

ENTREPRENEURIAL COMMUNITY  
IN KANSAS CITY:  
FROM FRAGMENTED TO COLLABORATIVE?

November 2012

Ewing Marion

**KAUFFMAN**  
Foundation

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## Executive Summary

A small set of metropolitan areas in the United States can be considered second-tier life sciences or technology regions. Kansas City is such an emerging second-tier region. The Kansas City metropolitan area was able to grow a small but specialized knowledge economy because of the presence of large firms and subsequent efforts to strengthen entrepreneurship. This paper presents data from twenty interviews conducted in the summer of 2012 with regional experts, venture capitalists, and entrepreneurs who have successfully raised risk capital.

The analysis of Kansas City's entrepreneurial community shows, first, that large firms' role as incubators of entrepreneurial startup companies seems to have diminished, and that there are weak connections between existing large firms and entrepreneurial ventures. Second, entrepreneurial exits in the form of mergers and acquisitions have increased and a small number of cashed-out entrepreneurs are reinvesting their funds and becoming engaged. Yet this process seems to be still in its beginning stages. Third, the region's entrepreneurial community does not exhibit strong networking and collaboration. Rather, entrepreneurial ventures and industry connections exist much like "islands of excellence" without strong interconnections. Fourth, although the availability of funding has increased, local entrepreneurs perceive the accessibility and availability of funds—and the capacity local venture investors bring to the table—as limiting factors. At the same time, while the number of investment groups has increased, the investor community is still fragmented and not well connected. Fifth, the energy and collective effort to improve the Kansas City entrepreneurial community has increased and strengthened significantly since 2006 when a similar study was conducted.

Various groups and organizations have ensured a thickening of the entrepreneurial support infrastructure in the form of creation of incubators, establishment of financial incentives to invest in entrepreneurial ventures (i.e. angel tax credits), and the addition of effective mentoring and networking events. Yet the analysis of the data shows that Kansas City faces the drawbacks of a region characterized by organizational thinness in the form of weak endowment of firms and organizations that can fuel the entrepreneurial pipeline and a lack of interaction and networks among key members of the entrepreneurial community, which keeps the entrepreneurial economy fragmented. To overcome organizational thinness and fragmentation, this paper suggests focusing policy efforts on connecting key actors in the entrepreneurial economy such as existing large firms, entrepreneurial ventures, universities, and funding and mentoring organizations.

## 1. Introduction

When Ewing Marion Kauffman founded Marion Laboratories in 1950 in Kansas City, Missouri, he laid the groundwork for what would later become a second-tier life sciences region. Little did he know that the Kansas City metropolitan region would evolve into a small yet specialized hub for drug development, diagnostics, clinical research, and animal health. The region is home to about 200 life sciences companies (Kansas City Area Life Sciences Institute, 2009). It ranks among the top fifteen metropolitan areas with the highest concentration of contract research organizations (Getz, Lamberti, Mathias, & Stergiopoulos, 2012) and its animal health firms account for nearly 32 percent of total sales in the \$19 billion global animal health market (Animal Health Corridor, 2012). Besides life sciences, Kansas City hosts a set of information technology (IT) firms that are known far beyond its borders: Sprint Nextel is a global leader in wireless telecommunication, Cerner is an internationally known health care information technology firm, and Garmin produces global positioning systems. Of course, the life sciences industry in Kansas City is not as large and vigorous as it is in Boston or San Francisco, and its IT industry is a far cry from high-tech centers like Silicon Valley or Seattle. Yet for the past six decades since the founding of Marion Laboratories, the region managed to grow these industries even though it lacked important prerequisites such as a world-class higher education system, large amounts of venture capital, or high levels of cutting-edge innovation.

One of the central drivers of high-tech and life sciences sectors in second-tier regions is entrepreneurship and new firm formation. In second-tier regions, the formation of entrepreneurship capital is facilitated by the presence of large firms, which often are prominent leaders in their respective sectors (Mayer, 2011). My research indicates that large firms can, under certain circumstances, act as “surrogate universities” and spur the development of these regions. The most successful second-tier regions have managed to grow an entrepreneurial ecosystem that supports subsequent economic growth and development. Yet not all second-tier life sciences and high-tech regions manage to continuously leverage their initial advantages and foster such an ecosystem. They still face significant challenges that may inhibit their ability to grow a competitive entrepreneurial economy: they lack a world-class higher education infrastructure; angel and venture capital is not readily available; in some cases the regions also show low levels of industrial clustering; they have fragmented and thin entrepreneurial support institutions; and they may show a weak entrepreneurial culture.

Kansas City is a case in point: spin-offs from Marion Laboratories—primarily during the 1980s and 1990s—and entrepreneurial IT firms like Cerner or Sprint contributed to the evolution of Kansas City as a second-tier life sciences region. However, today, Marion Laboratories no longer exists in this form and its successor organizations have ceased their role as startup incubators. In addition, prominent firms like Sprint, Cerner, and Garmin and newly established research institutions like the Stowers Institute have not spurred much entrepreneurship. A study I conducted in 2006 (Mayer, 2006) attests to Kansas City’s potential to create an entrepreneurial economy. Yet the study also highlights several shortcomings in the innovation and entrepreneurial environment.

We do not yet have a good understanding about the process by which entrepreneurial economies, particularly those in second-tier regions like Kansas City, evolve and change over time and what policy levers can encourage entrepreneurial dynamics in these regions. We know a lot about pioneering regions like Silicon Valley, which successfully have adapted to industrial change through entrepreneurial activities (Breshnahan & Gambardella, 2004; Kenney, 2000; Lecuyer, 2005; Lee, Miller, Hancock Gong, & Rowen, 2000; Saxenian, 1994).

In analyzing the case of Kansas City, this paper is guided by the following research questions:

- How has the entrepreneurial economy in Kansas City changed over the past six years?
- What role do large hub firms play today in facilitating entrepreneurial dynamics?
- In what ways are entrepreneurs networked with others in the region?
- In what ways has the region facilitated entrepreneurial dynamics?
- How has the entrepreneurial culture and support infrastructure changed over the past years?

The motivation for this study is threefold. First, it seeks to widen the understanding of entrepreneurial economies to include second-tier regions, and specifically to explain changes that take place in the entrepreneurial economy and its support system in an environment not well endowed with factors that seem to be critical for economic success. Second, the study will enable the comparison of data gathered in 2005 with data gathered in 2012. This will allow for an evolutionary perspective and provide the opportunity to highlight ways in which the economic landscape evolves over time. Such an evolutionary perspective fits with recent discussions in evolutionary economic geography about the role of entrepreneurship in regional economic change (R. Martin, 2010). Finally, the study is motivated by the Ewing Marion Kauffman Foundation's interest in gaining a more in-depth understanding of its home region. Ewing Marion Kauffman, the founder of Marion Laboratories, started the Kauffman Foundation in the mid-1960s at a time when he had successfully established his pharmaceutical firm in Kansas City. His goal was to help foster an entrepreneurial economy and improve communities. Thus, understanding the factors that lead to changes in the entrepreneurial economy of second-tier regions like Kansas City is a central task of the foundation and critical to its future in the Kansas City region.

The remainder of this paper proceeds as follows: The next section discusses the state of knowledge about different models of regional development in second-tier regions and the role that entrepreneurship plays in them. This is followed by an overview of the case study, research questions, and methodology. The paper then presents empirical evidence relating to the Kansas City entrepreneurial economy, and concludes by reflecting on the particular characteristics of Kansas City's entrepreneurial economy and how it changed, and on the reasons for this change. In addition, the paper discusses implications for the Kauffman Foundation and outlines policy recommendations.

## 2. Second-Tier Regions: Different Models of Development

Second-tier regions like Kansas City have not received much attention in the literature about regional high-tech development. Most studies have focused either on the largest metropolitan areas that also function as global or world cities, such as New York, or on leading high-tech centers like Silicon Valley. Yet second-tier regions should not be completely forgotten in regional economic analyses for two reasons: first, second-tier regions play an important role in stabilizing a nation's polycentric urban system, and second, some second-tier regions have emerged as viable locations for specialized high-tech industries. Markusen and DiGiovanna (1999) define second-tier regions as "spatially distinct areas of economic activity where a specialized set of trade-oriented industries takes root and flourishes, establishing employment and population-growth trajectories that are the envy of many other places." There are many examples of up-and-coming second-tier regions in the United States. Portland, Oregon, has managed to grow a specialized semiconductor and electronics industry as well as a dynamic cluster of active wear and outdoor gear firms (Mayer, 2012b; Mayer & Cortright, 2011). In Boise, Idaho, a small yet specialized high-tech industry grew around two large high-tech firms (Mayer, Forthcoming). Colorado Springs, Colo., utilized the presence of military facilities to attract electronics branch plants (Mia Gray & Markusen, 1999). Kansas City also can be described as a second-tier region (Mayer, 2011). These examples illustrate that smaller metropolitan areas can foster clusters of specialized knowledge industries.

There are a variety of ways in which these second-tier regions have emerged, and as a result there are different models of regional high-tech development. However, traditionally scholars and policymakers have utilized the Silicon Valley model, which is described as an industrial district or a cluster of many, often small, firms embedded within strong cooperative networks. Markusen (1996) describes this type of district as a *Marshallian industrial district* and notes that there is substantial intradistrict trade among buyers and suppliers; that key investment decisions are made locally within the district; that the labor market is highly flexible and internal to the district; and that specialized sources of finance, technical expertise, and business services are available to firms in the district. Saxenian (1994) has analyzed the Silicon Valley model and notes that the culture of trust and cooperation, as well as the ways in which firms adopt strategies of flexible specialization and networking, contribute to Silicon Valley's success. The Silicon Valley model, however, seems to be an exception rather than the norm in regional high-tech development. For example, efforts to replicate this model have always failed (Leslie & Kargon, 1996). In addition, Silicon Valley may not be the ideal to which other regions should aspire when it comes to equitable and sustainable growth and development because of the persistent presence of income inequalities, high housing costs, increasing inability of the public sector to finance public services, and a sprawling metropolitan region (Joint Venture Silicon Valley, 2012).

Markusen and her colleagues (Markusen, Lee, & DiGiovanna, 1999) argue that fast-growing second-tier regions do not have to follow this Silicon Valley model. Rather, large firms, branch plants, or government institutions also can play an important role in shaping development trajectories of second-tier regions, and these regions might flourish even though they lack strong local cooperation and networking. Markusen et al.

(1999) present three other models of regional development: the hub-and-spoke industrial district, the satellite industrial platform, and the state-anchored industrial district. In reality, however, each second-tier region might combine elements of these idealized types, which are briefly described in the following paragraphs.

In the *hub-and-spoke industrial district* a small number of key firms, which often are large and dominant in their respective markets, act as anchors or hubs of the regional economy. A classic example of a hub-and-spoke district is Seattle, Washington, where the aerospace industry and the software industry are anchored by Boeing and Microsoft (Mia Gray, Golob, & Markusen, 1996). The hub firms have substantial linkages to outside suppliers and competitors. Local linkages are limited to a small set of suppliers, and hub firms mainly sell to outside customers. Hub firms create a critical mass of specialized labor and business services, which in turn benefits emerging entrepreneurial firms. Hub firms also can be the incubators of entrepreneurial firms.

The *satellite platform district* describes a region that hosts branch facilities of externally based firms. In the United States, examples of this type of district include the Research Triangle Park in North Carolina and Elkhart, Indiana (Markusen et al. 1999). The Research Triangle Park started when R&D branch plants of IBM and the National Health Institutes located in the region. The success of the satellite platform district depends on the decisions made at the headquarters of the branch plants. Branch plant facilities generally do not engage in connections or networks with other firms in the region. Over time, however, the satellite platform may evolve through the attraction of suppliers or other firms, and entrepreneurial activity may increase. This was the case, for example, in the French region Sophia Antipolis, where the district evolved from one characterized by unconnected branch facilities to one more cooperative and entrepreneurial (Longhi, 1999).

The third model is called the *state-anchored industrial district* and it describes regions that benefit from the location of a public institution such as a military base or major university. Colorado Springs is a good example of a state-anchored industrial district because the region benefitted from the location of a number of military facilities (an army base, air force facility, and the Air Force Academy). Regions with large universities also may fall into this category. Examples include Boulder, Colo., Austin, Tex., or Ann Arbor, Mich. The state-anchored industrial districts benefit from, but also depend on, public investments. A supplier industry might develop around the state anchors, but entrepreneurship does not play a large role unless technology transfer activities (in the case of regions with major universities) facilitate new firm creation.

The Silicon Valley model should be viewed as the exception, according to Markusen et al. (1999, 40), who argue that “most rapidly growing metropolitan areas owe their performance to hub firms or industries, satellite platforms, state anchors, or some combination thereof.” Thus, analyses of second-tier regions have to pay attention to these different models. In addition, regional economies may function according to a mix of these idealized types. In Kansas City, for example, firms like Marion Laboratories, Sprint, or Cerner may have functioned or may still function as hub firms. Yet the successor firms of Marion Laboratories that still are present in Kansas City (i.e.

Quintiles) are branch operations of firms headquartered elsewhere, and may function as anchors of an economy that now is more characterized by a satellite platform.

### ***Evolution of second-tier regions***

A question of interest to scholars and policymakers relates to the ability of second-tier regions to evolve and maintain their development dynamics. Markusen et al. (1999) note that districts can evolve from one type to another. For example, a state-anchored district could attract new hub firms and evolve into a hub-and-spoke district. Alternatively, a hub-and-spoke district may evolve into a more Marshallian-type district if it loses its hub firm and if entrepreneurial firm formation processes take root.

One aspect critical to the evolution of a second-tier region is the necessary change from an inert to an active entrepreneurial system (Feldman, 2001). Thus, a formerly sparse environment for entrepreneurship becomes munificent if there are forces that encourage new firm formation (Dubini, 1989). What factors can contribute to changing the entrepreneurial environment? According to Feldman (2001), the region must provide opportunities for individuals to recognize the entrepreneurial potential and act upon it. Individuals in the region must decide to engage in the formation of a company. Such a decision may also be referred to as the entrepreneurial event (Shaper, 1984). If such entrepreneurial events take place repeatedly, and if an entrepreneurial support system starts to emerge, second-tier regions like Kansas City can accumulate entrepreneurship capital. Audretsch and Keilbach (2004) describe entrepreneurship capital as follows:

By entrepreneurship capital of an economy or a society we mean a regional milieu of agents that is conducive to the creation of new firms. This involves a number of aspects such as social acceptance of entrepreneurial behavior but of course also individuals who are willing to deal with the risk of creating new firms and the activity of bankers and venture capital agents that are willing to share risks and benefits involved. Hence, entrepreneurship capital reflects a number of different legal, institutional, and social factors and forces. Taken together, these factors and forces constitute the entrepreneurship capital of an economy, which creates a capacity for entrepreneurial activity.

In second-tier regions, the formation of entrepreneurship capital is facilitated by the presence of large anchor firms, branch plants, or state anchors. There are several regions that have utilized the presence of large firms in the creation of a more networked, entrepreneurial economy (Mayer, 2009): in Portland, for example, a leading firm in the test and measurement market (Tektronix) was the source of many spin-offs. Highly skilled and capable employees left Tektronix, especially in the 1980s and 1990s, because the firm went through corporate crisis, downsizing, and reorientation. They founded many new ventures, which in turn shaped the region's high-tech specialization. In Boise, Hewlett-Packard established a branch operation in the late 1970s. Over the years, HP contributed to the region's emergence as a second-tier region through spin-off processes. However, the extent to which large firms, branch plants, or state anchors facilitate entrepreneurship in second-tier regions depends on a variety of factors, including the sector, the culture of the institutions, regulations such as noncompete enforcements, and corporate changes that take place.

### ***Limiting Factors of Second Tier Regions That Hinder Entrepreneurship***

Second-tier regions face a number of challenges when it comes to building this entrepreneurship capital. Similar to peripheral and rural regions, these second-tier regions often lag behind core regions in terms of their innovation and entrepreneurial systems. Several authors have described characteristics of peripheral regions (Doloreux & Dionne, 2008; Karlsen, Isaksen, & Spilling, 2011; Lagendijk & Lorentzen, 2007; Tödting & Tripl, 2005), some of which also can help describe the limiting factors second-tier regions are facing.

Peripheral regions show low levels of clustering and they often do not have significant supporting institutions such as universities, entrepreneurial support groups, etc. Tödting and Tripl (2005) refer to such situations as “organizational thinness.” As a result, peripheral regions are less innovative and less dynamic in terms of new firm creation. However, the center-periphery relationship is dynamic, and regions can move between the center and periphery. To do so, they have to overcome some of the implications resulting from the described shortcomings. Like peripheral regions, some second-tier regions also can suffer from organizational thinness. Often, second-tier regions are home to a few anchor institutions such as large firms, branch plants, or public-sector organizations. In some cases, these anchor organizations can induce local clustering. However, if for example large anchor firms are oriented toward external markets (like those firms in a hub-and-spoke industrial district (Markusen, 1996)), their ability to create a local cluster is limited. Low levels of clustering also may imply a lack of interaction and networking among the region’s firms. This is referred to as “fragmentation” of the regional system (Tödting & Tripl, 2005). In second-tier regions, networks between smaller entrepreneurial firms and large corporations may be weak and characterized by fragmentation.

Weak clustering and thin institutional environments influence entrepreneurship dynamics. If there are only a few large firms, they may be able to act as incubators for spin-offs. However, the region heavily relies on a small set of firms that are critical as sources of entrepreneurship. Such reliance can create vulnerable situations, particularly when the large firms cease to play the role of incubators due to corporate changes. In addition, second-tier or peripheral regions often specialize in more traditional industries with little cutting-edge R&D and innovation activities (Tödting & Tripl, 2005). Tödting and Tripl (2005, 1210) argue that the “emphasis is on incremental innovation and on process innovation.” This in turn may also impact the levels of entrepreneurship.

Second-tier regions also face difficulties in accessing venture financing. Entrepreneurs in second-tier regions must convince investors not located in the region of their ventures’ viability. Prominent venture capitalists often are located in core regions and tend to invest their funds locally (Kenney & Florida, 2000). Oversight and engagement of venture capitalists often requires close physical proximity and second-tier regions might be at a disadvantage because they are not the central location of the venture capital industry. Factoring against second-tier regions are the lack of local funders and the tendency of outside investors to be cautious about investments outside their home market.

Second-tier regions also may lack entrepreneurship capital. In particular, fewer individuals may exist who can play a critical role as dealmakers in the entrepreneurial economy. Feldman and Zoller (2012) define dealmakers as “individuals with valuable social capital, who have deep fiduciary ties within regional economies and act in the role of mediating relationships, making connections and facilitating new firm formation” (p. 24). Because social capital is an important component of an active entrepreneurial system, a region’s ability to leverage dealmakers is important. In core regions such as Silicon Valley and Boston, dealmakers are well networked with each other in one primary network. “In less developed economies, the dealmaker networks are not commonly connected and are often split into many firm-actor sub-networks” (Feldman and Zoller 2012, 34). Second-tier regions like Kansas City may be characterized by fragmented dealmaker networks.

The same may be the case for the entrepreneurial support system. Mayer (2011) notes that second-tier regions might be characterized by fragmented entrepreneurial support systems if they do not succeed in shifting toward entrepreneurial embeddedness. In addition, second-tier regions may not show high levels of entrepreneurial recycling. Mason and Harrison (2006) note that acquisitions and mergers can trigger the process of entrepreneurial recycling “in which the entrepreneurial team typically leave their company either immediately or soon after the sale and channel a proportion of their newly acquired wealth and time as well as their accumulated experience into other, often multiple, entrepreneurial activities with clear economic benefits” (p.58). Entrepreneurial recycling features prominently in Silicon Valley, where even high failure rates trigger new firm creation and “repeat” entrepreneurs continuously create new things (Bahrami & Evans, 1995). Entrepreneurial recycling is facilitated by a supportive culture that is accepting of failure and sees in entrepreneurship a viable career option.

Table 1 highlights several characteristics of the entrepreneurial dynamics of second-tier regions.

**Table 1: Entrepreneurial Characteristics of Second Tier Regions**

Sources of entrepreneurship	Few large, often prominent firms, branch plants, or state anchors can function as incubators for new ventures. In hub-and-spoke and branch plant districts, universities are less likely to be the source of spin-offs.
Existing large firms	Often the source of entrepreneurial ventures, but often may not be engaged with them (i.e. as customers).
Getting the business started	Entrepreneurs often may bootstrap their firm in a second-tier region because a critical mass of local finance and business services has not yet developed. They often may use formal sources of information and advice instead of informal, localized sources.
Markets and customers	Markets and customers mostly outside the region. Often serendipitous contacts via personal networks, fairs, events, etc. facilitate contact with customers. The first customer may be very important to float the startup.
Innovation	Firms and entrepreneurs may focus primarily on incremental, process innovation; there may be few firms that develop completely radical, new ideas. The development of radical, new ideas also may be confined to hub firms or state anchors.
Agglomeration economies	Second-tier regions do not provide many agglomeration economy advantages due to their limited size. Entrepreneurial firms may have to work hard to access advantages arising from agglomeration economies.
Networks	Second-tier regions may not have strong networks that help entrepreneurs gain access to information and resources. These regions often are characterized by weak clustering (organizational thinness). Personal networks seem to be more important than networks arising from the cluster or agglomeration economies.
Financing	Friends and family often are the most important source for financing the startup in a second-tier region. Institutional capital inside and outside the region may be hard to access.
Entrepreneurial exits	Few entrepreneurial exits are happening, and those that are may receive great recognition. Emerging second-tier regions have entrepreneurs who went through exits and are becoming engaged as investors or mentors.
Regional culture	Low acceptance of entrepreneurship as a career option and less-developed culture of entrepreneurial risk taking. This may change as more entrepreneurs develop their ventures and illustrate how it is possible to take risks.
Entrepreneurial support	Emerging second-tier regions may show many, often unconnected and fragmented efforts to improve the entrepreneurial environment (fragmentation).

Examining the limitation of second-tier regions is important because insights into these limiting factors will help us understand how these regions change and evolve. In particular, the role of large firms, branch facilities, or state anchors as transformative agents is important for the development of second-tier regions. Large firms can function as incubators of spin-off firms. New insights from evolutionary economic geography note that large, dominant firms help facilitate spin-offs, and through this spin-off process specialized clusters can develop (Klepper, 2001a, 2001b). Thus, the relationship between large firms and new firm formation will be key to the evolution of second-tier regions. Second-tier regions also change due to entrepreneurial churning, so entrepreneurial exits and associated reinvestments by cashed-out entrepreneurs may facilitate these regions' development. Examining the ways in which firms, entrepreneurs, and other economic actors such as universities, research institutes, etc. are networked in a second-tier region may also be important. Strong networking and cooperation may facilitate entrepreneurship in these second-tier regions; it also may facilitate access to venture capital and other sources of business information necessary to start and grow a firm. Second-tier regions may also evolve because the entrepreneurial support environment changes and may become more supportive of entrepreneurship. Taken together, these aspects may facilitate a second-tier region's ability to become more entrepreneurial and to change its status in the hierarchy of high-tech regions.

### **3. Kansas City as a Second-Tier Region**

Kansas City can be characterized as a second-tier region as defined by Markusen and DiGiovanna (1999). The regional economy is fairly stable and usually not characterized by great cyclical shifts. In the Kansas City metropolitan region, there are a small number of specialized industry concentrations such as the life sciences industry, which includes firms specialized in drug development, diagnostics, clinical research, and animal health. The region is home to about 200 life sciences companies (Kansas City Area Life Sciences Institute, 2009) and it ranks among the top fifteen metropolitan areas with the highest concentration of contract research organizations (Getz, et al., 2012). Its animal health firms account for nearly 32 percent of total sales in the \$19 billion global animal health market (Animal Health Corridor, 2012). Besides life sciences, Kansas City hosts a set of information technology (IT) firms known beyond its borders: Sprint Nextel is a global leader in wireless telecommunication, Cerner is an internationally known health care information technology firm, and Garmin produces global positioning systems. Other significant concentrations include engineering firms such as Black & Veatch and Burns & McDonnell. Yet, as Table 2 highlights, Kansas City ranks behind such high-tech centers as Silicon Valley or Boston, and the region is less specialized than other second-tier regions such as Portland or Boise.

**Table 2: Comparison of High-Tech Regions**

	<b>Portland</b>	<b>Boise</b>	<b>Kansas City</b>	<b>San Francisco &amp; San Jose</b>	<b>Boston</b>
<b>High-Tech Industry</b>					
High-Tech Employment, 2005	58,646	18,969	49,918	375,413	218,392
Number of High-Tech Firms, 2005	5,614	1,335	4,850	23,003	14,357
Location Quotient, 2005	1.35	1.76	1.14	3.27	1.96
<b>Entrepreneurship</b>					
Total Number of High-Tech Firm Births, 1998–2000	24	23	71	622	297
Venture Capital Deals per 1,000 People, 2000–2005	6.2	1.0	2.2	58.1	35.5
<b>Innovation &amp; Research</b>					
Total Industry R&D Funding, \$M, 2000–2005	\$2,087	\$506	\$662	\$44,862	\$26,422
Total University R&D Funding, \$M, 2000–2005	\$123	\$42	\$163	\$10,480	\$7,930
Patents per 1,000 People, 1990–1999	260	241	40	2,126	223

Source: Mayer (2009). Specific sources are County Business Patterns, U.S. Census; Small Business Administration; National Science Foundation; and the U.S. Patent and Trademark Office. The data was compiled for the respective metropolitan statistical areas.

Yet Kansas City is a good case that allows us to examine the role of large firms, the ways in which large firms contribute to entrepreneurship and connect with new firms, and the ways in which entrepreneurial processes evolve and are supported. Here, a focus on major companies that either played a role in the past or still are present in the region will be important. The following analysis will pay attention to past and present large employers such as Marion Laboratories, Sprint, Cerner, and the Stowers Institute of Medical Research. The firms were selected because data collected in the 2006 study point to their critical role as anchor institutions for their respective sectors.

#### **4. Research Questions and Methodology**

This paper is a continuation of a research effort that began in 2005 when I started to study Kansas City as a second-tier region. From 2005–7, I conducted in-depth interviews with thirty-two entrepreneurs, policymakers, and industry experts in Kansas City. This past research focused on the role of large firms and research institutions as

sources for entrepreneurship and the characteristics of the entrepreneurial milieu. Key findings of this research (Mayer, 2006, 2007, 2009, 2011) included supporting evidence about the key role of Marion Laboratories as the source of about sixteen spin-off firms mainly in life sciences and its role in the development of a specialized labor pool. The interviews also highlighted the limited role of other firms and institutions such as the Stowers Institute, Sprint, Cerner, and Garmin. Interviewees agreed on the significant shortcomings in the entrepreneurial support system (particularly with regard to venture financing, the lack of clustering and networking, etc.), yet also the region's potential in the life sciences industries. An interesting finding at the time was the resolute but often unconnected efforts with which local policymakers and entrepreneurs tried to improve the region's entrepreneurial environment.

In June 2012, seven years after conducting these first interviews, I went back to Kansas City to conduct additional interviews about the ways in which the region has changed. The research presented in this paper draws on twenty in-depth interviews with entrepreneurs, venture capitalists, and entrepreneurial support organization representatives. Of the twenty interviews, twelve were with entrepreneurs who either were successful in raising venture capital funds between 2005 and 2011 or who were listed on the Inc. 500 or Inc. 5000 lists. Some of the entrepreneurs also were participants in a regional entrepreneurial support and mentoring program called Pipeline. Two interviews were with venture capitalists, one was with a representative of a major research institution, and five were with representatives from entrepreneurial support organizations. The latter group has a good perspective as regional experts knowledgeable about the region's innovation and entrepreneurship support environment. The entrepreneurs who were interviewed all were founders of their firms and represent the life sciences and information technology industries. We excluded the animal health, plant and crop sciences firms because many are large multinational corporations, and the geographic focus of this cluster is in a small community north of Kansas City (St. Joseph, Mo.). It is important to note that twenty interviews give limited insights into the broader entrepreneurial community. However, since the entrepreneurs represent firms that have shown some kind of success (either through receiving venture and/or angel investments, and/or being on the *Inc.* lists), I believe their opinions provide interesting and relevant insights into questions about high-risk entrepreneurial development in a second-tier region.

The interviews lasted between forty-seven and eighty-six minutes and were recorded and transcribed. The interview questions covered a range of topics particularly in regard to the entrepreneurs' motivations for starting their firms, and their backgrounds as they relate to their firms' location in Kansas City. In addition, the interview questionnaire included a question about collaboration and business partners within Kansas City and outside the region, the ways in which Kansas City as a second-tier location helps or hinders their business, perceptions about changes in the entrepreneurial environment, reasons for these changes, and challenges and opportunities for Kansas City as a second-tier region. Additional information from corporate reports, websites, industry information, and data about the region's life sciences and high-tech industries complement the qualitative data.

The results presented are limited by a few methodological considerations. I only interviewed fairly successful, established entrepreneurs who were (despite their second-tier location) able to raise venture capital or grow their firm to be included on the *Inc.* lists. Such a focus may introduce a bias in the results because I did not include more nascent entrepreneurs who have not been able to raise venture capital or grow their firm to receive national attention. In addition, I only conducted twenty interviews. The small number of interviews may limit the ability to generalize the results. I did not interview representatives at the large firms (Sprint, Cerner, Garmin, etc.). However, I chose to focus the methodology in this way because I wanted to assess whether Kansas City has been able to develop a more supportive entrepreneurial environment. Successful entrepreneurs can be considered the pioneers in a second-tier region, and their insights may help us understand what it takes to start a firm and to successfully grow it. These firm founders represent the region's entrepreneurship capital.

An important focus of the study was on the role of large firms in facilitating entrepreneurial spin-offs and in networking with existing entrepreneurial ventures. This analysis is limited because of the nature of a small qualitative sample. A more systematic analysis of the genealogy of entrepreneurial firms in the Kansas City region is necessary, not only to examine the extent to which large firms played a role as incubators, but also to find out more about the phases in which these firms may have helped seed startup activity. In addition, a more in-depth analysis of the culture and structure of these large firms and the institutional environment (i.e. noncompetitive regulations, etc.) is necessary.

The following sections present general trends and common themes that emerged in all interviews, which is also an indicator of their validity.

## **5. Analysis of Qualitative Data**

### **5.1 The Role of Large Firms in the Entrepreneurial Economy**

#### ***Large Firms Do Not Feed the Entrepreneurial Pipeline***

Kansas City emerged as a second-tier high-tech and life sciences region because of the presence of a number of large firms (Mayer, 2006). The region has a tradition of successfully growing big companies such as Hallmark Cards, KC Southern, H&R Block, DST, Tension Envelopes, etc. So the region has traditionally been home to successful entrepreneurs who can grow large companies in various sectors.

In particular, the region's life sciences industry started in 1950 with the founding of Marion Laboratories, a firm that specialized in bringing pharmaceutical products through the regulatory approval process and into the market. Kansas City is also home to internationally known technology and telecommunications firms such as Cerner, Garmin, and Sprint. Marion functioned as an incubator of spin-off firms, particularly in the 1980s and early 2000s. Yet other large firms did not influence entrepreneurial firm formation. As a result, unlike in other second-tier high-tech regions where such large, innovative, and often industry- or market-dominant firms facilitate continued economic

development through spin-offs (Mayer, 2011), Kansas City has not benefitted much from their influence on regional entrepreneurial dynamics.

The research suggests that large firms in Kansas City do not spur entrepreneurial activity. Interview partners noted that these firms neither are the major source of spin-offs, nor do they have a culture that would facilitate entrepreneurship:

*I wouldn't say any of those are generating a lot of entrepreneurial activity.*  
(Entrepreneurial Support Organization Manager 5)

*These big companies are not going to have a culture of 'hey join us, learn a ton' and you will start and leave.* (Venture Capitalist 2)

When asked about the track record of the large firms as incubators for spin-offs, the interview partners could only think of a handful of spin-offs that emerged from Kansas City's large firms (e.g. Mobile Symmetry from Sprint, OsteoGeneX from Stowers, or BATS from Cerner). While this question needs further systematic investigation, we can note that with the exception of Marion Laboratories, firms like Cerner, Garmin, Sprint, or research organizations like the Stowers Institute do not play a significant role in feeding Kansas City's entrepreneurial pipeline. Successful high-tech regions such as Silicon Valley or Seattle, however, and also other second-tier regions like Portland, illustrate how large firms can be the wellspring of entrepreneurial activity (Brittain & Freeman, 1986; Mayer, 2012b). Large firms can function as incubators for spin-offs, and clusters often form through these spin-off processes (Klepper, 2001a, 2001b, 2009). Yet, in Kansas City, spin-offs originating from large firms seem to happen only sporadically and in limited ways.

The track record of the select number of large firms illustrates their limited importance, as will be outlined in the following. Some spin-off activity originated with Marion Laboratories. In the decades following its founding, Marion experienced successful growth and diversification through acquisitions of related companies. During the 1970s, however, the firm's performance declined and it started to divest non-core business units. During the 1980s and 1990s, several mergers, acquisitions, and divestitures took place.<sup>2</sup> As a leader in drug development, Marion Laboratories attracted talented employees who developed specialized expertise in drug development and testing, regulatory approval, and market research, and who in turn discovered entrepreneurial opportunities. From 1950 until 2005, about sixteen spin-offs were founded by employees of Marion Labs or its successor companies (Mayer, 2006, 2011). Some interviewees highlighted the important role Marion Laboratories played in terms of creating spin-offs, but they also emphasized that this wellspring of entrepreneurial

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<sup>2</sup> In 1989, Marion Laboratories merged with Dow Chemical to form Marion Merrell Dow, and in 1995 it was acquired by Hoechst to become Hoechst Marion Roussel. In 1998, the North Carolina-based company Quintiles Transnational bought the drug development and approval operation of Hoechst Marion Roussel. In 1999, Hoechst merged with Rhone-Poulenc to form Aventis. What is left of Marion Laboratories are the divisions operated by Quintiles and by Sanofi-Aventis, which together employ about 1,175 people (950 at Quintiles and 225 at Sanofi-Aventis). Sanofi-Aventis eventually will close its operation in Kansas City by 2016.

activity has not continued through today with its successor firms and might not in the future. Specifically, Marion's impact on entrepreneurship in the region was strongest during the 1980s and during the early 2000s. Today, the successor firms of Marion Laboratories do not play a role in facilitating new firm creation. The following comment alludes to Marion's importance, but also to its decline and the role entrepreneurial support networks like Pipeline play today compared to large firms:

*I do think the single largest, the single most powerful entrepreneurial legacy in the city is Marion, but I would say that the second largest and probably soon-to-be more important one is the Pipeline network. (Life Sciences Entrepreneur 3)*

While the entrepreneurs who started the Marion-related spin-offs were able to use business expertise they gained while working at Marion Laboratories, their entrepreneurial efforts to start new ventures either took place outside the region or in a Kansas City-specific environment that was not well endowed with factors in support of entrepreneurship, as one interviewee noted:

*What is missing and what is really a shame is that Marion Labs created, I call it the Microsoft events. If you look around the parking lot of Microsoft in Seattle, [you see] all these really nice cars because half the people in the company are millionaires. Marion Labs had that. Unfortunately, it was almost too early. We weren't ready for it. Right? Ewing Kaufman did too good a job in making that happen. So it is amazing, you will still find Marion people, but they are scattered all over the country. So when they came out, and let's say somebody had an idea and wanted to make something happen, [they] struggled for years to get enough funding and how [they have] been able to keep that going is a miracle. (Venture Capitalist 2)*

Yet Marion Laboratories left a mark on the region's entrepreneurial community. Life sciences firms such as ImmunoGenetix, RxCCI, CyDex, and Medi-Flex (since 2006 known as Enturia) were successfully started by former Marion employees and therefore have their genealogical roots in the Marion Laboratories. With the establishment of the Stowers Institute for Medical Research in 2000, policymakers and industry representatives hoped to reenergize the region's life sciences industry. However, with its focus on "basic biomedical research in genetic model organisms as a way to understand the molecular mechanisms underlying human health and disease" (Stowers Institute for Medical Research, 2012), Stowers is not oriented toward producing entrepreneurs and spin-offs—something that also was lamented by various interview partners. A few firms were founded by scientists working for Stowers, but these firms were created not because Stowers is actively supporting entrepreneurship but because Stowers' culture seems not to allow the simultaneous pursuit of basic research and commercialization through spin-offs and therefore pushed those interested in pursuing an entrepreneurial career outside the organization:

*[They] came out of Stowers. But [they] had to come out to get anything done ... [they] had to spin out, it was in spite of Stowers. That one [Stowers] isn't doing anything. The universities are trying to do better. (Entrepreneurial Support Organization Manager 5)*

Among the technology and telecommunications firms in Kansas City, Cerner, Garmin, and Sprint stand out as large and relatively dominant firms in their respective sectors. Interviewees agreed that these firms have a limited track record in spinning off entrepreneurial ventures and mentioned only a few examples (i.e. Tradebot Systems as a successful venture developed by a former Cerner employee). Local venture capitalists interviewed for this research have not had much contact with employees from these large firms who are interested in starting an entrepreneurial venture, as the following quote illustrates:

*Garmin. [...] The number of people I know from Garmin? I know no one. Not one. There was a guy that moved here three years ago and he connected with me because he was going to Kellogg. ... Garmin started off way too late. [...] [E]ven though I liked this guy, I didn't think it was going to be that successful. But he is the only guy that ever called me from Garmin. It is not that, I know no one else. I never see these guys out. I don't know anything about what they are doing. I've never seen them in the community. (Venture Capitalist 2)*

Kansas City's large and dominant firms do not play an important role as incubators of startups. A few employees of these large firms have started entrepreneurial ventures, but one cannot speak of a continuous pipeline of entrepreneurs originating from these firms that would fuel Kansas City's startup community.

### ***Large Firms as Stable and Successful Employers***

What are the reasons why these large firms do not play an important role as incubators? Firms like Sprint, Cerner, and Garmin seem to offer their employees a stable and secure work environment. With the exception of Sprint, the large IT firms have not undergone major corporate restructuring or crises, and firms like Cerner provide an exciting work environment where talented employees can grow and develop. Large firms provide their employees good development opportunities, which in turn limit the negative push effects that often motivate employees to leave their firm and start their own business. Large firms also seem not to proactively support spin-off activity. This would not be in their interest because spinning off a firm generally might imply the loss of capacities and ideas. These specific firm characteristics may play a role in explaining limited entrepreneurial dynamics around large firms.

*But I would say we do see individuals that leave those companies, wanting to do something on their own, but it is not intentional. There is nothing programmatic about it, there is nothing that's designed. It is all ad hoc and it is generally somebody who comes out of Sprint at forty-five or fifty. Where else am I going to get a job that pays like Sprint, nowhere in the region! So I either leave or maybe I will hang a shingle out and do some consulting or some contracting or maybe I can get a few people together, my friends, and maybe we can figure out something to do. So we had a few of those. ... But Sprint pays well and you get a lot of good training at Sprint, they move you around and you learn a lot of different things. So if you are anybody that stays there for any period of time, as far as I can tell, you get a lot of experience, project management, they might move you into finance, they might move over here to operations and products, so you get a lot of different perspectives. (Entrepreneurial Support Organization Manager 5)*

Large firms like Cerner also are exciting work environments because they are growing and are in fields that offer plenty of opportunities, as the following quote suggests:

*Cerner is there, they are growing so much now that healthcare is changing. It's helping their business and they are expanding and growing and they are developing their own people and are keeping many of them.*

(Entrepreneurial Support Organization Manager 5)

Entrepreneurial dynamics in the form of spin-offs from large firms seem to be limited during times of stable and growing development. Data about spin-offs in the Seattle region illustrate, for example, that spin-off activity emerging from Amazon.com was limited during times of growth and only started to pick up speed when the company became profitable (Mayer, 2012a). Corporate crises and changes facilitate spin-off activity (Neck, Meyer, Cohen, & Corbett, 2004) as we noted for the case of Marion Labs. For telecommunications and technology firms like Sprint, Cerner, and Garmin, corporate development seems to retain potential employees inside their own organizational boundaries.

### ***Benefits from the Presence of Large Firms***

Interviewees noted a few benefits that arise from the presence of large hub firms. One important benefit large firms offer a region like Kansas City is related to human capital. Large, successful firms and research organizations attract and develop skilled talent. Start-up firms benefit from the specialized labor pool created by these large firms and organizations. This becomes obvious when we consider the following story conveyed by a life sciences entrepreneur: when the startup presented a drug they developed in Kansas City to a global pharmaceutical company, the company's CEO became angry because his staff had tried to develop a similar type of drug for years and he could not believe how a small startup from Kansas City with only four scientific staff could develop such a product. The entrepreneur explained that the scientific staff working on the development was top-notch because they had been recruited from the Stowers Institute:

*Three of the four scientists were from Stowers. ... Two were Stowers post-docs, who were finishing, so they came to Kansas City to do a post-doc at Stowers, you know world class scientists. They liked Kansas City and wanted to stay. And one was a trailing spouse of a Stowers member. So three of the four scientists were affiliated with Stowers. So that helped really [our company] at the time. Stowers never directly helped us in any way and we never had any formal relationship with them but we needed a small high-quality scientific team and every year they graduate all these post docs and unfortunately a lot of them leave Kansas City because there aren't enough biotech jobs, but all of them, if [this large pharmaceutical firm] buys [our company] ... each of those four scientists will be millionaires, which is great. (Life Sciences Entrepreneur 3)*

Large firms attract and develop talent, which can be accessed by local startups. Once this talent is recruited to a second-tier region like Kansas City, the likelihood of retaining these talented people is much greater, as the following quote suggests:

*I think there is talent here. And I think that having companies like Cerner and Sprint and Adknowledge and H&R Block, they are cranking out good people. And they do a good job training people. First of all, they hire smart people and then they do the job training so that's really kind of the training ground for many people that can come here. ... Then you get them and one of the good things is that they don't leave, they don't job hunt that much. (Technology Entrepreneur 8)*

However, the creation of a specialized labor pool by these large firms and research organizations is a double-edged sword. Some interviewees lamented the fact that a great amount of talent (technical, managerial, sales, etc.) seems to be stuck inside these large organizations and therefore is not available to entrepreneurial startups. This in turn may be related to the sentiment of interviewees that there is a significant lack of skilled talent in the region, particularly talent able to execute business ideas and develop technical products (i.e. sales managers, software developers, etc.).

### ***Interactions Between Large Firms and Entrepreneurial Startups***

Some of the quotes cited above, however, also allude to the theme of networking and collaboration among startups and large firms. Many interview partners noted that Kansas City's large firms and organizations do not cooperate much with entrepreneurial startups:

*... None of the big corporations in Kansas City seemed to be willing to do business with startups. (Technology Entrepreneur 9)*

This may be the case for several reasons. The region's large firms often do not know or are not aware of the capacities and potential of local startups. In other cases, large firms also might be skeptical of local startups' capacity, as the following example suggests:

*So I think that [the] Sprint relationship is really important for us and just generally in a smaller market, in a secondary market, the fact that Sprint is here. There is a little bit a double-edged sword because at times we've gone in to Sprint and say 'hey this is the best thing for you' and they say, 'how can that be, you are from Kansas City!' You know, we want work with the Silicon Valley, or whatever. So it's a little bit, well that's too convenient, you know, you better look around a little bit more. (Technology Entrepreneur 8)*

Yet individual examples of successful cooperation highlight the positive aspects of networking. As the following quote from a technology entrepreneur suggests, there is great potential for startups in connecting with the region's large firms:

*Sprint was of course the natural customer for what we were trying to build. We didn't build [our product] for Sprint, but we really thought that Sprint is what can make it successful and we were right. Once Sprint picked it up we had millions of customers, and we really, really did well. So we persuaded Sprint as a partner to distribute our product and then over the years, that was starting in 2003–2004, over the years, you know we just have built so many relationships with Sprint. So right now my CEO is an ex-Sprint guy, my CFO is an ex-Sprint guy, the president of [name of division], which is our new social media division, was at Sprint at one point. So a lot of guys that—and that*

*might seem odd, but actually in Kansas City it's not, because those are the guys who have the wireless experience. ... So Sprint is great training ground for people.*  
(Technology Entrepreneur 8)

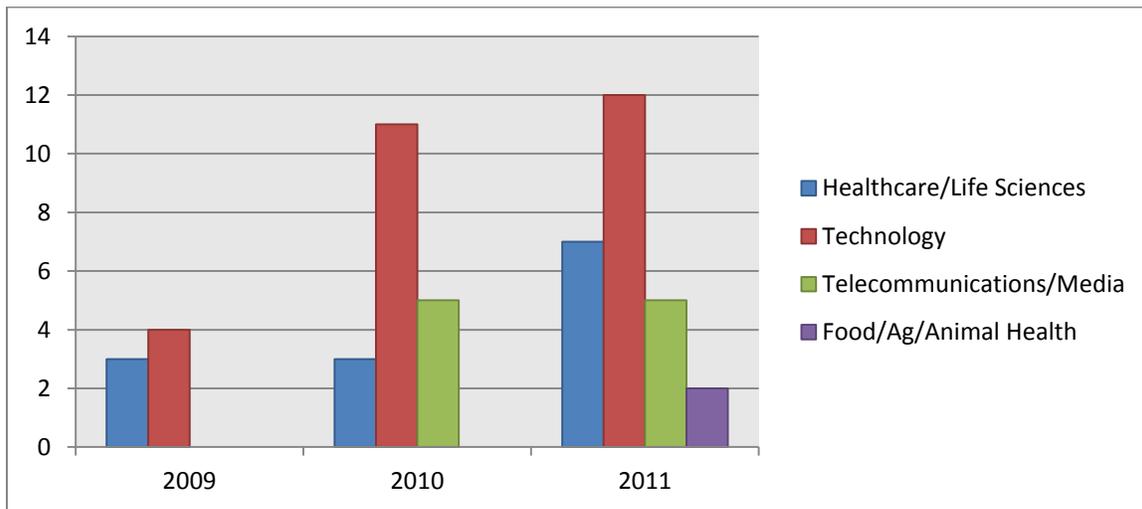
Apart from Marion Laboratories' role as an incubator of spin-offs, the role of large firms in the Kansas City entrepreneurial community is limited. Large firms do not spin-off many startups. They also cooperate and connect with the local startup community only sporadically. Business relationships between local startups and large firms like Sprint, Cerner, Garmin, etc. seem to develop by coincidence. The large firms therefore do not function as focal points (Menzel & Fornahl, 2009) in Kansas City's emerging industry clusters.

## **5.2 Entrepreneurial Recycling**

Corporate changes such as mergers and acquisitions can trigger a process of "entrepreneurial recycling" (Mason & Harrison, 2006). After an exit, entrepreneurs may use the financial resources they gained to start new firms or invest in existing startups. Some scholars also have argued that they become engaged in a variety of ways in the entrepreneurial community and share their experience and expertise with other entrepreneurs (Bahrami & Evans, 1995; Feldman, Francis, & Bercovitz, 2005; Mason & Harrison, 2006). Regions—particularly economically lagging or second-tier regions—may benefit from entrepreneurial recycling through either the addition of new startups or activities that help strengthen the entrepreneurial support system (which may lead to "institutional thickness," see Keeble 2000).

Data about mergers and acquisitions (M&A) in health care and life sciences, technology, telecommunications, and media, as well as animal health-related sectors, show that M&A activity in Kansas City substantially increased between 2009 and 2011 (see fig. 1). In 2009, only seven mergers and acquisitions took place. By 2011, this number had increased to twenty-six.

**Fig. 1: Number of Mergers and Acquisitions by Sector in Kansas City, 2009–11**



Source: CC Capital Advisors (2009, 2010, 2011).

Note: Data for 2012 is still incomplete and not included in this figure.

Interview partners confirmed this trend and spoke positively about the role of entrepreneurial recycling:

*Certainly, there have been some exits in Kansas City. So, there is some money that is recirculating.* (Entrepreneurial Support Organization Manager 5)

*There are a lot of exits that occur under the radar from the national scene, guys who made a lot of money, right now. We don't have the Facebooks, but we had a dozen guys selling 100 million dollar businesses.* (Technology Entrepreneur 5)

Entrepreneurial exits are well regarded among Kansas City's entrepreneurial community. The majority of the interview partners highlighted the benefits of these exits. In most cases, interview partners were able to recall several entrepreneurs who had sold their companies and who now are reinvesting their funds, starting new companies, and/or becoming engaged in entrepreneurial support initiatives. Examples that were mentioned included firms like Archer Technologies, VinSolutions, and Zave Networks in the information technology sector and Medi-Flex in life sciences.

### ***Recycling Capital and Investing in Subsequent Ventures and Raising Funds***

Entrepreneurial exits do not weaken the Kansas City economy through, for example, a takeover by a nonlocal firm. Instead, these exits can spur regional development through reinvestments of the newly acquired wealth in new ventures. Through the financial resources entrepreneurs gain, they are able to engage in new business activity and may even become serial entrepreneurs:

*We used our severance basically to get the company started and then we subsequently have raised 5.375 million of financing.* (Life Sciences Entrepreneur 3)

Such serial entrepreneurs also are more likely to raise additional funds from investors:

*It's been a lot easier to raise money having [our previous venture] be perceived as a success, although we have not seen the phase two data and therefore we don't know whether [our company will be acquired]. It's widely perceived as a success. And so being a serial entrepreneur has made it easier to raise money, people have some trust in you, and they sense you know what you are doing because you have done this before. (Life Sciences Entrepreneur 3)*

A proven track record, which helps raise additional funds, might be more important to entrepreneurs located in second-tier regions as compared to those located in technology centers like Silicon Valley.

### ***Entrepreneurs Who Exit Become Engaged***

A second benefit resulting from entrepreneurial exits relates to the role of the entrepreneur in the community. Mason and Harrison (2006) note that entrepreneurs become engaged in the local community, support the entrepreneurial infrastructure, may endow community activities and institutions, and may invest their time in civic activities. Interview partners perceive that the Kansas City entrepreneurial community benefits from entrepreneurial recycling through these activities:

*So they are going to do their own thing or they try to help somebody else. (Entrepreneurial Support Organization Manager 5)*

Specifically, entrepreneurs have become engaged in initiatives and programs, such as the Pipeline program, aimed at mentoring, networking, and coaching entrepreneurs. Entrepreneurs also have become active in terms of optimizing the state of Kansas' angel tax program by forming an online exchange system that would allow out-of-state investors to benefit from these tax credits. Others have started their own venture capital funds or turned to angel investment groups to reinvest their funds in regional startups.

### ***Entrepreneurial Recycling Is Just Beginning***

While the data shows that entrepreneurial recycling takes place, the process is just beginning.

*I have seen things improve in technology for example in the last you know, I guess fifteen years. ... I don't think we ever going to catch up to California or New York in terms of being a tech hub, I don't think. But if we were to catch up, what [it] is going to require is this very, very slow process of people like me making an exit and reinvesting. And you got to have, and what I'm seeing is the number of successes here, each year, are, you know, few and far between. And so you know, whereas on a daily basis you have got people exiting for fifty [to a] hundred million every day in California and those people reinvesting. You know, there is only one, hundred million dollar plus exit in the tech community here, one every couple years. So I don't even know that all of them have reinvested a lot. (Technology Entrepreneur 9)*

Comparing the Kansas City region to technology centers like Silicon Valley, Boston, or Seattle was a common theme in the interviews. Often interview partners argued that these centers had a much more vigorous entrepreneurial community than Kansas City.

Some interviewees noted that these dynamics have not yet developed in ways that contribute to a critical mass of both engaged and knowledgeable entrepreneurs and startups. One entrepreneur interviewed for this project who received his venture funding from outside investors noted that while Kansas City has a few success stories of entrepreneurial exits, those entrepreneurs who become engaged as angel investors seem to show flaws in their efforts to give back to the community:

*It's completely immature here in Kansas City and I know that what [...] there are some great Kansas City success stories, but what you don't see is them going back to the community or them working with the entrepreneurial community. Some of them will have large exits and then try to be angel investors, but they are not effective angel investors because their nature is to micromanage their investments, just like they micromanaged their companies before. (Technology Entrepreneur 4)*

In sum, the data show that entrepreneurial exits in form of mergers and acquisitions have increased and a small number of cashed-out entrepreneurs are reinvesting their funds and are becoming engaged. However, this process seems to be still in its beginning stages.

### **5.3 Networking and Collaboration**

Second-tier and peripheral regions often suffer from low levels of interactions and weak networks among entrepreneurial actors. Tödting and Trippel (2005) describe how these regions face challenges resulting from the fragmentation of networks and relationships. There might be several reasons why second-tier regions experience fragmentation: the region might not be home to a dynamic industry cluster (Porter, 2000) characterized by extensive supplier-buyer relationships, connections with business support services, presence of strong competitors, etc. Even though the second-tier region might be specialized in certain industries, the firms located there might not practice extensive connections or partnerships with other firms in the region. A second reason why second-tier regions face fragmentation is related to the presence and engagement of research organizations. Second-tier regions may not have strong universities or research institutes. Often these organizations are less specialized and may not have strong relationships with the region's firms and industries. This "thin" institutional environment may limit second-tier regions.

However, research also has shown how second-tier regions have overcome fragmentation. Portland, Oregon, for example, successfully developed specialized high-tech industry clusters because large firms seeded the region with entrepreneurial spin-offs and attracted specialized suppliers and customers. In addition, over time the region's universities and research organizations became more specialized and connected to the region's high-tech industry (Mayer, 2011).

Kansas City's life sciences and technology industries seems to be characterized by weak intraregional networking and collaboration. Interview partners were asked about the extent to which they partner with other firms or research organizations in the region. It was significant that most interviewees hesitated with their answers to this question and did not readily recall a list of firms with which they partner. Also interesting was that the partnerships that were mentioned, often were not the most significant for development of new ideas, innovations, or markets, But rather firms that provided support services (law firms, public relations firms, prototype manufacturing firms, etc.). The following quotes illustrate the nature of local partnerships:

INTERVIEWER: *To what extent do you collaborate with other local companies here in Kansas City?*

TECHNOLOGY ENTREPRENEUR 5: *Not, I mean, in terms of the technology and product, not a whole lot because nobody is really doing exactly what we are doing.*

A similar answer was given in this interview:

INTERVIEWER: *When you think about important partners, who are the most important partners locally?*

TECHNOLOGY ENTREPRENEUR 1: *Hmm. [Long pause]. That's tough. We don't really have a lot of partners, so to speak. We have colleagues that have licensed our software and are now taking it to the market. Part of our strategy is, we want to pick strategic partners that could take our technology out to the market. Feasibility again, nobody knows about [our firm], so I'm not going to get, at least today, it will take a lot of longer to go and spread the word about [our firm], but if I can go partner with Sprint or Amazon or whoever and have them start off our platform then that is a faster result for us, and better and quicker [...] so to that end we have got a partner called [Name of firm], which is a creative agency [...] and so they are strategic partners that's helping us take our platform to those companies. We are working with a company in Australia called [Name of firm] that has 2,000-plus magazine clients and we have been working for long now to integrate our platform with theirs. [...] One of our, one key partner is our hosting provider, they are not in KC, it's a cloud service provider and we picked simply because it's the lowest cost. I can't really think of any other local partners ... it's a tough question.*

The most important partners—those that helped the entrepreneurs with the development of a product or a service—most often were firms not located in the Kansas City region. The types of partners ranged from nonlocal clients that were critical for the development of the product or service to university partners located abroad with whom important research was undertaken. Many entrepreneurs interviewed for this project noted that their customers were located outside the region:

*Actually we have no customers based in Kansas City. We don't have a single customer here.* (Technology Entrepreneur 5)

The interviews indicate that local partnerships are not very extensive and that external relationships play an important role in the development of new ideas, products, or

services. While the literature on clusters has placed great emphasis on the importance of local connections, external relationships were neglected. However, external relationships with sources of new ideas and knowledge are vitally important for the development of a region, particularly a second-tier region. These external relationships represent “global pipelines” to ideas developed elsewhere (Bathelt, Malmberg, & Maskell, 2004). Furthermore, recent research provides evidence of the importance of external relationships to innovation: Rodriguez-Pose and Fitjar present data on innovation processes in Norwegian firms and show that firms with a greater diversity of international partners tend to be more innovative (Fitjar & Rodriguez-Pose, 2011b). Moreover, the same team of authors finds that peripheral regions in Norway can be competitive and innovative if their firms are able to develop connections to international innovative networks (Fitjar & Rodriguez-Pose, 2011a).

#### **5.4 Venture and Angel Capital Community**

Funding and the availability of risk capital were an important topic in the interviews. The majority of the interview partners lamented the limited availability of funding, particularly early-stage capital. This was also an important topic in the research conducted in 2006 (Mayer, 2006, 2009, 2011). Interview partners often compared Kansas City to technology centers like Silicon Valley, Boston, or New York. They noted that Kansas City, as a second-tier location, did not have a financial community with the breadth and depth of these other regions. Some qualified that there is not enough funding for early stage investments and that available funds dried up fast. The following comments highlight these sentiments:

*[...] Some of the hindrances are that there is not as much venture capital or investment funds in Kansas City, than there are maybe in other big markets like that. It's not to say that there is not, there's money out there, but it's obviously less than in Silicon Valley or other places. (Technology Entrepreneur 1)*

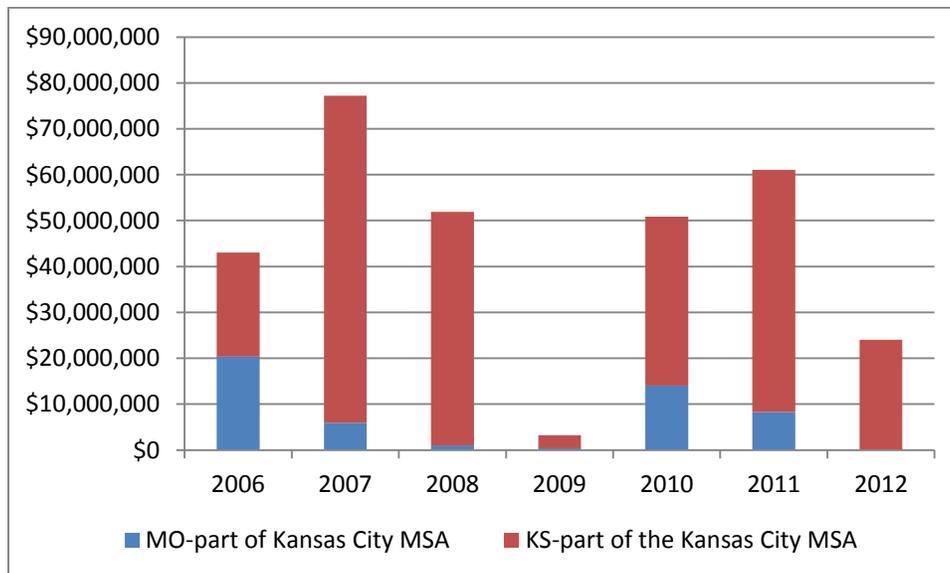
*We don't have as much early stage capital or the culture of early stage capital of some regions in the country. I wouldn't say we are the worst in the country, but I don't think we are the best. (Entrepreneurial Support Organization Manager 5)*

*[...] We had one outside investor really, my partners and me and one outside investor was a financial investor. But we didn't, we invested maybe three million dollars in total, and so then we decided to go out to venture capitalists in 2005 and [the] actually interesting from Kansas City we got no invest[ment] at all. And actually the first time we raised money in 2000 we got no interest in Kansas City, we talked to everybody. There was a, another guy that had actually started on the path together, he was interested in mobile too and we worked together and then he came up with an idea [...] and I just didn't think it was a very good business plan and I said well, so we decided to split. He came out probably six months before us, he started this business six months before I started [our company] so he had pretty much sucked up whatever venture capital there was. (Technology Entrepreneur 8)*

Overall venture capital investments in the state of Kansas grew by 12,1 percent annually in the period from 1995 to 2011 and in the state of Missouri during the same

period by 2.8 percent. After a significant increase during the late-1990s and early-2000s (a period that includes the dot-com-bubble), yearly investments in these states have stabilized. The Kansas City metropolitan statistical area saw venture investments in the amount of \$311,265,600 from 2006 to 2012 (through the third quarter of 2012). Small investment in 2009 shows that the cyclical nature of venture capital investment, which the whole United States experienced in 2009, and such cycle becomes more prevalent in a smaller geographic scale like a single metropolitan area. Overall, venture capital investment in the Kansas City area does not seem to deviate much from the nationwide trend, which has been flat since 2002. At the same time, sudden increase in 2007 indicates that venture capitals do commit large-scale investment when they find opportunities in the region.

**Fig. 2: Venture capital investments in the Kansas City Metropolitan Statistical Area, KS and MO, 2006–2012**



Source: PriceWaterhouseCoopers` MoneyTree database

Note: For 2012, venture investments are counted for first to third quarter of the year.

### ***Second Tier Location Can Be a Hindering Factor in Raising Funds***

The interview partners often noted how being in Kansas City represented a disadvantage to them when it came to finding funding for their ventures. Kansas City-based entrepreneurs interested in raising capital often try to raise capital in other markets. However, they experienced difficulty in convincing outside venture capitalists of their firm’s viability. Often they face a lack of interest or trust that they can grow a firm in a second-tier region like Kansas City:

*For example, we had one venture capital firm who was very interested in the deal and we actually did a presentation with them and somehow they, according to what they said anyway, they said they overlooked the fact that we are in Kansas City and they*

*said, oh, we just realized that you are in Kansas City we can't do a deal with you guys, you know there is no way we could invest in a company in Kansas City. (Technology Entrepreneur 9)*

In addition, local entrepreneurs experience disadvantages because they are offered different, often disadvantageous terms by investors who seem to think a Kansas City-based venture would accept inferior investment conditions. The following quotes highlight these difficulties:

*It is a lot more difficult to get interest, because when people hear Kansas City [...] it is not something on their radar. [...] Then you will meet the people that are kind of focused on this area, [and] then if you listen to them, they want different terms. So that's why their focus is making deals here, and so that puts [us at a] disadvantage and that's what the expectation is. (Life Sciences Entrepreneur 1)*

*So I talked to a few Kansas City investors, and this was after I had already talked to Boston and Silicon Valley investors, and it was a [...] joke, excuse me, but they were cheap, they tried to take too much and they tried to control too much and so I really think that they try to take advantage [...] And so because we actually wanted to, we thought we are a Kansas City company, but the amount of friction that, even the angel investors, that it was. So what we did is we just went on, raced on and we were plugged into the Valley. There were a few angels there [...] and we had a little higher bar being in [a] Kansas City company raising money in the Valley, but they knew our background, they knew the product we were building, they understood our market potential and so it was something that I have done relatively fast. So when I left some room open in our first round for a few Kansas City guys and said, 'Here's your term sheet, this is what it is,' they tried to make changes. [I said,] 'No, I'm not changing anything. This is the Valley guys; this is what I'm doing with the Valley guys, I have opened this up for you. If you [would] like to participate great, if not, go away.' (Technology Entrepreneur 4)*

### ***Investment Community Is Forming***

Traditionally, Kansas City did not have a strong venture and angel capital community. However, since the second half of the 2000s there have been some significant changes, particularly the opening of offices of outside venture capital firms and the founding of local venture capital offices and angel networks (see Table 3). The majority of the venture and angel capital groups formed locally, but some are headquartered in other cities and have opened offices in Kansas City. MPM Capital, for example, is an internationally oriented life-sciences venture capital firm with offices in Boston and San Francisco. In 2010, MPM Capital expanded to Kansas City and renovated a 1920s-era colonial home next to the University of Kansas Hospital. Other startups and entrepreneurial support programs like the Pipeline program are co-located in this building. MPM Capital is building on its track record of investing in local startups and wants to expand into industry sectors such as animal health and crop sciences. MPM is not the only firm from the coasts looking to invest in Kansas City-based companies. The Chicago-based Open Prairie Ventures opened a Kansas City office in 1999, as did San Francisco-based Indie Ventures in 2011. Interviewees highlighted these improvements:

*I think there has been a much better development of organized capital. ... On the venture side, we still have ... well, I was going to say no early stage funding. I would say that you could almost say that. MPM Capital moved into the region with some funding and they have put some dollars into a company called Aratana Therapeutics, which is an early stage animal health company. So, we can't say there is no funding.*  
 (Entrepreneurial Support Organization Manager 5)

**Table 3: Kansas City-Based Investments Offices, 2012**

<b>Name</b>	<b>Type</b>	<b>Year established in KC</b>	<b>HQ location</b>
<b>Kansas Venture Capital</b>	Venture Capital	1977	Leawood, KS
<b>Invest America Venture Capital</b>	Venture Capital	1985	Cedar Rapids, IA
<b>Advantage Capital Partners</b>	Venture Capital	1992	St. Louis, MO
<b>Mid-America Capital Group</b>	Investment Bank	1996	Kansas City, MO
<b>Open Prairie Ventures</b>	Venture Capital	1999	Chicago, IL
<b>October Capital</b>	Venture Capital	1999	Kansas City, MO
<b>BioMed Valley Discoveries</b>	Venture Capital	2001	Kansas City, MO
<b>Midwest Venture Alliance</b>	Venture Capital	2005	Wichita, KS
<b>Mid-America Angels</b>	Angel Network	2006	Lenexa, KS
<b>Centennial Angel Network</b>	Angel Network	2006	Columbia, MO
<b>Mariner Private Equity</b>	Venture Capital	2006	Kansas City, MO
<b>Five Elms Capital</b>	Venture Capital	2006	Kansas City, MO
<b>Angel Capital Group</b>	Angel Network	2007	Nashville, TN
<b>K-State Angels</b>	Angel Network	2008	Manhattan, KS
<b>Women's Capital Connection</b>	Angel Network	2008	Kansas City, MO
<b>Show Me Angels</b>	Angel Network	2008	Lee's Summit, MO
<b>Open Air Equity Partners</b>	Venture Capital	2008	Kansas City, MO
<b>CC Capital Advisors</b>	Venture Capital	2009	Kansas City, MO
<b>Great Range Capital</b>	Venture Capital	2010	Kansas City, MO
<b>MPM Capital</b>	Venture Capital	2010	San Francisco, CA
<b>Indie Ventures</b>	Venture Capital	2011	San Francisco, CA
<b>Archer Foundation</b>	Venture Capital	2012	Overland Park, KS

Source: Various.

In addition, interviewees noted that the region is benefitting from the formation of an active angel investment community:

*We have gotten some angel groups going, which we did not have. There was no organized angel group in 2005 in Kansas City. ... Today there are at least four.* (Entrepreneurial Support Organization Manager 5)

This angel community certainly benefits from the activities of successful entrepreneurs, who are reinvesting their funds in local startups, as one interviewee noted about his own efforts:

*I'm an angel investor in a couple of deals and I'm looking at more. There is a lot of activity, I don't know what it is [...] I was just told by a friend of mine, they were looking at a couple of different deals now and I said it just seems like there is a lot of activity now. Is that because Cerner stock has done well and people at Cerner say 'okay, my options are vested, I will take money off the table and go do my own thing now,' maybe? Or other people that have done a deal, they have been able to exit and now they are saying 'we are going to start another deal.' So there seems to be a lot of activity, which is exciting. So I have hosted a couple of these people coming to me with ideas. It seems like every month I can get several people [saying] 'hey I got this idea, maybe it will fit into your technology.'* (Technology Entrepreneur 6)

These efforts by angel investors are facilitated by the availability of angel tax credits in Kansas. These credits were initiated in 2005. Accredited investors receive a 50 percent tax credit on their cash investments of up to \$50,000 in a certified Kansas business. Interviewees noted that the angel tax credit program was very beneficial to their ventures. It has been used extensively, and local entrepreneurs have created a tax credit transfer system for out-of-state investors. These angel investments often also are used in conjunction with venture capital investments and they help local entrepreneurs leverage larger deals, as the following quote illustrates:

*But so now what you are hearing is, people are talking about going out and getting angel tax credits to spur along their fund-raising and then they go talk to angel investors.* (Venture Capitalist 2)

Despite the presence of more investors, the region still does not have a well-functioning investor network. Interview partners agreed that the capital community is not well connected. Only a few individuals are well connected in terms of their fiduciary ties with local firms, so-called “dealmakers” (Feldman & Zoller, 2012). In addition, the fragmented network also implies that entrepreneurs interested in seeking external funding do not find great diversity in terms of funding types.

*The other thing that is missing here is a capital network. So the angel community, we just recently met and had this discussion. ... I think the capital community is not well connected. ... If you look at Kansas City and the capital funds we have here, at least by stage, the portfolio is pretty—you covered it all. But you can't go more than one deep in any one of those. If you want to do an early stage play that's probably your deepest*

*area. ... So yeah, we are getting broader but still not deep. And that's the problem.* (Venture Capitalist 2)

The fragmented investor community also implies that investments in the form of angel capital might not be leveraged by venture capitalists. The following quote illustrates how a local entrepreneur compares Kansas City's entrepreneurial ecosystem with those of technology centers like Silicon Valley.

*... In lot of cases where you have a tech-hub, there is also some, or nearby, some dominant tech university: Stanford, MIT, you know. They are turning out extremely intelligent people that are creative and you couple that with a giant pool of people that are ready and willing to invest dollars into lots of companies, as angel investors, you know, you really got—and plus then you have the whole ecosystem of venture capital firms that follow those angels and here you just don't have that, there is no connectivity between angels and venture capital. There [are] really no venture capitalists that invest in technology in Kansas City.* (Technology Entrepreneur 9)

In sum, Kansas City still is facing issues with the availability of entrepreneurial funding and the capacity of local investors, even though more venture and angel groups have established a presence in the region. In addition, the region's entrepreneurial community does not exhibit strong networking and collaboration.

## **5.5 Entrepreneurial Culture and Support Infrastructure**

Despite issues around weak capital formation, Kansas City seems to have developed a culture more supportive of entrepreneurial attributes such as risk taking and tolerance of failure. Many interviewees noticed the development of a broader entrepreneurial culture and greater energy around self-employment. They not only mentioned individual entrepreneurs as examples of this culture, but also noticed a general shift in society toward greater acceptance of those who take the risk to become self-employed. Often they mentioned that the Kansas City community seems to exude greater energy around entrepreneurship, which they also attributed to initiatives and programs such as Startup Weekend or the Kauffman Foundation's 1 Million Cups (1MC) that focus on entrepreneurs and their ideas and increase their visibility in the community:

*The energy is stronger now. There is more of an entrepreneurial culture.* (Venture Capitalist 2)

*Well, I think there is a tremendous amount of energy and activity now. There are so many young people that are either starting businesses or interested in starting businesses. They have breakfasts, people just set up this breakfast of like-minded people. Just, you know, thirty-something business people, who are somehow interested in starting. I was a guest at one of them and going around the room, about half have jobs in companies and about half of them start up some kind [of venture] and they are sharing ideas and supporting each other. That is just grassroots. There is nobody, you know, nobody organizing this—people show up and buy breakfast and talk. I think there is a lot going on. So I'm very excited and encouraged.* (Technology Entrepreneur 8)

One interviewee noted that the energy is supported by initiatives such as Startup Weekend and by improvements in the entrepreneurial support infrastructure such as the creation of various incubator facilities:

*But there's a lot of energy, you know, there have been at least four or five Startup Weekends [...]. There have been one or two seed accelerator programs launched. There has also been a whole rash of life science incubation programs that have gotten started. So, the Kansas Bioscience Authority has started a life sciences incubator, [and the] innovation campus of K-State Olathe Innovation Campus has some startup space. KU Lawrence has launched an incubator facility for life sciences companies. KU Med Center has a facility. (Entrepreneurial Support Organization Manager 5)*

The quotes illustrate how interviewees talk about the entrepreneurial culture in Kansas City. They often use dynamic words such as *energy* or *activity* and they highlight the vigor of the entrepreneurial community. In particular, interview partners noticed this entrepreneurial energy in the technology industry, and to some extent in the animal health industry; less so, however, in life sciences.

### ***Good Entrepreneurial Support Environment is Starting to Coalesce***

Kansas City-based entrepreneurs can benefit from a diverse array of entrepreneurial support services. Many organizations provide information and support to those interested in starting a business (i.e. KCSourceLink, Kauffman Laboratories for Enterprise Creation, Pipeline, Startup Weekend, the various incubator facilities, etc.). Previous research (Mayer, 2006), however, highlighted the fragmented nature of these entrepreneurial initiatives. Here, the efforts of the Kauffman Foundation in facilitating the formation and maturation of these networks should be highlighted. Kauffman was able to provide initial funding for some of these efforts, which by now have achieved a critical mass.

Yet some interview partners felt that there are still many, often uncoordinated efforts to help and support entrepreneurs. Some used words like *segregated*, *disconnected*, and *siloed* when they described the entrepreneurial community in general and also, more specifically, the entrepreneurial support infrastructure. They also noted, however, that the entrepreneurial community is starting to become more networked and as a result more cohesive. Some noted that “*the networks are tightening*” (Entrepreneurial Support Organization Manager 1) and others said that “*the networking is getting better*” (Technology Entrepreneur 2). Some attributed these changes to the existence of more initiatives that highlight and network entrepreneurs and to an increase in efforts that bring different parts of the community together. They particularly mentioned initiatives such as the Pipeline program, Startup Weekend, the Greater Kansas City Chamber of Commerce “Big 5” ideas, and the Google Fiber initiative, as well as others.

Interview partners appreciated the excitement around these initiatives and value their contributions. In particular, they value efforts focused on highlighting entrepreneurs and their ideas, which for example is accomplished by the Startup Weekend initiative. They also noted the benefit of networking and bringing people together through programs like Pipeline. Initiatives like Google Fiber or the Big 5 ideas also were mentioned as

opportunities that bring together various constituents of the entrepreneurial community. While Google Fiber was not seen as a critical factor that would improve the bottom line of their business ventures, entrepreneurs mentioned the indirect benefits it would bring to Kansas City's reputation by creating general excitement around technological improvements and investments.

The Pipeline program especially was highlighted by various entrepreneurs interviewed for this research. Several of the interview partners who received external funding went through this program and described their experiences, noting that programs like Pipeline help them become better connected to the entrepreneurial community. These initiatives not only provide informal connections, but also imply tangible benefits such as getting referrals to support services including human resource firms, law firms, or public relations agencies:

*I was green and did not know a lot of people when I started Pipeline. (Technology Entrepreneur 7)*

*I talk to a lot of my Pipeline alumni about little things, you know, how much you pay this type of guy, who is a good accountant? Those kinds of operational things [...]. (Technology Entrepreneur 5)*

One interviewee said that the Pipeline program not only connects entrepreneurs but also helps keep them in the region. He sees the network's potential to increase the region's "stickiness" because those entrepreneurs who are rooted and connected in the business community because of Pipeline may be less likely to leave:

*One of the things I like about the Pipeline network is that it increases the region's stickiness, because if you are leaving your friends and your children's school and maybe your family, that's hard enough, but [...] you [also] are leaving this extended Pipeline business network. I find that the Pipeline folks have stayed around more than I would say a random sampling of unaffiliated entrepreneurs, because you have this extended network and leaving that is hard. (Life Sciences Entrepreneur 3)*

Pipeline also encourages entrepreneurs to become active in the community:

INTERVIEWER: *Have you become as a result of Pipeline more active in the community yourself, either maybe through investing in companies or joining whatever groups?*

TECHNOLOGY ENTREPRENEUR 7: *Yes. Yes, there are some very strong relationships I have with Pipeline people. I have not invested in a Pipeline group but I know that others have.*

Kansas City's status as a second-tier region also may help foster connections and networks. Even though interview partners always indicated some envy toward entrepreneurial centers like Silicon Valley or Boston, they also expressed appreciation for Kansas City and entrepreneurial support programs like Pipeline:

*They have [a] lot of resources here in Kansas City. If you have some idea, you have the ECJC—that was a great help. They gave us [a] lot of good advice, a lot of introductions.*

*The Pipeline program was excellent. And it is a smaller community and so it is just two phone calls away to meet just about anybody in town. And you look at the investment community, the kind of business leaders, they are I think very humble, good people. It is way different than on the East or West coast. (Technology Entrepreneur 5)*

Interview partners shared the impression that the entrepreneurial support community is coalescing. However, they also highlighted issues that hinder greater integration and coordination. Several noted problems arising from the bi-state nature of the Kansas City region and the resulting differences in state support for economic development. Another aspect mentioned was the political vagaries that jeopardize state-funded programs. A case in point is the Kansas Technology Enterprise Corporation (KTEC), a state-funded economic development organization, which was dissolved in 2011 and some of its programs folded into the Kansas Department of Commerce. Some interviewees noted that KTEC functioned as an important connector for the diverse array of entrepreneurial support service providers, and that this coordinative role now is missing. KTEC also played an important role in offering funding to technology startups and developing other types of technology-based economic development initiatives. KTEC's story highlights the vulnerable nature of state-supported programs, which often fall prey to political changes. Entrepreneurs interviewed for this project criticized these kinds of uncertainties resulting from the political process:

*The network is dead. We talk to each other, we know each other, but we don't get together. ... KTEC used to facilitate that. [...] Today everybody is looking out for themselves and trying to just salvage what they can get. But nothing has been put in its place, that's my problem. (Entrepreneurial Support Organization Manager 5)*

In sum, the entrepreneurial energy and collective effort to improve the Kansas City entrepreneurial community has increased and strengthened significantly over the past seven years. Various groups and organizations have ensured a thickening of the entrepreneurial support infrastructure through the creation of incubators, establishment of financial incentives to invest in entrepreneurial ventures (i.e. angel tax credits), and adding effective mentoring and networking events. The following quote highlights these changes:

*I find that some of the biggest changes since 2005—you know, when we started really in 2001 [...], there were no incubators, there was no KBA, no Kansas angel tax credits, there were no grants at the Missouri Technology Corporation, there was no Pipeline entrepreneurial fellowship program, there was no Stowers Medical Research Institute. Really the region had a desire, based on the prior Marion experience, to continue to be important in life sciences, but post Marion there was really a period where there just weren't resources either public or private, there were no venture capital firms, there were no angels investor groups, and if you think about all that, so think about what has changed! We now have at least four angel investor groups in the region, we have three venture capital firms. Although Kansas City is not their primary headquarters, there is MPM, there is Cultivian, and there is Open Prairie Ventures, so there are now three VC firms whereas before there were none. There are now KBA-sponsored incubators at the University of Kansas in Kansas City, at the Medical Center Campus, there is an*

*incubator here—this is new. There is [also] an incubator in Lawrence, associated with the University of Kansas. (Life Sciences Entrepreneur 3)*

## 6. Conclusion and Recommendations

The analysis of Kansas City's economy shows that second-tier regions struggle in creating a self-sustaining entrepreneurial community, particularly if they show signs of organizational thinness and fragmentation (Tödtling & Trippel, 2005). Kansas City's life sciences and technology industries initially took root because of the presence of large firms that in turn functioned as incubators for startup companies. In that regard, Kansas City represented a classic hub-and-spoke industrial district. Firms like Marion, Sprint, Garmin, Cerner, etc. did have limited interactions locally, and some had limited influence on the formation of spin-offs. The analysis shows that the role of large firms as incubators has diminished and that connections between existing large firms and entrepreneurial ventures are weak.

Today, however, Kansas City seemed to have changed from a region that is characterized by the hub-and-spoke model where the large firms have limited local connections to one creating nascent entrepreneurship through grassroots efforts to fund and network entrepreneurs. Some entrepreneurs have started to sell their ventures and reinvest in local startups. More venture capital firms are present in the region. Networking and cooperation among innovators and entrepreneurs is increasing. Interviewees positively described the entrepreneurial energy. Despite the fact that the large firms are no longer important drivers, the region is starting to create a development model that does not depend solely on the presence of these hub organizations. Kansas City leaders—including the Kauffman Foundation—need to support this emerging entrepreneurial energy and the efforts that are starting to take place.

If large firms such as Cerner, Garmin, or Sprint, and prominent research organizations like the Stowers Institute, do not produce a critical mass of entrepreneurs who start promising businesses, then the obvious question is where future entrepreneurs will come from. Regional leaders need to consider potential sources of nascent entrepreneurship. Efforts to improve commercialization and technology transfer between universities and industry (i.e. through the Institute for Advanced Medical Innovation or the creation of various incubator facilities at the region's universities) and efforts to bring entrepreneurs together certainly will help. Yet if Kansas City wants to achieve its goal of becoming the most entrepreneurial city in the United States,<sup>3</sup> it needs to ensure a steady supply of budding entrepreneurs, particularly entrepreneurs who can grow organizations that in turn will be the source of future spin-off companies. As mentioned in the beginning of this paper, second-tier regions can follow different models of development. They can utilize large firms, branch facilities, or state anchors. Second-tier regions also can change their development trajectories. For example, if large hub firms do not facilitate spin-off activity anymore, a region would need to focus on other potential sources of entrepreneurship such as universities or smaller, growing firms. In

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<sup>3</sup> This is a goal that was proclaimed in 2011 in the Big 5 ideas initiatives advanced by the Greater Kansas City Chamber of Commerce (see also <http://www.big5kc.com/>).

Kansas City, regional leaders have put great efforts into improving the higher education system. It would be logical to focus efforts on creating entrepreneurial dynamics around the region's universities.

Second, entrepreneurial exits in the form of mergers and acquisitions have increased, and a small number of cashed-out entrepreneurs are reinvesting their funds and becoming engaged in new entrepreneurial ventures. Yet this process seems to be just beginning. Entrepreneurs who have successfully exited have great potential to advance regional economic development. They start new ventures, invest in startups in the region, or become engaged in other forms through, for example, philanthropic efforts or advising entrepreneurs. The region needs to embrace these individuals.

Third, the region's entrepreneurial community does not exhibit strong networking and collaboration. Rather, entrepreneurial ventures and industry connections exist much like "islands of excellence" without strong interconnections. Existing networks need to be strengthened through regular networking activities. In addition, Kansas City does have unique industry specializations (animal health, contract research in life sciences, mobile applications, etc.), yet entrepreneurs in each of these areas rarely interact. There might be great potential to create innovative synergies if networking and collaboration are increased across sectors. One example that has created successful networking among universities, research institutes, and a variety of industries is the Oregon Nanoscience and Microtechnologies Institute (ONAMI). ONAMI is Oregon's first signature research center, and is supported by the state. The center has been successful at networking the various universities with industry partners through shared user facilities, commercialization gap funds, and signature researchers (S. Martin, 2008; O'Connor, Wood, & Walls, 2008). Key to successful networking was the involvement of various public and private partners and the opportunities the center provides for developing new ideas and research fields.

Fourth, although the availability of funding has increased, local entrepreneurs perceive the accessibility and availability of funds, and the capacity local venture investors bring to the table, as limiting factors. At the same time, while a significant finance community is present and the number of investment groups has increased, the investor community still is fragmented and not well connected. Capital availability often is perceived as a problematic issue in second-tier regions. However, in the case of Kansas City, capital availability has improved and, if there are enough nascent entrepreneurs interested in receiving external investments, there also will be a process in which potential investors and dealmakers become more experienced. Outside venture capital firms have opened offices in Kansas City and indicate interest in this market. This implies that these investors see the potential of a second-tier market and are keeping an eye on emerging ideas. Kansas City leaders need to seize the opportunity and network the emerging investor community, or dealmakers, such as venture capitalists, angel investors, family offices, and large firm executives, with those interested in starting a firm. San Diego's CONNECT program might provide some example of how these connections are built through regular breakfast meetings between industry and the finance community.

Fifth, the entrepreneurial energy and collective effort to improve the Kansas City entrepreneurial community has increased and strengthened significantly in recent years,

creating a milieu in which potential entrepreneurs are willing to accept the risk of abandoning a stable job in exchange for a more volatile position with a startup. Efforts to highlight successful entrepreneurs, network those interested in new ideas (even those still working in large firms) and potential supporters and startup investors should be continued and enhanced now to build on this momentum.

The analysis of the data shows that Kansas City faces the drawbacks of a region characterized by organizational thinness in the form of weak endowment of firms and organizations that can fuel the entrepreneurial pipeline and a lack of interaction and networks among key members of the entrepreneurial community, which in turn keeps the entrepreneurial economy fragmented. These are typical issues regions that are not the proverbial “tech centers” face, and efforts to overcome these challenges that prove successful in Kansas City will be applicable to many other communities across the United States.

To combat organizational thinness and fragmentation, this paper suggests focusing policy efforts on connecting key actors in the entrepreneurial economy such as existing large firms, entrepreneurial ventures, universities, and funding and mentoring organizations. The Kauffman Foundation could play an important role as a convener in developing these connections, as entrepreneurs and entrepreneurial support organizations have repeatedly acknowledged the value of the foundation’s involvement in existing programs such as Startup Weekend, Pipeline, and 1 Million Cups (1MC), etc. In second-tier regions, foundations like the Kauffman can facilitate networking and collaboration because they maintain a neutral position. For example, the Foundation’s 1MC program, which connects and helps network entrepreneurs, is already a success with more than 100 entrepreneurs attending each week’s meeting. The program could be extended to also involve potential investors and dealmakers such as venture capitalists, angel investors, executives, and others, those working in programs and initiatives that provide entrepreneurial support (incubator managers, commercialization and technology transfer managers, entrepreneurial support programs, etc.), and those working in research institutions.

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