Entrepreneurial Ecosystems

By Maryann P. Feldman

February 2020

Key Points

- Entrepreneurial ecosystems are complex, living organisms that require the collective adaptation of their participants to achieve prosperity.
- The entrepreneurial ecosystems concept centers on entrepreneurs and focuses on creating opportunities for new activities and industries to emerge. This differs from traditional frameworks that seek to interpret spatial clustering.
- A place-based approach to economic development policymaking is necessary, as it considers the specific needs of communities.
- Participation from both the public and private sectors is necessary to create the conditions that help an economic ecosystem succeed, with the public sector best equipped to make capacity-building investments and provide additional resources that support long-term, sustained economic development.

In pursuit of building prosperous economies, policymakers are increasingly interested in entrepreneurial ecosystems. The concept positions entrepreneurs and entrepreneurial communities as central actors in building the benefits associated with geographic agglomerations. Policy interest in this concept is growing as evidenced by the Startup Europe Club policy initiative and country-level startup policy initiatives that have sprung up in virtually all advanced and emerging economies during the past decade. In the US, the Ewing Marion Kauffman Foundation and private entrepreneurial support organizations, such as Techstars, have promoted entrepreneurial ecosystems to foster a culture that increases economic dynamism. This report presents the concept of ecosystems as a new understanding of how entrepreneurial economies work and how they develop over time.

Compared to the disappointing results of traditional policies that attempt to address market failure and structural deficiencies or that treat places as having homogeneous tastes and preferences, entrepreneurial ecosystems draw from ecology and view an economy as a complex, living organism that its participants experience uniquely. Rather than responding to top-down mandates, ecosystem participants collectively adapt to opportunity and change. Instead of functioning exogenously, the entrepreneur is both a product of the system and a creator of its dynamics. Building an entrepreneurial ecosystem requires bespoke and specific actions, often more focused on social and trust building rather than strictly focusing on economic efficiency. Further challenging economic orthodoxy, ecosystems are inherently place specific and require place-based policies and interventions.

Instead of seeking to be the next “Silicon wherever”—the mantra of 1990s economic development policy—the ecosystem concept allows places to build on their history and context and allows citizens to craft their own economic future, subject to being able to produce and sustain economic
or social value. While the results of entrepreneurial ecosystem building remain to be seen, the energy and buy-in from communities are palpable.

This report specifically explores how entrepreneurial ecosystems are different from prior approaches. It begins by defining the concept of ecosystems and demonstrates how it is different from prior ideas about the growth of an entrepreneurial economy. The report then considers how the concept might be implemented in different places and what types of policies are required.

**Defining Ecosystems**

The ecosystem concept originated with practitioners in the mid-1990s. Colin Mason and Ross Brown offer what has become the generally accepted definition of ecosystems:

> a set of interconnected entrepreneurial actors (both potential and existing), entrepreneurial organisations (e.g. firms, venture capitalists, business angels, banks), institutions (universities, public sector agencies, financial bodies) and entrepreneurial processes (e.g. the business birth rate, numbers of high growth firms, levels of “blockbuster entrepreneurship,” number of serial entrepreneurs, degree of sell-out mentality within firms and levels of entrepreneurial ambition) which formally and informally coalesce to connect, mediate and govern the performance within the entrepreneurial environment.

Complex adaptive systems are characterized by complex feedback and self-reinforcing interactions among components. They are living systems that grow, but also mature and decline, and then reemerge in a new configuration. Consider how Boston’s economy has evolved and reinvented itself over the past 400 years.6

While we tend to focus on urban areas, every rural community and small town—any place where people live and there are economic exchanges—is an ecosystem, with varying abilities to promote entrepreneurship. Moreover, the boundary between an ecosystem and its environment is neither fixed nor easy to identify. The system is subject to constant exchanges with its environment. In lieu of considering an urban versus rural divide, both types of places are connected as part of a larger system, with functions and relationships distributed across the various system components at varied scales, giving the system a degree of connectivity.

Vibrant regional economies, including those favorable to new firm formation, are the product of subtle social relationships and intangibles such as trust, openness, and tolerance. While sometimes lumped together as culture, it is more instructive to address behaviors that are counterproductive and might be improved. What matters to the ecosystem is how resources are deployed and to whom they are available. A range of organizations advances entrepreneurial ecosystems, and these are necessary but not sufficient.

Real economic value is created through consensus around a shared vision. This requires authentic and informed leadership willing to champion a place and make long-term investments. An entrepreneurial ecosystem relies on a continual process of recognizing and appreciating different actors and providing incentives for their inclusion and ability to realize their capabilities.

**New Wine in Old Bottles?**

Entrepreneurial ecosystems advance our understanding of the spatial clustering of economic activity. Scholars have attempted to interpret the spatial clustering of economic activity using different theoretical lenses, each moving to a better and more nuanced understanding. The frameworks have informed policy and guided public investment.
Unfortunately, results have largely been disappointing. While a few places are doing well, most places have not seen increased entrepreneurial activity, firm growth, and increased prosperity.\textsuperscript{10} We have never talked so much about entrepreneurship yet had so little to show in terms of industrial dynamics.

Entrepreneurial ecosystems advance our understanding of the mechanism behind spatial clustering and potential policy responses. Entrepreneurial ecosystems focus on the environment, placing entrepreneurs and entrepreneurship at the center. As a substitute for focusing on localized competition among firms, which promotes opportunistic behavior, zero-sum games, and private benefits, ecosystems focus on cooperation, collective interests, and common benefits. The growth and survival of every firm benefits when the ecosystem is robust.

Moreover, as an alternative to being defined by industries, entrepreneurial ecosystems focus more on opportunities for new industries and activities to emerge. When economic developers focused on industry clusters, they looked backward at already defined and well-known industries. Those industries have developed in other places, and it would be difficult for a place to catch up to these industries’ constructed advantage. This limits the inherent creativity that emerges in ecosystems, as entrepreneurs innovate to create things that did not previously exist and to advance a technology or produce goods and services that better match consumer demand.

As living systems, ecosystems grow and progress through development stages in a temporal process. The stages of development cannot be skipped as they are important to the system’s development. Progression through these stages defines relationships and develops the social capital and institutions that hold the system together.

But the stages do not proceed uniformly. Places have different growth trajectories depending on their resources, their aspirations, and larger structural and cyclical forces beyond their command. An ecosystem approach accommodates these differences by addressing region-specific dynamics.

While clusters focus on efficiency, entrepreneurship is about exploration and relies on slack resources that allow for experimentation and failure. Ecosystem-development policy represents a shift from reliance on following a deterministic strategic plan to a focus on adaptability and adjustment. This is the equivalent of the entrepreneurial fast pivot: the quick recognition that an adjustment is needed while not losing sight of the overall objective and priorities.

Moreover, ecosystems are ubiquitous: Every single place is an ecosystem. Those few urban ecosystems with high-growth firms occupy a disproportionate share of current policy attention. Yet this limited conception only reinforces the older generation of policies that led to unsuccessful attempts to replicate Silicon Valley. Too often when policymakers try to build an ecosystem, they believe they can invest in one component, say an incubator or an accelerator, or provide financing without addressing the fuller context and investing in changing the culture. Prosperous regions have several common ingredients, including the participation of entrepreneurs, who invest in building infrastructure as they build their firms; local champions, who believe in a place and make long-term investments; and benevolent and large anchors, either academic institutions or corporations, that build and sustain local resources.

Also important to regional prosperity is government engaged in making long-term and altruistic investments in the interest of public welfare and good governance, defined as the democratic process of building consensus to solve a collective problem, which simultaneously creates the social norms and institutions that convey place-specific advantages. Innovative regions also link into broader national and international networks, often through multinational firms with a local presence; these connections allow regions to draw on new knowledge and talent. Yet, the most crucial factor in an innovative region is the temporal process of constructing shared meaning over time—the way local actors build institutions and create social capital during the sequential and dynamic process of creating a successful geographic community in a place.

All around America there are ecosystems that are sparse and poorly functioning. Often these places have suffered external shocks due to loss of industry and opportunity, creating ecosystems of despair. The biological equivalent is a stressed
ecosystem—for example, depleted farmland or a poisoned stream.

Sometimes ecosystems, such as the Arctic tundra or desert sands, may not seem at first glance to be thriving ecosystems, but they harbor activity. This activity may not be suited for every preference and purpose, but these ecosystems are still viable and sustainable places for their inhabitants. While policymakers debate if certain places can remain viable, many citizens in rural communities and small towns have a stubborn attachment to places they call home. Beyond what economists would consider a rational decision, residents choose to stay where they are instead of moving to where jobs are.

**Objectives for Entrepreneurial Ecosystems**

Too often, the articulated goal for economic development policy is to foster high-growth-potential companies with little regard for equity and inclusion—or even consideration of how a community might change. But the problem with this approach is that identifying high-growth companies is extremely difficult, and too often, we bet on the wrong horse.

Consider Waco, Texas. While the expectation was that high-growth companies would be spinning out of Baylor University, the fastest-growing company in Texas is Waco’s homegrown startup, Magnolia, which is an integrated home improvement and home furnishing empire.

Early on, Magnolia was dismissed as a lifestyle play, a pejorative term for entrepreneurial startups that are not perceived to involve a scalable technology. There is not a dichotomy; instead, there is a continuum of entrepreneurial startups that involves mainstream businesses, side hustles, and business-to-business supplier firms. Although the US eschews industrial policy, we seemingly have no problem endorsing certain entrepreneurial activities and favoring certain places. Entrepreneurship’s potential to create jobs, bolster local communities through the creation of supply chains and logistics, and increase civic engagement is too important to limit its reach to favored certain sectors or activities.

Embracing ecosystems as an economic development construct requires rethinking our objectives. Governments’ objective in economic development could be articulated as building the capacity for citizens to fully realize their potential. Capacity-building activities include investing in physical infrastructure, such as high-speed internet, and strengthening local institutions, such as education or health care delivery. Increased capacity provided by the public sector lowers the costs for private citizens to engage in entrepreneurship. This, in turn, creates greater vibrancy and resilience in an ecosystem.

The Research Triangle Region, which encompasses the cities of Raleigh, Durham, and Chapel Hill and surrounds the Research Triangle Park in North Carolina, is an example of an ecosystem’s development. The region’s genesis offers an example of state and government initiatives, public-private partnerships, and entrepreneurs’ efforts. What is most key are the processes that took place subsequently as the industrial landscape developed and evolved. A vibrant ecosystem emerged through the articulation of a vision, the implementation of consistent policy, and reinforcing efforts and investments in building capacity.

History is instructive. In 1955, Gov. Luther Hodges formed a committee of business leaders and university officials to investigate the state’s economic future, recognizing that the economy was vulnerable to global competition and technological innovation. Mac McCorkle argues that the Research Triangle Park’s key advocates were old economic interests that came together to form what V. O. Key called a “progressive plutocracy.” Hodges laid out a long-term vision that he called the “North Carolina Dream,” with a billion-dollar budget request (in 1957 dollars) to invest in education and infrastructure.

Many places have attempted to replicate a research park for economic development without having these other related investments and more holistic view. Gov. Hodges’ actions may be considered an extension of his work with the European Recovery Program (ERP), or the Marshall Plan. This was a transformational experience for Hodges that combined practical business experience with the need to accommodate multiple political interests.

While working in war-torn Germany, Hodges saw the power of progressive public policy to create economic life in an impoverished region. At the
time, Hodges believed that nothing less than the future of democracy was at stake. He passionately advocated for a prosperous future and enlisted his ERP colleague, Robert Hanes, then the president of Wachovia Bank, to work with him.

Their vision was used to form a diverse community of common interest, mobilize resources, and create a shared consensus. Their goal was larger and more inclusive than building high-growth companies or creating an industry cluster. The basic idea was to create the conditions required to generate a higher quality of life for all citizens of North Carolina.

The results were transformative for the Research Triangle Region. The prevailing logic of the time predicted that the benefits from investments in the triangle would diffuse and promote growth throughout the state. By investing in universities and concentrating resources, there would be propulsive growth to nearby places as an industrial landscape developed supply chains and related industries. This logic is associated with a theory of investing in growth poles that still dictates many current policy proposals, which advocate for investing in breakthrough science.15

This is a policy prescription we have followed since the passage of the Bayh-Dole Act in 1980, which gave American universities ownership of intellectual property resulting from government funding. State governments have aggressively invested in promoting science under this logic.16 While there certainly have been benefits, the expected widespread diffusion of economic activity and greater distribution of benefits have not happened. The benefits of these targeted investments remain relatively geographically concentrated.

An economic development model predicated on ecosystems would advocate for investing in local places to create the capacity to let an ecosystem develop. This certainly includes investment in science as a means to correct the market failure associated with industry underinvestment in research and development but would require additional efforts to keep jobs and benefits local. Conventional approaches to technology-based economic development promote a model of venture capital investing that is unattainable for most new ventures and will likely yield perverse results if successful.

Despite the attention it receives, venture capital is not readily available. William Kerr, Ramana Nanda, and Matthew Rhodes-Kropf find there are fewer than 500 active venture capital firms investing in startup ventures across the United States in any given year, while Steven Kaplan and Josh Lerner find that only about 1,000 of the 600,000 new firms founded each year receive initial venture capital financing.17 In addition, the venture capital funding model emphasizes rapid growth and cashing out on an exit opportunity rather than patiently building firms for long-term success. Perversely, companies that do receive venture capital investments are likely to relocate, merge, or be acquired as the venture capital firms seek to secure returns on their investment within a limited time horizon. This model has proved insufficient to anchor local wealth and argues for financing alternatives such as the Small Business Innovation Research program, which funds entrepreneurial firms.

One constraint in many regions is the loss of community banks, which accelerated in the US after the 2008 recession. Roisin McCord, Edward Prescott, and Tim Sablik found that the number of US community banks, defined as those with less than $50 million in assets, decreased by 41 percent between 2007 and 2013, while the number of commercial banks dropped by 14 percent.18 Scott Langford and Maryann Feldman find that community banks decreased both the onset and duration of the 2008 financial recession, suggesting that banks are an element of an ecosystem.19

The loss of community banks has long-term implications. Tania Babina and Elizabeth Berger examined the impact of regional bank distress during the Great Depression on present-day entrepreneurship in those same counties and found that entrepreneurship rates between 1930 and 2010 were 9 percent lower in those counties that experienced high bank distress.20 This trend is disturbing given the current decrease in community banks across the United States.

**Entrepreneurial Ecosystems and Policy**

National policymakers are often skeptical of place-based economic development strategies based on the grounds of economic efficiency. The idea is that the places that receive investment benefit, but
at the expense of aggregate national welfare. Yet, at the subnational level, state and local governments engage in various place-based strategies.

Consider the packages of incentives and tax abatements provided by state and local governments to large firms for headquarters relocations or expansions. These are an explicit attempt to secure jobs even though evidence suggests that results often fail to materialize and have little impact on firm decisions. Incentive packages are often opportunistic plays to attract corporate relocations or expand current local businesses, providing upfront assistance in building or land costs and promising future tax relief, as opposed to being part of a broader, long-term plan with strategic investments.

Given the requirement that state and local governments balance their budgets, these incentives entail opportunity costs, requiring reductions in funding for other priorities. Often, the first programs cut involve experimental programs, such as those supporting entrepreneurship, which would provide long-term returns. Ultimately, budgetary constraints may require cutting investments in basic services, further reducing the performance and amenities in the place, and resulting in a race to the bottom.

The debate between people- and place-based policies ignores the reality that the most effective way to generate efficiencies, guarantee equal opportunities, and improve individuals' lives is to target where they live and work. For most of American history, we have encouraged mobility as a means to enable people to live in places where they likely will be more economically productive. It is argued that this, in turn, will increase individual incomes, productivity, and aggregate growth. Yet, rather than leading to a more even geographical distribution of wealth, regional inequalities have grown while migration has declined and entrepreneurial dynamism has stagnated.

Currently, a few urban ecosystems are leading national growth. This suggests that the future of the nation’s prosperity is substantially determined by activities in these local ecosystems. But trying to replicate the conditions in those ecosystems with one-size-fits-all policies has not worked. Nor have austerity policies that have attempted to lower taxes to incentivize business growth. A place-based approach asserts the need to specifically consider the regional context and recognize that people live in places.

Capacity building in a jurisdiction is beyond the mandate of any private firm, industry association, or other economic institution. Hence, capacity is a key public good that is the basis for economic development. Capacity building requires an active public sector, but it also necessarily involves a range of additional actors or organizations.

Entrepreneurs who are actively engaged in building firms have the best idea of what is needed for their firms’ continued growth—for example, what barriers and obstacles they face. Their contribution to expanding micro-capacities for themselves can also enhance region-wide capacity to support creativity, resilience, and advancements in product and process innovation for others. These community actors help create a relationship between the new microeconomics of economic development and desirable economy-wide outcomes.

The public sector is arguably the best-equipped actor in the economy, with the necessary long-term perspective, a sufficient command of resources to make large-scale investments in infrastructure and education, and the ability to effectively coordinate economic systems in support of innovation. Moreover, government—as the agent for collective action—has a mandate to ensure that the benefits resulting from public investments are widely and fairly distributed. Investments in capacity building benefit current residents rather than targeting new talent. Places that have capacity become more attractive for outside investment.

Additionally, capacity-building investments in education enable individuals to realize their potential—being more productive, starting new firms, and having greater civic engagement. At a fundamental level, the government’s role in economic development is to strike a balance between multiple objectives: to realize potential and maintain incentives for creative and collective action, to provide scaffolding for economic transactions without overregulating, and to make investments that advance the public interest and encourage the full participation of private individuals and organizations while avoiding capture by special interests.

A large literature concludes that firms benefit from being located near clusters of related activity.
It improves their ability to innovate by lowering costs of acquiring information and creative ideas and by providing access to skilled labor and specialized suppliers. This implies that firms receive some material benefit for location that may or may not be captured in property rents and taxes. Firms located in agglomerations receive benefits that are tangible but difficult to price.

This suggests that large firms could be incentivized to build capacity in communities through encouraging training and skills upgrading, engaging in public-private partnerships, and sharing assets and equipment. This would set into motion virtuous, self-reinforcing cycles of development, more finely honing resources. Collocated firms may benefit more by collaborating locally to refine specializations. This is the fundamental logic of the Marshallian Industrial District. There is a movement away from narrowly defining corporate objectives as maximizing shareholder value to a more encompassing view of stakeholder value, which includes communities as important stakeholders.

Without consensus about long-term growth, it is easy for government to give in to short-term demands or privilege one objective at the expense of others. An articulated vision for government requires not only reconciling diverse perspectives and temporal horizons but sometimes also making difficult decisions.

Economic development policy requires building capacity to integrate and align multiple economic and social objectives, including identifying and working through the underlying frictions or tensions that might hinder policy progress. Economic development is also a collection of interventions that help increase the capacity of a regional economy to support qualitative, transformative, and inclusionary improvements. In this regard, economic development is neither faceless nor predetermined but is actively shaped and reshaped by actors who react, experiment and adjust, and build the capacity to promote a higher standard of life.

About the Author

Maryann P. Feldman is the Heninger Distinguished Professor in the Department of Public Policy at the University of North Carolina at Chapel Hill. Her research and teaching interests focus on innovation, the commercialization of academic research, and the factors that promote technological change and economic growth.

Notes

1. For more information, see Startup Europe, “Welcome to Startup Europe Club,” http://startupeuropeclub.eu.

© 2020 by the American Enterprise Institute. All rights reserved.

The American Enterprise Institute (AEI) is a nonpartisan, nonprofit, 501(c)(3) educational organization and does not take institutional positions on any issues. The views expressed here are those of the author(s).