

Conceptualizing the Kentucky Horse Industry as an Economic Cluster

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“In theory, more open global markets and faster transportation and communication should diminish the role of location in competition....But if location matters less, why, then, is it true that the odds of finding a world-class mutual-fund company in Boston are much higher than in most any other place? Why could the same be said of textile-related companies in North Carolina and South Carolina, of high-performance auto companies in southern Germany, or of fashion shoe companies in northern Italy?....Today’s economic map of the world is dominated by what I call clusters: critical masses - in one place - of unusual competitive success in particular fields.”
(Porter 98 p 77)

“A critical challenge for all US regions is to determine their competitive advantage in the global economy, and industry clusters are a key vehicle for describing, understanding and enhancing sources of regional competitiveness. In turn, the pressure on a region to continually improve the competitive position of its firms is unrelenting.” (Goetz, 2004:2)

Introduction

The purpose of this paper is three-fold. First, to apply Porter’s (1998) concept of an economic cluster to an analysis of the Kentucky horse industry; second, to consider some of the factors that influence the growth and decline of economic clusters; and third, to illustrate some of the economic development strategies essential to capturing the opportunities for continued growth in the equine cluster. Initially, we will identify the characteristics of an economic cluster and illustrate how each characteristic applies to the Kentucky horse industry.

Why is conceptualizing the Kentucky horse industry as an economic cluster important?

The Kentucky equine economic cluster is founded on the confluence of important land resources – prime soils, underlying Karst geology, temperate climate, gently rolling topography – reinforced by cultural traditions and reflected in a distinct built environment. These land resources are the basis for the emergence of an equine economic cluster. An economic cluster is a geographic concentration of firms and institutions whose activities are interconnected and interdependent within a particular economic sector. The Thoroughbred breeding-sales component of this economic cluster is considered the strongest in the world with all the infrastructure - stallions, sales facilities, mare management, equine veterinarians, bloodstock agents, transportation services – required to support the industry within a compact geographic area. In addition, there is the difficult to price economically but consequential “value” of a foal bred and born in Kentucky.

“Although location remains fundamental to competition, its role today differs vastly from a generation ago. In an era when competition was driven heavily by input costs, locations with some important endowment - a natural harbor, for example, or a supply of cheap labor - often enjoyed comparative advantage that was both competitively decisive and persistent over time.”
(Porter 98 P77-78)

But these land resources are at risk from urban sprawl and it is important to understand that economic clusters can lose their competitive advantage and decline. The failure to support an economic cluster or worse, ignoring the cluster on the presumption that “it will always be here” can lead to the collapse and loss of an economic cluster.

A harbinger of this threat to the equine economic cluster in Kentucky might be the loss of the Standardbred segment of this cluster in the last 20 years. The number of Standardbred stallions has declined from 90 in 1985 to just 5 commercially active stallions in 2004. Many argue that aggressive breeder incentive programs in New Jersey and other states led to the loss of these stallions. Equally significant is the decline in Kentucky-bred yearlings at public auctions. In 2000, 560 yearlings sired by a Kentucky Standardbred stallion were sold at auction for an average of \$35,229. But in 2005 only 217 Kentucky-bred yearlings were sold for an average of \$22,687. The declining number of yearling sold reflects the loss of commercial breeding stallions in Kentucky, while the declining sale price reflects the declining quality of the remaining Standardbred stallions who are older and nearing the end of the stallion careers.

Yet, it is important to understand that economic clusters can be and are both a focus for economic development policies and engines for economic growth. Many states, regions and nations direct investments and development strategies to economic clusters that represent their comparative advantage in a global market. It is a choice that emphasizes building on their strengths so as to capture a competitive edge. It is a choice that not every government makes, and the consequences can be significant.

What is an economic cluster?

Michael Porter, a Harvard Business School professor, introduced the concept of economic clusters in 1990 in his book, The Comparative Advantage of Nations, and it has become the focus of economic development policies in many states, subregions of states and nations since then. More recently, Porter, (1998:78) described an economic cluster in this way:

“What is a cluster? Clusters are geographic concentrations of interconnected companies and institutions in a particular field. Clusters encompass an array of linked industries and other entities important to competition. They include, for example, suppliers of specialized inputs such as components, machinery, and services, and providers of specialized infrastructure. Clusters often extend downstream to channels and customers and laterally to manufacturers of complementary products and to companies in industries related by skills, technologies, or common inputs. Finally, many clusters include governmental and other institutions - such as universities, standards-setting agencies, think tanks, vocational training providers, and trade associations - that provide specialized training, education, information, research, and technical support.”

Some familiar economic clusters are: Silicon Valley in California, the Research Triangle in North Carolina, the Italian fashion leather cluster, the Napa Valley wine cluster, the film production cluster of southern California. Porter asserts that the co-location of interdependent firms -- firms that produce and sell inputs, purchase inputs and sell outputs -- within a cluster combined with the processes of competition and cooperation leads to increased productivity. This balancing of competition and cooperation within an economic cluster leads to a synergy that increases the economic vitality of all the component firms of the cluster and the cluster itself. As Porter notes (1998:79-80): “A cluster of independent and informally linked companies and institutions represents a robust organizational form that offers advantages in efficiency, effectiveness and flexibility....Being part of a cluster allows companies to operate more productively in sourcing inputs; accessing information, technology and needed institutions; coordinating with related companies; and measuring and motivating improvement.”

Can we assert that the horse industry in Kentucky constitutes an economic cluster? Let's begin with the facts that support the claim that Kentucky is “the horse capital of the world.” While other states have more horses, according to the Census of Agriculture, in no other place are horses the largest component of the market value of agricultural sales. In 2003, horses produced \$800 million in cash receipts, representing 23% of total agricultural cash receipts (Kentucky Agricultural Statistics Service). A Kentucky Horse Council study (2004) estimated that in 2002 the direct economic impact of the Kentucky equine industry was \$1.13 billion and the total impact was \$1.77 billion including 31,800 jobs and a payroll of \$630 million.

The Thoroughbred sector of the economic cluster clearly dominates. For example, today 79 of the top

100 Thoroughbred stallions in the world as ranked by the Jockey Club stand in Kentucky. At the September 2005 yearling sale, buyers from 38 countries spent \$384.35 million for 3,545 Thoroughbred yearlings. While there has been tremendous growth in the number of Thoroughbred stallions standing in other states and nations, the heart of the breeding segment of the Thoroughbred industry remains in Kentucky.

Characteristics of clusters as applied to the equine industry in Kentucky

Next, let's identify the characteristics of economic clusters and compare these to the characteristics of the horse industry in Kentucky. According to Porter (1998), there are seven key characteristics of economic clusters that contribute to their competitive advantage over single firms or unidimensional industries. However, for our purposes, these have been collapsed into four key characteristics.

1. A growing cluster develops as well as attracts entrepreneurs as well as related businesses who migrate into the geographic area because of the cluster. In other words, success breeds success.

Porter (1998:83-84) states: "Clusters are conducive to new business formation for a variety of reasons. Individuals working within a cluster can more easily perceive gaps in products or services around which they can build businesses. Beyond that, barriers to entry are lower than elsewhere. Needed assets, skills, inputs and staff are often readily available at the cluster location, waiting to be assembled into a new enterprise. Local financial institutions and investors, already familiar with the cluster, may require a lower risk premium on capital. In addition, the cluster often presents a significant local market, and an entrepreneur may benefit from established relationships. All of these factors reduce the perceived risks of entry-and of exit, should the enterprise fail."

In Kentucky, there is a host of small and large businesses that are associated with the horse industry and the diversity of these businesses are an indication of both the complexity of the cluster as well as the opportunities within the cluster for entrepreneurs and new business start-ups. The following lists highlight some (but not all) of this diversity. The numbers in parentheses are the number of firms listed in the Lexington area telephone book or the Kentucky Horse Council directory under these titles.

There are firms that supply inputs or services to the core firms of the cluster such as:

- Barn/farm/arena builders (12 firms)
- Arena and barn flooring (5 firms)
- Fencing companies (12 firms)
- Fence painting companies
- Pasture mowing and renovation businesses
- Farm equipment sales
- Horse tack and horse farm supplies (6 firms)
- Hay and feed supplies (10 firms)
- Bedding
- Pest control for horse farms

As well as the firms that purchase inputs, goods or services from them and constitute the nodal point of the economic cluster. These include:

- Horse farms
- Boarding farms (53 firms)
- Horse training centers (12 firms)
- Show arenas
- Race tracks

Also, there are firms that produce and market goods and services that are related or complementary to the core economic sector represented by the cluster. These include:

- Horse farm tours (2 firms)
- Bloodstock agents (e.g., 21 firms with 'bloodstock' in title)
- Transportation services (8 firms)

- Farrier supplies (5 firms)
- Driving equipment, jumps, polo equipment (7 firms)
- Horse Insurance
- Horse publications, marketing

The cluster also attracts a diversity of specialty businesses that address the unique needs of the cluster. Sometime these are branches of existing businesses located elsewhere (e.g., Nationwide Horse Transportation, International Horse Transportation, Drexler Horse Transportation), but many are new businesses started by entrepreneurs who are drawn to the concentration of businesses in a particular sector. The cluster makes it easier for entrepreneurs to recognize opportunities and the risks of starting a new business are lower because the cluster provides an ample supply of customers. Examples of these specialty businesses include:

- Equine podiatry
- Equine photography (5 firms e.g., R. Gibbons Equimotion Photos)
- Equine art
- Equine jewelers (6 firms, e.g., American Academy of Equine Art, Inc)
- Show clothiers
- Dry cleaners for horse blankets
- Equine acupuncture (7 firms)
- Equine dentistry (3 firms and most vet clinics)
- Equine massage
- Equine hydrotherapy
- Equine Insurance (10 firms)
- Equine financial services/accounting (10 firms)
- Pedigree research (10 firms)
- Horse publications, marketing (e.g., Hammond Equine, Division of Hammond Communications Group, National Equestrian Communications)
- Horse farm real estate agencies (5 firms)
- Other specialized equine services (e.g., Equine Business Resources, Horsesales.com)
- Equine specialty feeds and feed supplements (e.g., Alltech, Kentucky Equine Research)

What contributes to the economic vitality of a cluster? It is the tension between cooperative and competitive forces that leads to economic growth. Goetz (2004:1) explains this process in this way: "Clusters are defined as concentrations of firms in particular industries that both compete and cooperate with one another, that share common inputs such as labor with certain skill sets, and that benefit mutually from new knowledge generation and spillovers by being located relatively close to one another....Industry cluster analysis addresses all of the constraints and opportunities facing an industry, and the clustering benefits accrue to the cluster as a whole, rather than to only individual firms...An essential idea behind clusters is that it matters not so much what the firms of a region produce but how they do so. In clusters, firms compete cooperatively and cooperate competitively with one another."

These processes encourage innovation and the networks of social relationships within the cluster ensure that innovations spread quickly through cluster firms. Two examples illustrate this point. One rapidly adopted innovation was the concept of syndicating stallions, first introduced by Leslie Combs of Spendthrift Farm in 1967 when he syndicated Nashua for \$1.25 million. Rather than a single owner standing a stallion, a syndicate offers "shares" in a stallion's "book" to anyone willing to pay the price of the share. Each share guarantees a cover for a mare of the share owner's choice. Today, every top stallion coming off the race track and many others who never made to the track but have impeccable breeding is syndicated. In 2005, Smarty Jones' syndicate price totaled \$39.5 million for 60 shares (30 retained by his owner, 10 purchased by the farm standing the stallion and the other 20 sold publicly).

Another innovation which has carved a competitive niche for some is the approach of Robert Clay at Three Chimney Farms. "The strategy for Three Chimneys differed from that of Kentucky's established breeding farms, some of which managed over forty stallions. Clay adopted a boutique approach to guarantee personal service for both the owners and their horses, and serve as a point of differentiation to ensure successful competition with larger, better-funded neighbors...In addition to offering close personal

attention and care, Clay limits the size of a stallion's "book," selecting a limited number of quality mares from those that have applied for a booking. "In 1984, a normal book was 45 mares a season. Last year, one of our competitors bred over 180 mares to several of his stallions. We have a customer base that comes to us because we limit our books, creating some scarcity value that appeals to the people willing to pay to get these exclusive stallions," he says" (Hanna, 2005). Within the industry today you can observe these competing approaches to profitability.

Porter (1998:83-84) says "Clusters are conducive to new business formation for a variety of reasons. Individuals working within a cluster can more easily perceive gaps in products or services around which they can build businesses. Beyond that, barriers to entry are lower than elsewhere. Needed assets, skills, inputs and staff are often readily available at the cluster location, waiting to be assembled into a new enterprise. Local financial institutions and investors, already familiar with the cluster, may require a lower risk premium on capital. In addition, the cluster often presents a significant local market, and an entrepreneur may benefit from established relationships. All of these factors reduce the perceived risks of entry-and of exit, should the enterprise fail."

Financial institutions in Kentucky, especially central Kentucky, would not be surprised to receive a business plan for the specialty businesses listed earlier. Moreover, these financial institutions would be more likely to invest in such businesses because there are a sufficient number of horse owners willing to invest in specialty services such equine massage or hydrotherapy.

It is important to understand that success breeds success. Growth in the number and diversity of businesses within the cluster attracts new firms. Porter (1998:84) argues that: "A growing cluster signals opportunity, and its success stories help attract the best talent. Entrepreneurs take notice, and individuals with ideas or relevant skills migrate in from other locations. Specialized suppliers emerge; information accumulates; local institutions develop specialized training, research, and infrastructure; and the cluster's strength and visibility grow. Eventually, the cluster broadens to encompass related industries."

2. Clusters flourish in part because of the presence of a large, skilled, and knowledgeable labor pool.

The cluster attracts skilled labor because there are ample opportunities to find employment at good wages given the competition among businesses within the cluster. Firms are more likely to consider relocating to the region because they have confidence that employees with specialized skills will be available or that required training can be found. This reduces the "search and transaction costs" for both new and existing businesses seeking employees. Labor also benefits from the clustering of related firms. Goetz (2004:1) notes that "clustered firms invest more funds in worker training than do non-clustered firms even in rural areas...[and] that rural firms in clustered industries pay higher average wages than do firms that are not clustered." Bertini (1994) says: "For a profitable local system of an advanced industrialized country to be successful, the local labor force must be highly specialized in the use of technology and in the **understanding of the market and the clients' needs**" (Emphasis added). In a cluster, labor at all levels develops this intimate knowledge and this enables them to transfer the knowledge from one job to another.

In the equine cluster, farm workers who have experience handling horses are paid substantially more than non-equine farm workers. Thoroughbred farms will pay a premium to hire skilled temporary help from June through September to "prep" yearlings for the fall sales. These workers will "prep" the yearlings – hand walking and "rubbing" them and take them through the sales - and often receive a "bonus" if their yearlings sell well in addition to their salary. Temporary horse sales workers with experience will typically earn \$100-150 a day plus a meal allotment, and they too often receive a bonus if their yearlings sell well. The Thoroughbred sales provide well-paying temporary jobs for those who have experience showing other breeds of horses because the ability to "prep" a show horse for the ring is transferable to "preping" a yearling for the sales ring.

Professionals also benefit from the cluster. With the high concentration of horses in one area, there are opportunities for accountants, veterinarians, farriers, insurance and real estate agents to specialize in providing services to horse owners and horse farms. Here, you can be not just an equine veterinarian but

an equine veterinarian who specializes in reproductive problems or foot problems.

Finally, there are employment opportunities within the cluster that are not available elsewhere. There are particular skill and knowledge needs unique to each cluster and the cluster attracts persons with these interests. In the equine cluster, persons with an understanding of the marketing and a keen eye for horses can establish a successful career as a bloodstock agent or a "pin hooker" (someone who buys a Thoroughbred weanling at a low price in order to sell as a yearling for a profit). Persons with an interest and experience in organizing horse shows and managing the paperwork required for a show can make a living doing just this.

3. Within the cluster, specialized information is developed and circulates among firms and institutions, stimulating innovation and facilitating adaptive responses to critical conditions.

Porter (1998:81) says: "Extensive market, technical, and competitive information accumulates within a cluster, and members have preferred access to it. In addition, personal relationships and community ties foster trust and facilitate the flow of information. These conditions make information more transferrable."

While it is true that firms within the cluster compete for customers and market share, there is also a considerable amount of cooperation. The most visible aspect of this cooperation is the exchange of information, and especially information that may influence the health or competitiveness of the cluster. But there is also a level of coordination in market actions and other joint activities that contribute to building trust and social capital among the firms in the cluster.

In Kentucky, there are formal networks through local organizations that connect those involved in the equine cluster. There are also informal networks of information exchange that even more quickly insure that information flows through the cluster. For example, veterinarians, farriers, as well as tack and feed stores are the primary informal information networks. Veterinarians and farriers travel from one farm to another and carry and transfer news at each stop. Tack and feed stores are where people related to the cluster gather and share information and news.

In April, 2003, pregnant mares late in gestation began to abort and newborn foals were dying. Within one week, everyone in the central Bluegrass area knew that there was a problem and within two weeks, the word had spread that if pregnant mares were pulled off their pastures, they were less likely to abort, and if they were kept off the pastures after foaling, their foals seemed to do better. Over the next 6 months to a year, there was a constant exchange of ideas and news about the cause of MRLS (Mare Reproductive Loss Syndrome) as those involved in the cluster sought to understand and control a health problem with potentially devastating effects on the industry. MRLS affected all pregnant mares, regardless of breed, and demonstrated that it is the horse in general, not only Thoroughbreds, at the heart of this economic cluster.

4. A cluster offers both internal and external complimentary opportunities resulting in a whole that is greater than the sum of its parts. In other words, the activities of individual firms in the cluster are interdependent and can be mutually reinforcing or can diminish the value of related firms.

There are many types of complementarities in an economic cluster, and each strengthens the competitive position of the cluster. In a cluster, customers can evaluate goods and services from a variety of vendors gathered in a single area. Porter (1998:82) argues that "complementarities can make buying from a cluster more attractive for customers. Visiting buyers can see many vendors in a single trip."

This is obvious in Kentucky, where the Keeneland and Fasig-Tipton horse sales attract buyers from more than 20 countries. While sales at these facilities dominate, it is also true that visits are made to farms where horses are bought and other acquisitions occur (e.g., breeding arrangements) simply because customers have gathered in this place.

"Other complementarities arise in marketing. A cluster frequently enhances the reputation of a location in a particular field, making it more likely that buyers will turn to a vendor based

there...Beyond reputation, cluster members often profit from a variety of joint marketing mechanisms, such as company referrals, trade fairs, trade magazines and marketing delegations.” (Porter 98 p 82)

Potential customers know about the cluster because of the marketing of the reputation of the geographic area that focuses their attention on the diversity and quality of products and services available in this place. The marketing activities of individual firms within the cluster are reinforcing of the marketing efforts of other firms, strengthening the reputation and image of the cluster. For example, every Thoroughbred farm that stands a stallion advertises in both national and international publications. The numerous advertisements from Kentucky breeding farms touting the presence of leading sires reinforces the notion that this is the area for those interested in breeding or buying top quality Thoroughbreds.

Another type of complementarity that arises because of a cluster is the gathering of trade and professional associations associated with the cluster. The concentration of firms, specialized knowledge and technical expertise creates a supportive environment for these associations. In Kentucky, there are 10 national breed registry office and 15 national offices of other types of equine-related organizations or associations. The influence of the Kentucky equine cluster on the industry as a whole is intensified by the growing number of national and international horse associations locating at the Kentucky Horse Park at the “National Horse Center. These include: the American Saddlebred Association, US Pony Clubs, US Equestrian Federation, US Polo Association as well as other types of equine-related professional associations such as, the American Association of Equine Practitioners, and the new US Jockey College.

Finally, tourism is distinct economic cluster that has developed complimentary businesses associated with the horse cluster. For example, there are several horse farm tour businesses in the central Kentucky area and Dan Rosenberg of Three Chimney Farms estimates 25,000 people a year come to the farm to visit Smarty Jones. Major horse-related events such as the Kentucky Derby, the Rolex Three Day Event, the Junior League Horse Show (the world’s largest outdoor gaited horse show) or the World Championship Saddlebred Show bring hundreds of thousands of visitors to the state, and many take advantage of the high concentration of equine-related businesses. For example, exhibitors at the Kentucky Horse Park use the area’s hotels and restaurants as well as trailer sales/repair, horse show clothing and tack stores.

5. A cluster builds social capital as well as financial capital and this social capital reinforces the economic potential of the cluster.

Shared values and norms develop within an economic cluster. Typically these define good business practices, quality products and services, trust, and reciprocity, and expectations. Frequent formal and informal contact among the firms and people within the cluster help build social capital and increases the likelihood of joint ventures, strategic alliances, and collaborative work that builds and strengthens the competitive position of the cluster. Rosenfeld (1997:13) says “working clusters rely on the networks and mechanisms by which business people can regularly associate with their peers. Much of a region’s stock of social capital resides in its civic and professional associations, and its economic value is deeply embedded in the functions of these business associations. Social capital is typically defined as the ability of people to work together for some common purpose.”

In the equine cluster, social capital is built through routine interactions among persons in the cluster who belong to the professional associations in the region (e.g., Kentucky Thoroughbred Farm Managers Club, Kentucky Thoroughbred Owners and Breeders Associations) and also interact on a daily basis through their respective businesses. Social activities, such as the annual farm manager’s trail ride (which is open to anyone) or the High Hope Steeple Chase Thoroughbred farm race provide opportunities for informal social interaction. The Kentucky Thoroughbred Farm Managers Club provides college scholarships to the children of farm and race track workers, forging additional ties and trust within the cluster.

6. A cluster draws the support public institutions and attracts public investments.

In all economic clusters, there develops a relationship between the firms of the cluster and public institutions, especially educational and technical institutions. These often develop educational and training

programs that support the core activities of the firms in the cluster. Public investments directed to public goods and infrastructure that support the activities of the cluster. Road improvements and access to public utilities or broadband are examples of public investments, but states or communities may also offer other kinds of infrastructure or services (e.g., low interest loans, tax holidays) in order to strengthen the competitive position of the cluster.

In Arizona, there are eleven interactive industry clusters and a structured set of seven foundations to support the clusters” (Breault, 2000). Interestingly, Arizona’s “foundations” are the “infrastructure that supports the clusters. Often, the foundations are controlled or heavily influence by the public sector. They include physical infrastructure such as our transportation system or information infrastructure like our telecommunications network. They certainly include human and financial capital as well as quality-of-life amenities and our education and training systems” (Zylstra, 2000). What is critical is that public institutions and governments see a collaborative benefit from supporting the businesses in the cluster and the firms in the cluster benefit from the expertise and resources of public institutions.

In Kentucky, there are many examples of public investments in the equine cluster. The Livestock Disease and Diagnostic Center (LDDC), which is affiliated with the University of Kentucky, performs more equine necropsies than any other diagnostic lab in the nation. The state is currently funding a \$13 million expansion in the LDDC. The Kentucky Horse Park, which officially opened in 1978 with the World Championship is another example of public investment in infrastructure. The Horse Park has an area set aside for professional horse associations, facilities to support a four star 3 day event, and will have another \$30+ million invested in another indoor arena to prepare for the 2010 World Equestrian Games. Finally, several public institutions of higher education have associates, bachelors and Master’s degrees related to the equine industry and new educational partnerships are being developed every year. The University of Louisville offers and undergraduate degree in equine business management and has established a national reputation for studies focused on the racing sector of the business, and other institutions have developed their own unique educational niches.

Summarizing the characteristics of clusters

Rosenfeld (1997:10) says that “a working cluster, as exemplified by Silicon Valley in California, the ceramic tile industry in Sassuolo, Italy, or flowers in the Netherlands, is an agglomeration of connected companies that are aware of their interdependence, value it, act on it, and collectively operate as a system to produce more than the sum of their individual parts. These groupings of firms have the social infrastructure that keep information flowing continually, spark new ideas, generate the networks, and encourage new firm start-ups. They have a highly specialized and expansive support system. Perhaps the greatest advantage of working clusters is the ability of their members to learn quickly from each other - and to forget outdated practices that can delay innovation.” Kentucky’s equine industry embodies all the key characteristics of an economic cluster and it is one that has been building strength and importance for over a hundred years.

The fall or decline of clusters

What is important to understand is that while economic clusters can be springboards for growth and development, they also can lose their competitive position and decline. “For example, the sugar beet industry that was started in Utah over 150 years ago by Mormon settlers recently withdrew completely from that state to consolidate in Idaho. Thus a region that currently enjoys clustering benefits has no guarantee that they will last forever.” (Goetz, 2004:2)

What can lead to the decline of an economic cluster? At its heart, the decline begins with the loss of its competitive advantage. This may occur because of the emergence of a competing cluster elsewhere or because of internal conditions (e.g., emergence of cartels, breakdown of shared norms) that converge to limit the innovation and vitality that once drove the growth of the businesses within the cluster. Or, governmental regulations may restrict the adaptability and flexibility of the businesses in the cluster or intervene in the internal competition among firms.

But decline can also occur because the public sector fails to invest so as to nurture and sustain the viability of the cluster. There may be a tendency to take-for-granted the presence of an economic cluster and to presume that since it has been here for a long time it will always be here. But Porter and others suggest that this can be the death-knell of a cluster, for “without on-going routine analysis, monitoring and nurturing” (Goetz, 2004:2) clusters will find it difficult to sustain their competitive position in a changing global economy.

Some would say that there are already signs of weakness in Kentucky’s equine cluster. For evidence, one can point to the virtual collapse of the Standardbred component of this cluster, which in less than 20 years went from 95 stallions standing in Kentucky to 30 in 2004 – and only 5 of these covered enough mares to be classified as commercial stallions. Furthermore, the number of Standardbred yearlings by Kentucky sires sold at 3 major harness racing sales has declined from 560 in 2000 to 217 in 2005. Their average value declined from \$35,229 to \$22,687

Of great concern for Kentucky’s equine cluster is the loss of prime farmland. A land-based economic cluster such as the equine industry is at particular risk if the land resources that support the cluster are diminished or degraded. In 1997, Kentucky ranked #18 in the U.S. in the loss of prime farm land to urban uses. The American Farmland Trust reports that from 1987 – 1992, Kentucky lost 10,140 acres per year. This rose to 16,000 acres per year between 1992-1997 – an increase of 58% and, the pace of transition from farmland to urban use has only increased since 1997. Of greater concern is that the central Bluegrass region – the heart of the equine economic cluster – is at greatest risk to this loss of prime farmland given current patterns of urban growth and development.

Clusters and economic development

Many local, regional, state, national and transnational governments and agencies have recognized that economic clusters represent a competitive edge in a changing global marketplace and have focused their development efforts on supporting clusters in their geographic area (e.g., Arizona, Florida, Connecticut, Colorado, New Mexico, Massachusetts, Pennsylvania, Quebec, Toronto, Vancouver, Scotland, Singapore) (Breault, 2000; Cumbers and MacKinnon, 2004). Bradshaw et. al. (1999:19) note that in 1996, “Collaborating to Compete in the New Economy” identified the clusters underlying the economies of 10 California region and identified public policies that could support their development. “Since then, more than 20 California jurisdiction have embarked on their own cluster analyses. Many of these local efforts are leading to revised economic elements in local general plans - as in the small cities of Dinuba, Delano, and Napa. And in Fresno County, planners are using economic development clusters to drive their general plan revision.” They go on to note that the process moves from identifying existing business clusters to defining development strategies that will strengthen and expand the clusters to suggesting “ways of using land use planning to strengthen clusters.”

While much of the research and public policy related to economic clusters has focused on high tech and manufacturing clusters, there are a growing number of governments at different geographic levels that have recognized agriculture as a significant economic cluster. Napa Valley California’s wine cluster is well known, but Fresno County CA has focused on over 50 industries in an agricultural cluster that involves “preproduction (financial, irrigation), production (farming, labor contracting), and post-production (food processing, marketing) firms” (Bradshaw et.al., 1999:20) as the focus of its economic development activities. Other places have also focused on agricultural or natural resource-based clusters (e.g., furniture production in Tupelo MS and Hickory High Point region of North Carolina, mushroom cluster in Chester County PA).

Several factors underlie the decision of government to focus on cluster-based economic development policies. First, studies (e.g., Gabe, 2003; Krugman, 1991) suggest that new business activity is higher in those places where there is a high concentration of firms in particular industry sectors, reflecting the availability of skilled labor and related firms. Like the grain of sand that produces a pearl in the oyster, a concentration of related firms attracts new firms and entrepreneurs and generates the innovation that provides additional opportunities for economic growth. Second, given that clusters attract growth, there is

a higher return to public investments in economic development in these places than in others (Gabe, 2003). Zylastra (2000) remarks: "Business clusters fuel the region's economy, and they are the best focus for economic development efforts. Building and strengthening our existing clusters and developing or introducing other clusters is what will move us profitably ahead in this new century."

Third, the concept of an economic cluster provides an heuristic that enables political decision-makers to explain why they are focusing development programs on particular industry sectors. It is not about favoritism or a reaction to special interests but a reasoned use of scarce resources to stimulate economic growth. Rosenfeld (1997:16) says: "Suggesting that business clusters add value to a region implies an entirely new set of public policies, one that shifts the focus of attention from an individual place or individual firm to a region and clusters of businesses. As a result, states and regions - as they become more focused on clusters - are searching for ways to define their production systems in politically acceptable ways (avoiding the perception of favouritism, for example) and strengthen their competitive advantages." The heuristic value of economic clusters lies in their dynamics -- what happens in the cluster rather than what happens in particular firms -- and guiding us to think differently about what factors are critical to the success of clusters and the respective roles of the public and private sectors in promoting cluster growth. Porter (1998:89) supports this point by saying that "clusters offer a constructive way to change the nature of the dialogue between the public and private sectors."

Finally, many (Cumbers and MacKinnon, 2004; Goetz, 2004; Rosenfeld, 1997) argue that clusters can be effective ways to stimulate "regional economic growth for rural communities. In particular, clusters solve the problem of small scale by providing agglomeration economies, they provide access to enhanced labor pools with industry relevant skills, and when properly implemented they influence the regulatory and legal environment as it impacts profitability and competitiveness of the industry" (Goetz, 2004:2). This point is evident in Kentucky's equine cluster because a horse owner, no matter the size of the horse farm, no matter the breed of horse, and no matter the type of horse activity they engage in, has access to the same quality of professional horse services. The individual back-yard horse owner and the stallion manager at Lane's End Farm both have access to world-renowned veterinary services because of the existence of the equine cluster.

What kinds of development strategies would facilitate the growth of the equine cluster in Kentucky? Kentucky's recent decision to offer breeders' incentives to non-Thoroughbred breeds is an example for this decision invests state funds in nurturing the expansion of the equine cluster by encouraging other breeds to establish breeding and performance facilities here. But we need to nurture the equine cluster in order to build on the opportunities it provides. Types of strategies needed are:

- < Create sales tax equity between horse and other agricultural enterprises. Currently in Kentucky, livestock farmers pay no sales taxes on feed, bedding, or other supplies. But horse farm operators do. This situation creates an inequitable tax burden on the production units of the equine cluster and discourages the establishment of horse farms.
- < Eliminate the sales tax on horses purchased at sales in Kentucky that remain in the state. At this time, if you purchase a horse at a sale in Kentucky and take it out of Kentucky you will pay no sales tax on your purchase. But if the horse remains in Kentucky you must pay the sales tax. This situation discourage buyers from keeping their horses in Kentucky after a purchase. This especially affects the Thoroughbred segment of the cluster because broodmare boarding farms are a key component of this segment, yet there is a disincentive for boarding a brood mare purchased at Keeneland or Fasig-Tipton sales in Kentucky.
- < Identify way to encourage preservation of prime horse farm land. A land-based economic cluster such as the equine industry is at particular risk if the land resources that support the cluster are diminished or degraded. Yet the central Bluegrass region – the heart of the equine economic cluster – is at great risk to this loss of prime farmland given current rates and patterns of urban growth and development. Hanna (2005) offers the following comment on Robert Clay of Three Chimney's Farm: " He's also involved in an effort to preserve 50,000 acres of farmland and open space from the steady pace of development. `It's a signature brand for Lexington and the state of

Kentucky — that's worth paying attention to,' he says.”

- < Improve and expand technical support services (e.g., specialized education and training, technical assistance, research and development). There is ample evidence that technical training and research investments are keys to the health of an economic cluster. Many states have determined that this should be a primary component of their role in cluster-based development as this technical infrastructure is the basis for innovation and competitiveness.
- < Identify gaps in the equine cluster and recruit businesses by conducting a detailed analysis of the equine cluster. Targeted recruitment can strengthen a cluster and add to its competitive position.
- < Support entrepreneurial development within the cluster through business education, incubators, and venture capital. The equine cluster is complex and highly diversified, yet Kentucky has barely tapped the opportunities for growth. A significant portion of new jobs added to the economy in the last decade have come in small businesses and entrepreneurs have an important role to play in small business development.

Summary

“Government, working with the private sector, should reinforce and build on existing and emerging clusters rather than attempt to create entirely new ones. Successful new industries and clusters often grow out of established ones...To justify cluster development efforts, some seeds of a cluster should have already passed a market test.” (Porter 98 p89-90).

The equine cluster in Kentucky and in particular, the central Kentucky Thoroughbred segment of the cluster have already passed a market test and done so successfully for more than a century. This concept explains why there is an existing concentration of horse-related businesses and manufacturers and trade associations in Kentucky. This concept highlights the significant role of the land resources in sustaining the equine economic cluster as well as the enormous potential for new growth. While supplements and other innovations may have diminished the reality of this competitive advantage, the power of the myth or mystique of a “Kentucky-bred” horse remains influential. Finally, this concept helps us to understand that the most effective economic development dollars are those invested in existing clusters and that the failure to support an economic cluster can lead to its decline. A cluster-based development policy focused on the equine industry is an opportunity to build on the unique economic cluster that has developed in Kentucky, creating new jobs and new value for the state.

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Examples of cluster-based state policies

Oregon ag clusters

<http://www.oregonclusters.org/agriculture.html>

Look at Colorado State University's VP for Research statement on economic clusters

<http://vpr.colostate.edu/index.asp?url=cal16>

King County CA Rural Economic Strategies statement that highlights agriculturally-related clusters

<http://www.metrokc.gov/exec/news/2006/0105rural.htm>

A governor's guide to cluster-based economic development

http://www.eda.gov/ImageCache/EDAPublic/documents/pdfdocs/nga_5clusters_2epdf/v1/nga_5clusters.pdf