of events occurred during windows of opportunity and provided additional*

momentum to the increasing returns process at work in the emergence of the theater population. Macroentrepreneurs were responsible for neither of these; however, the positive impact of the 60 Minutes shows caused them to take notice of the power of national television media. Immediately thereafter, macroentrepreneurs began to strategically cultivate the national media, widely advertise its image, and skillfully popularize its performance theaters as a legitimate cultural formulation.

Second, the established reputation of firms or individuals can be leveraged to enhance the image of the cluster in the eyes of key stakeholders and increase the cluster's legitimacy (Suchman, 1995). If macroentrepreneurs do this early on, they may set the tone of the increasing returns process as well as benefit from free advertising (Rauch, 1993).

*Window/Era #2.* Roy Clark of Hee-Haw television show and Grand Ole Opry fame opened his theater in Branson in 1983. Clark's arrival initiated an increasing returns process best described as a country music celebrity bandwagon. His theater acted as a spawning ground for spinoffs by guest stars who saw the opportunities available in Branson during their limited engagements. Increasing returns were operating in processes involving the power of celebrity in which well-known entertainers who founded theaters in Branson would attract other well-known entertainers, some of whom would also found theaters, and these in turn would attract others. Among the stars to jump on the bandwagon were Mel Tillis, Willie Nelson, Loretta Lynn, Glen Campbell, and Charlie Pride.

*Window/Era #3.* Branson's most famous theater owner/performer, Andy Williams, joined the celebrity bandwagon in 1992. The arrival of this popular music icon broke the "mindset" of Branson as strictly a country music venue, setting an example for other popular music celebrities to emulate. Among the stars to jump on the popular music celebrity bandwagon were Tony Orlando, Bobby Vinton, Wayne Newton, John Davidson, and The Osmonds. Branson offered these seasoned performers a respite from the tedium and rootlessness of years of touring, a chance firmly to reconnect with family, community, and old friends they had made throughout their career, a venue that extended their careers long beyond the natural course, and plenty of artistic freedom.

While macroentrepreneurs can play a role in attracting firms and individuals with established reputations to a cluster, this was not done explicitly in the case of Branson. However, it is noteworthy that Window #2 was characterized by entrepreneurs acting in macroentrepreneurial ways. In

*particular, Roy Clark partnered with a local entrepreneur who recognized that celebrities at that time had a mindset that was obstructing the increasing returns process, and he attempted to change this. He explained: “Big name stars had a mindset of being on the road. They didn’t realize that the market would come to you and turn over every few days ... They’re in the habit of going town to town. Branson is different, but they didn’t see this at first.” Eventually, he said, “I encouraged stars to start their own theaters. I want to create a market, strengthen a market. It was an attitude—come on, let’s get this thing and build.”*

Thirdly, establishing links with respected institutions and/or other reputable parties can enhance perceptions, confer legitimacy to the cluster, and fuel a self-fulfilling prophecy (Aldrich & Fiol, 1994).

*Window/Era #1. Local theaters legitimized themselves by associating their performance with Ozark traditions and country music (Howard, 1997). Such legitimation was largely unconscious, and macroentrepreneurs further did little to link Branson strategically with society’s larger institutions or respected parties.*

*Window/Era #2. The presence of country music celebrities linked Branson’s entertainment with “larger institutions such as the country music industry, the film industry and the Opry” (Howard, 1997: 101). Macroentrepreneurs capitalized on the cluster’s country music stars in their collective marketing message: “If you like country music in the city, you’ll love country music in the country—Ozark Mountain Country<sup>10</sup>” (Sylvester & Hansen, 1990: Oz1086).*

*Window/Era #3. Macroentrepreneurs strategically linked Branson’s most respected resident celebrities such as Charlie Pride, Bobby Vinton, and Andy Williams as well as guest celebrities such as the Radio City Music Hall’s Rockettes in their collective marketing messages. In addition, macroentrepreneurs established a partnership with General Motors Corporation in an elaborate joint promotion and advertising campaign called “GM’s Country Days in Branson,” designed to “vastly expand Branson’s ability to get into the hearts and minds of America” (Ozark Marketing Council, 1995).*

Fourthly, the perception of a cluster can be managed through personal selling efforts that disseminate the image of a place and enhance its legitimacy (Kotler, Haider, & Rein, 1993).

*Window/Era #1 and #2.* Many fledgling theaters adopted the practice of touring in the off-season within the primary geographic markets from which they drew customers. These road shows sustained and built a theater's customer base, and helped to market the location by plugging all the theaters and attractions in the area.

*Window/Era #2.* Appearances on the Grand Ole Opry by Branson celebrities such as Boxcar Willie always included efforts to sell the audience on the virtues of Branson.

*Window/Era #3.* While macroentrepreneurs could certainly play a role in facilitating personal selling efforts such as the two described above, they did not do so in Branson. However, during the third era of the origination/lock-in phase, macroentrepreneurs did facilitate the on-site shooting of popular television talk shows such as Live with Regis and Kathie Lee, on which Branson theater owners/performers could engage in personal selling efforts.

Finally, building new infrastructure can bolster participants' expectations about a cluster's future promise, initiating a self-fulfilling prophecy.

*Window/Era #1.* In the mid-to-late 1950s, existing entrepreneurs in Branson expanded and upgraded their tourism businesses and potential entrepreneurs started new businesses, among them pioneering theaters. These efforts were undertaken in large measure because of entrepreneurs' positive expectations that Table Rock Dam would open the floodgates to Branson's second major wave of tourists on its completion in 1959.

#### MANAGING CROSS-SECTOR FEEDBACKS

Clusters are comprised of many related and supporting companies, governmental bodies, NFP organizations, and universities, which together represent an important source of competitive advantage for firms and locations (Porter, 1990). Firms located in such communities may draw on networks of specialists that are decentralized, flexible, fast, and focused (Saxenian, 1990). Mutually reinforcing feedback loops connect the different sectors of the cluster, giving rise to mutually interdependent growth and demand; reciprocal innovation and upgrading of resources; multi-directional flows of information; and mutually beneficial collaboration and joint problem solving (*Economist*, 1995; Porter, 1990; Poudier & St. John, 1996; Saxenian, 1990). To improve the odds of locking in a location, macroentrepreneurs can amplify these cross-sector positive feedbacks by

building institutions that foster cooperation across sectors within the cluster.

*Window/Era #2 and #3.* Macroentrepreneurs in Branson had long established institutions to foster cooperative effort, as we discussed during the pre-history phase. In the early 1980s, the most influential of these institutions—the Ozark Marketing Council—was formed. It served as the focal point for collective action, mobilization of resources, and strategies among a broad spectrum of business interests in Branson.

*Window/Era #3.* In the early 1990s, cross-sector cooperation was also evident in the joint formulation of tourism tax policies by city officials and chamber of commerce executives.

Macroentrepreneurs can facilitate the creation and maintenance of informal institutions that foster relationships and build trust through repeated exchange. Indeed, trust serves not only as a source of social contagion and increasing returns, but also as a sort of glue that binds together the web of complex relationships among organizations, allowing the cluster to function more effectively (Kretschmer, Klimis, & Choi, 1999: S68; see also Aldrich & Fiol, 1994).

*Window/Era #2 and #3.* In Branson golf leagues, charity events, and award ceremonies provided a means for regularly gathering key people from a number of sectors in a social setting. While macroentrepreneurs could play a role in facilitating informal institutions such as these, they did not do so in Branson.

## THE MATURITY PHASE

Clustering provides firms and locations with important benefits that increase competitive advantage, but it also imposes costs. These costs result from increased congestion; higher land and housing prices; heavier tax burdens; more heavily stressed infrastructure; reduced innovation as firms imitate each other and adopt similar mindsets; sluggishness in responding to environmental shifts as a consequence of insularity; complacency about non-cluster competitors arising from parochialism; and other external costs, such as degradation of the natural environment or housing costs that cap the supply of entry-level employees (Abrahamson & Fombrun, 1994; Kotler, Haider, & Rein, 1993; Krugman, 1995; Porter, 1990; Pouder & St. John, 1996).

The decline brought on by the costs of clustering can be either gradual or precipitous. Over decades, the costs can diminish a cluster's growth and innovation, while allowing it to persist as a tight collection of firms; the tufted carpet cluster in Dalton, Georgia is a good example (Pouder & St. John, 1996). Alternatively, the costs can trigger a sudden spiral of decline that becomes impossible to control and leads to the collapse of a population (Porter, 1990). This was the fate of the tire manufacturing cluster in Akron, Ohio in the 1940s. This process of rapid decline can be triggered by historical events such as the departure of a number of key firms from the cluster, or by shared cognitions such as a growing pessimism about the future prospects of a cluster or location (Krugman, 1991).

#### *MITIGATING THE COSTS OF CLUSTERING*

Macroentrepreneurs who have overcome the odds of establishing new clusters should understand three important points. First, they must be aware of both the costs related to clustering and the processes of decline to which clusters are subject. Secondly, they must realize that the costs of clustering can set in early in the emergence process, long before the cluster becomes mature, as evidenced by a decline in product demand or in the population of member firms. For this reason, macroentrepreneurs must often manage the costs of clustering at the same time they are attempting to lock in the cluster. Thirdly, they must be aware that they can play an important role in mitigating these costs, and that a number of strategies are available to guide these efforts.

Macroentrepreneurs can intervene in political processes to decrease clustering costs.

*Window/Era #3. To alleviate the severe traffic that threatened Branson's growth, political maneuvering and lobbying of government transportation agencies resulted in the construction of alternative intra-city routes and lane expansions as well as fast-track approval from the state for a loop around the city. Additionally, by lobbying for a change in state law, macroentrepreneurs in Branson were able to put tourism taxes to a local vote in 1993. After the measure was approved, most of the proceeds were channeled into much needed infrastructure improvements.*

*Window/Era #3. Furthermore, the growth and popularity of Branson eventually caused music licensing associations (e.g., American Society of Composers, Authors, and Publishers) to seek royalties for music performed*

*in the theaters and played in the background in hotel lobbies and restaurants. Taking issue with the manner of collection and allegedly unfair assessment methods by ASCAP, participants from all sectors of the Branson cluster organized and participated in the political-legal process. Specifically, macroentrepreneurs hosted campaign fundraisers for and threw their support behind the state's attorney general who had been sparing with ASCAP in the courts.*

Reduced innovation, responsiveness, and alertness that result from parochialism and insularity can be minimized by implementing strategies that continually disrupt the status quo (D'Aveni, 1995). Such strategies help sustain high levels of cluster innovation and responsiveness to environmental jolts (Porter, 1990). Macroentrepreneurs can facilitate such an adaptive cluster environment by promoting *laissez-faire* regulatory policies.

**Window/Era #1, #2 and #3.** *Continual activity in the Branson cluster occurred because there was persistent changing and upgrading of theater buildings and arrangements; continual job hopping by "second-billing" performers, supporting musicians, and technicians; a constant flow of high-quality guest entertainers like Bill Cosby and The Oak Ridge Boys; and an ebb and flow of high-quality performers who establish theaters, entertain for a few years, move on, and make room for others. Macroentrepreneurs facilitated this type of environment by ensuring the maintenance of local laissez-faire regulatory policies. Commenting on a number of such policies, one city official concluded by saying: "We're very attractive to businesses, very pro-business."*

Finally, institution building can reduce the costs of clustering by mobilizing collective action across sectors in the cluster. No new institutions were built in Branson for this express purpose. However, as previous examples illustrate, existing institutions were used by macroentrepreneurs to reduce the cost of clustering; the majority of these efforts focused on the upgrading of infrastructure. Examples of building new institutions to reduce the costs of clustering can be found in locations as varied as Niagara Falls (Ingram & Inman, 1996) and Silicon Valley (*The Economist*, 1997).

Donald Hambrick, past president of the Academy of Management, has offered a sobering reflection on the field of strategic management: “Until our assumptions square with reality, we have little chance to influence managerial practice” (1990: 251). This article has sought to close this gap by combining complexity theory and clustering, and demonstrating how these ideas elucidate the process of collective entrepreneurship. We have used the term macroentrepreneurship to characterize this process, and suggested how it can facilitate the emergence of new clusters and industries. This perspective requires a complex systems view and the recognition that entrepreneurship is the collective achievement of numerous individual and collective actors.

We have proposed specific strategies for managing the emergence of clusters. We organize these change strategies in a three-stage model based on a case history of the emergence of Branson, Missouri’s entertainment cluster, and a branch of complexity theory focusing on increasing returns. Adopting an increasing returns perspective for managing the emergence of clusters squares better with the empirical record than do received theories that assume decreasing returns (see Arthur, 1996; Hench, 1997; Stevenson & Harmeling, 1990).

This article seeks to contribute to the theory and practice of large-scale, strategic change. It is among a small but growing number of studies that employ complexity theory to examine organizational change processes. It is one of an even smaller set of studies (see, e.g., Anderson, 1999; Arthur, 1996; MacIntosh & MacLean, 1999) that advises managers bent on intervening in self-organizing systems.

Many of the prescriptions for strategic change that we have deduced from the increasing returns approach may seem intuitive. However, both our field research<sup>11</sup> and the literature (Arthur, 1996; Hench, 1997; Stacey, 1995) suggest that very few people—be they practitioners or academics—truly understand how and why things work the way they do in an increasing returns world. This should come as no surprise, given that the dominant paradigms in economics (see Arthur, 1996) and organization science (see Stacey, 1995) are based on a view of the world where decreasing returns or negative feedback processes drive systems to a predictable equilibrium.

Because many segments of the economy are characterized predominantly by increasing returns or positive feedback processes that drive systems to unpredictable, but stable disequilibrium states, “success will

strongly favor those who understand this new way of thinking” (Arthur, 1996: 109). As Hamel reminds us, “There can be no innovation in the creation of strategy without a change in perspective” (1996: 80). Indeed, those who adopt the increasing returns perspective will have at their disposal a very different way of understanding how to manage emergent organizational phenomena strategically.

The lessons from this study can be applied in a variety of organizational contexts beyond clusters. Industrial parks are a common but understudied organizational form (cf. Rauch, 1993) created by governmental and private organizations for the purpose of economic development in a given location. Such parks are a “close cousin” of organizational clusters. Both are self-organizing systems comprised of organizations in close physical proximity, although parks are more geographically contained. Interestingly, industrial parks have been known to form the nucleus around which clusters emerge. Such was the case with Stanford Industrial Park and the cluster of high-tech firms that came to be known as Silicon Valley (Saxenian, 1994).

New urban initiatives such as revitalized city centers, edge cities, enterprise zones, business incubators, heritage centers, and designer spaces (e.g., Baltimore’s inner harbor waterfront development) represent similar contexts (Hall & Hubbard, 1998).

While translation of the lessons from this article is straightforward for industrial parks and new urban forms, it may be less obvious that these lessons can be extended beyond an ecology of organizations in close physical proximity to a far-flung network of organizations in virtual space. This extension is harder to envision, because as scholars trained in the dominant paradigm of organizational ecology, we tend to think of ecologies of organizations as biologists think of ecologies of organisms—as cohabiting in some region (Roughgarden, 1979: 295). However, the key to extending our findings beyond co-located organizations may be to recognize that “Ecology is networks ... to understand ecosystems ultimately will be to understand networks” (Patten, 1991, as quoted in Capra, 1996: 35). Other authors have gone on to suggest that to understand networks is to understand self-organization (e.g., Capra, 1996; Stacey, 1995, 1996; Stevenson & Harmeling, 1990).

Internet Capital Group (ICG) provides a fascinating context where entrepreneurs are putting into practice many of the strategies discussed in this article, not to create a cluster, but rather to build a global network of firms in virtual space. ICG is an internet holding-company that:

- ◆ Identifies and acquires a stake in B2B e-commerce companies, including investments in incubator networks that help startups overcome obstacles like securing venture capital.
- ◆ Integrates them into its collaborative network of partner companies.
- ◆ Develops them by offering strategic guidance, providing operational support, fostering information flow, and sharing knowledge, resources, and experience.
- ◆ Accelerates their growth by providing technological, financial, and logistical infrastructure support (<http://www.internetcapital.com>).

Table 1 provides specific examples of ICG's increasing returns approach to strategic change.

*Table 1 Internet Capital Group's increasing returns approach to strategic change (<http://www.internetcapital.com>)*

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#### **Managing lock-in processes**

ICG recognizes that its partner companies operate in "winner-take-most" markets; that is, markets subject to increasing returns. Accordingly, its strategy is to invest in the "dominant player" in a fragmented market and then help them "out-distance the number two and three players." By capitalizing on this "first-mover advantage" and then "accelerating" the partner company's growth through the services and infrastructure support it provides, ICG helps the partner company "quickly" achieve the "momentum and critical mass" necessary to attain a "market leadership" position.

#### **Adopting a long-term perspective**

ICG recognizes that establishing market dominance will take years, even decades. "We're in this race to win it, even though victory may not be declared for 10, 15, or 20 years. We're long-term partners with an equally long-term perspective."

#### **Offering advice, guidance and support**

As the "hub of the network," ICG takes an "active role" in providing partner companies with "advice" as well as "strategic guidance and operational support" in a variety of areas, including sales and marketing, human resources, information technology, business development, and finance. For example, ICG helps partner companies secure financial capital through its preferred partner GE Capital Services, or in some cases through preferred partner Safeguard Scientific, which helps partner companies manage and work with venture capital funds.

#### **Creating hospitable environments**

ICG formed eColony, an "incubator network" that will help rapidly grow B2B internet startups previously too small for an ICG partnership. This provides startups with physical infrastructure (in effect a technology park), financial capital, technological support, management and legal assistance, and access to its network of business relationships. By "creating an environment" in which young companies can develop ideas into businesses, ICG hopes to have a "tremendous impact on their 'first-to-market' ability," one day bringing them into the ICG network.

### **Managing feedbacks across the network**

ICG promotes "cross-pollination" and "learning" within its network by fostering "frequent informal dialogue among partner companies," bringing chief executive officers together quarterly, as well as chief financial and chief technology officers twice a year, to share best practices and build alliances. In addition, ICG's management team and advisory board "freely share [their] knowledge, resources, and experience wherever they are needed [within the network]."

### **Serving as stewards of self-organizing processes**

ICG joined a group of industry leaders to "accelerate" the adoption of UDDI specifications, a move designed "to help steward the evolution" of an industry standard that would benefit its partner companies.

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## *CONCLUSION*

Macroentrepreneurs live in a world where increasing returns hold powerful sway. Accordingly, their approach to management must depart from conventional wisdom based on decreasing returns to scale. Instead of engineering outcomes, they must become stewards of self-organizing processes (Anderson, 1999). Instead of predicting specific behaviors and outcomes, they must be content to predict only how archetypal patterns emerge (Hayek, 1989; Stacey, 1996). Instead of emphasizing planning and control, they must guide the process by influencing feedbacks and creating favorable contexts in which increasing returns can flourish (Anderson, 1999; Hench, 1997). Instead of being lulled by the ceaseless routine of equilibrium, they must remain alert to the faint signals that foreshadow the opening of new windows of opportunity. Instead of anticipating short-term payoffs, they must be patient, for the timeframe of macroentrepreneurship is measured not in quarters, but in decades. For those willing to embrace this new approach to strategic change—and who recognize the role that luck plays in the process—the long-term payoffs from managing the emergence of a cluster can be substantial.

## *NOTES*

We appreciate comments provided by Thomas Choi, Wayne Grossman, Steve Standifird, and anonymous reviewers. Research for this article was supported by a grant from the Charles H. Lundquist Center for Entrepreneurship.

- 1 Lock-in refers to "inflexibility ... in the sense that the left-behind technology [or competitor or location] would need to bridge a widening gap if it is to be chosen by adopters at all" (Arthur, 1988: 593).
- 2 In some instances, industries subject to increasing returns are "winner-take-most"

- industries (Arthur, 1994; Hill, 1997). For example, with 90 percent market share, Microsoft is the dominant player in the “winner-take-most” personal computer operating system industry.
- 3 Theaters offer fast-paced variety shows consisting of music, comedy, dialog, and occasional specialty acts. Although country music has been the dominant genre, its dominance has given way to greater musical pluralism over time. Likewise, “cornball” comedy has given way to other comedic forms. Entertainers engage the audience in an informal, “down home” dialog that allows the experience to be co-produced in a way that makes it more meaningful for visitors. Finally, shows sometimes offer supporting acts like juggling and magic.
  - 4 Interviews were conducted with theater and attraction owners, managers and performers; officials at collective organizations and governmental bodies; experts in transportation, travel, real estate, economic development, and local history; the entertainment editor at the local newspaper; and long-time residents. Documents were amassed from numerous sources; references are available on request.
  - 5 This was the case for Branson at the turn of the twentieth century.
  - 6 While the importance of “fit” cannot be underscored enough in advising decision makers to target specific industries, a world of increasing returns defies prediction of precisely which industry will emerge. For example, bowling alleys may have provided a good fit for the observable and unobservable location characteristics in Branson. But, because theaters were there first, bowling alleys never got a chance.
  - 7 We thank a reviewer for pointing out that first-mover advantages may not always hold. Specifically, the reviewer cautions that while the need for early entry and mind share may be critical, the enormous costs of being a first-mover in infrastructure may favor second or third movers (see also Kretschmer, Klimis, & Choi, 1999: S67).
  - 8 In other clusters, different types of infrastructure may be more important. For example, in San Francisco’s dotcom cluster, communications and electric utility infrastructure will undoubtedly be more important than transportation infrastructure.
  - 9 Due to space limitations, we discuss the creation of self-fulfilling prophecies only during the origination/lock-in stage. However, such strategies are relevant during the pre-history phase as well.
  - 10 Ozark Mountain Country was the name that macroentrepreneurs gave Branson and the surrounding area.
  - 11 We asked informants whether they had any theories that they found useful in explaining the emergence of the Branson cluster. While a handful of people seemed to have an intuitive grasp of an evolutionary perspective with some elements of increasing returns, most had no theoretical understanding. Several held a “field of dreams” theory: “If you build it, they will come” (see also Sylvester & Hansen, 1990). And some subscribed to a “divine” theory: “God has had his hand on this area for a long time.”

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