

Entrepreneurial Ecosystems: The Foundations of Place-based Renewal

Allan O'Connor , Erik Stam, Fiona Sussan and David B. Audretsch

Abstract Regardless of how the concept of a ‘place’ is geographically defined, be it cities, regions, nations or otherwise, the impact of new technologies will influence much of our business, social, and economic landscapes. Evidently, there is an increasing pressure on ‘places’ to embrace new opportunities for strategic development and confront complacency that retards change. The solution may very well be in creating and sustaining entrepreneurial ecosystems where entrepreneurial action thrives and innovation drives the new economy. However, defining the entrepreneurial ecosystem remains difficult and the methods used to analyse them are inconsistent. This chapter deals with the theoretical foundations of an entrepreneurial ecosystem when it is specifically considered as a place-based change management instrument. As we introduce the variety of submitted works to this volume it becomes apparent that while capital, labour, resources and infrastructure are all important, equally, how these elements are mobilized through leadership, governance, and institutions are at least but perhaps even more important. While technology figures heavily, it is overshadowed to some extent by an emphasis on individual action and agency. Defining place-based transitions and transformations is dependent upon anchoring the point of departure. Entrepreneurship therefore has a key role to play in innovating the renewal of place and the value creation of entrepreneurs takes precedence. Technological advances offer great value creating opportunities in some places but in all, the value lies in the socioeconomic stimulus that entrepreneurs create through new opportunities for developing cohesive communities.

A. O'Connor (✉)

University of Adelaide, Adelaide, SA, Australia

e-mail: allan.oconnor@adelaide.edu.au

E. Stam

School of Economics, Utrecht University, Utrecht, The Netherlands

F. Sussan

School of Advanced Studies, University of Phoenix, Tempe, AZ, USA

D. B. Audretsch

Indiana University, Bloomington, IN, USA

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1 Introduction

Entrepreneurial ecosystems have become a prominent concept in recent discussions about economic development in both the policy and business worlds. The concept of entrepreneurial ecosystems has gained popularity due to mainstream business books such as Feld's (2012) *Startup Communities*, work by Isenberg (2010) in the *Harvard Business Review*, insights related to policy making (OECD 2013; Stangler and Bell-Masterson 2015), and practitioner projects like Compass (Herrmann et al. 2015). These works have popularized the idea amongst entrepreneurial leaders and policymakers that the local context can have a significant impact on the entrepreneurship process. In spite of its popularity, there is not yet a widely shared definition nor an approach to researching entrepreneurial ecosystems that facilitates development.

Furthermore, how these entrepreneurial ecosystems relate to, influence, or inspire change in the economic fortunes of a place, fostering social and industrial transformations and transitions, is an even more puzzling question. These transformations involve creative destruction, in which entrepreneurs are key agents (Schumpeter 1934). However, creative destruction does not happen overnight, it often involves a long and tedious transition from the old regime to the new regime (Raven et al. 2012). Despite the fact that some places, Silicon Valley, Route 128 or Boulder Colorado for instance, are persistently named as places with strong entrepreneurial ecosystems, a broad based study of entrepreneurial ecosystems is yet to be undertaken. Governance of entrepreneurial ecosystems is difficult without well-developed measures of what comprises an entrepreneurial ecosystem and indicators that show how well it is functioning. Ultimately we are left with only a narrow base of evidence to show how healthy entrepreneurial ecosystems are critical to regional development.

In this book we deliberately problematize the idea of an entrepreneurial ecosystem by emphasizing 'place' as its location. In other words we assume first that every place has an entrepreneurial ecosystem but the performance, practices, strengths, weaknesses, opportunities, threats, objectives and actors each vary. Picking up the points made by Acs et al. (2017) that the lineages of the entrepreneurial ecosystems are rooted in the strategy and regional development literatures, we seek to better understand the strategic approaches, challenges and pathways that various places face and how the entrepreneurial ecosystems respond across various places, either through coordination or organically, to account for regional development. Transformations are an emerging property of entrepreneurial ecosystems, but they do not emerge automatically. For these transformations to emerge, many actors need to be aligned, to initiate and set in motion a large scale transition. We expect places will recognize the need for transformations of their regional economies (e.g. from traditional manufacturing to advanced knowledge-based industries) and work on the transition from

the old to the new regime. Through this work we seek to extend knowledge on how entrepreneurial ecosystems are strategically beneficial or otherwise to regional development.

Our current endeavours attempt to answer three questions: (1) What is an entrepreneurial ecosystem, (2) how are places affected by entrepreneurial ecosystems and affecting their entrepreneurial ecosystems, (3) how can we empirically grasp the relationship between entrepreneurial ecosystems, entrepreneurship and the transformation of places to ground research practice in this domain? In this chapter we will provide a framework that answers the first question. This volume provides further research that contributes to answering the second question to understand the relationship between place and the entrepreneurial ecosystem. Our third question—how can we empirically grasp the relationship between entrepreneurial ecosystems, entrepreneurship and the transformation of places to ground research practice in this domain?—will be addressed through synthesis of the discussion raised through this chapter.

2 Entrepreneurial Ecosystem Defined

What is an entrepreneurial ecosystem? In abstract terms, central to the definition of entrepreneurial ecosystems are (entrepreneurial) agency and (human made) context (i.e. the ecosystem), especially the humanly devised constraints that structure human interaction (i.e. rules of the game, institutions), that shape the presence and form of important entrepreneurial ecosystem elements such as capital, labour and knowledge (Acs et al. 2014; Stam 2015).

The ecosystem concept finds its roots in ecology (eco-logical system), in which the interaction of living organisms with their physical environment is at the center. Adopting an ecological lens to consider the entrepreneurial ecosystem also invites the consideration of two alternate ontologies (McKenzie and Sud 2009). The first ontological perspective considers the ecosystem as a steady-state natural regulated system maintaining balance among the organisms and elements. This balanced system is then open to disruption from external influence, and might differ in its ability to absorb external shocks (resilience). The second ontology assumes that ecosystems are in a constant change of state that shifts between levels of complexity. This latter ontology, in biological terms, suggests that survival, actor cooperation and external factors each need to be accounted for in understanding ecosystem development and change. These ontological views resonate with the competing economic debates with respect to entrepreneurship and contrasts between economic equilibrium and continuous change. Our perspective is firmly grounded in the second ecology, emphasizing transformations and transitions.

We do not stick to the strict natural systems version of the ecological approach, as entrepreneurial ecosystems largely involve artificial, social systems. The entrepreneurial ecosystem approach emphasizes that entrepreneurship takes place in a community of interactive (Audretsch and Belitski 2016) and interdependent actors (cf. Freeman and Audia 2006) set among social, political, economic, and cultural elements (Spigel 2017). In particular the literature on entrepreneurial ecosystems

focuses on the role of the (social) context in allowing or restricting entrepreneurship and in that sense is closely connected to other recent 'systems of entrepreneurship' or systemic entrepreneurship research approaches (Acs et al. 2014; Neck et al. 2004; Sternberg 2007; Ylinenpää 2009), which often aim to bridge the innovation system approach and entrepreneurship studies.

Whether to ponder casually or to apply systematic research rigour in the analysis of an entrepreneurial ecosystem, it requires the adoption of systems thinking. Systems thinking involves identifying the contextual patterns of organization of the elements and the relationships among the elements found in the whole of the system in focus. Rather than dealing with specific content, "systems thinking balances the focus between the whole and its parts, and takes multiple perspectives into account" (Cabrera et al. 2008, p. 301). Applying systems thinking in our case requires an examination of what comprises the entrepreneurial ecosystem and what does not. An understanding is needed about what function the elements of the system are intended to perform, what outcomes are desired from the ecosystem and how well these elements contribute to these expected outcomes. The elements of the system also do not sit idly but rather the actors' form relationships among the elements that influence the overall system's performance. The actors themselves also hold perspectives of the system and a full analysis of the system needs to account for these various perspectives. In this work we seek to bring together various perspectives of the entrepreneurial ecosystem to attempt to synthesize a more general view.

Entrepreneurial activity, is the first observable output of the entrepreneurial ecosystem and is considered to be the process by which individuals identify and pursue opportunities for innovation. Theoretically this innovation will eventually lead to new value in society and this is therefore the desirable and ultimate objective outcome of an entrepreneurial ecosystem. Entrepreneurial activity is an intermediary output of the system that is an early indicator of progress toward the desired outcome of value created within a social context. This entrepreneurial activity has many manifestations, such as innovative start-ups, high-growth start-ups, and entrepreneurial employees (Stam 2014). The term productive entrepreneurship refers to "any entrepreneurial activity that contributes directly or indirectly to net output of the economy or to the capacity to produce additional output" (Baumol 1993, p. 30); which we interpret as entrepreneurial activity that generates aggregate welfare. Productive entrepreneurship might also include failed enterprises that have provided a fertile breeding ground for subsequent ventures or inspired them, creating net social value ('catalyst ventures': Davidsson 2005).

3 Differences and Similarities with Related Concepts

How does the entrepreneurial ecosystem concept differ from related concepts such as clusters, industrial districts, innovation systems, innovation ecosystems, and the triple helix model of industry, government and university interactions? What are the similarities? What the entrepreneurial ecosystem approach has in common with the

other established concepts is the focus on the external business environment: that there are forces beyond the boundaries of an organization that can contribute to a firm's overall competitiveness, and that the firm contributes to a system larger than itself (see Table 1).

The industrial district approach emphasizes the local division of labour of an industry (Marshall 1920) and the interaction between the community of people and a population of firms within a socio-territorial entity (Becattini 1990) in order to be successful on international markets. The cluster approach focuses on 'geographic concentrations of interconnected companies, specialized suppliers, service providers, firms in related industries, and associated institutions (...) in particular fields that compete but also co-operate' (Porter 1998: 197). Innovation systems refer to the networks and institutions linking knowledge producing hubs such as universities and public research labs within a region and innovative firms. These linkages allow knowledge to spill over between different organizations, increasing a region's overall innovativeness (Cooke et al. 1997). The triple helix model is a specific approach to analysing the relationships between the broad categories of government, industry and the university sector that contribute to development of a territorial innovation system.

Unlike previous uses of the term 'ecosystem' in the management literature, such as business ecosystems (Moore 1993; Iansiti and Levien 2004) and innovation ecosystems (Adner and Kapoor 2010; Adner 2012) that focus on the organization of a single industry or value chain, entrepreneurial ecosystems are an inherently geographic perspective. That is to say, entrepreneurial ecosystems focus on the cultures, institutions, and networks that build up within a region over time rather than the emergence of order within global markets. It does not involve the strategic management of a firm or group of firms, but the strategic management of a place (Audretsch 2015). The entrepreneurial ecosystem approach differs from industrial district, cluster, and innovation system approaches by the fact that the entrepreneur, rather than the firm, is the focal point of analysis. The entrepreneurial ecosystem approach thus begins with the entrepreneurial individual instead of the company but also emphasizes the role of the social and economic context surrounding the entrepreneurial process. Most cluster studies focus on firms and industries, including their dynamics (Frenken et al. 2015). As opposed to the clusters, district, and innovation systems literature, the focus of entrepreneurial ecosystems research is placed firmly on the entrepreneur and the start-up rather than larger, more established firms or slower growing SMEs. The high-growth start-ups that make up the basis of entrepreneurial ecosystems are not necessarily included in all cluster and industrial district models (Markusen 1996). While frameworks of industrial districts, clusters, and innovation systems do include a role for entrepreneurs (e.g. Cooke 2001; Henry and Pinch 2000; Ylinenpää 2009), the focus is not specifically on them but rather the role of entrepreneurs and start-ups within larger systems of value creation and innovation. As a result, these existing approaches often see start-ups as smaller versions of larger, international firms rather than as unique organizational entities with different (and often more constrained) capabilities and resources.

Table 1 Comparison with industrial district, cluster, and innovation system literature

	Key actors	Key concepts	Input into entrepreneurial ecosystem approach	Key outcome	Key references	Key references entrepreneurship
Marshallian industrial district	SMEs	Labor market pooling; specialized goods and services; knowledge spillovers; market competition	Talent (labor market pooling), intermediate services (specialized goods and services), knowledge (spillovers)	Regional economic growth (productivity)	Krugman (1991), Markusen (1996), Marshall (1920)	–
Italianate industrial district	SMEs; local government	Flexible specialization, interfirm cooperation, trust (social embeddedness)	Networks between entrepreneurs and enterprises	Regional economic growth (employment)	Becattini (1990), Harrison (1992), Piore and Sabel (1984)	Johannisson et al. (1994), Lazerson and Lorenzoni (1999), Malecki (1997)
Cluster	Innovative firms	Factor conditions; demand conditions; related and supporting industries; firm structure, strategy and rivalry	Talent, finance, knowledge, physical infrastructure (factor conditions); demand (demand); support services/intermediaries (related and supporting industries); ...	National/regional competitiveness (productivity of particular industries)	Porter (1990, 1998)	Delgado et al. (2010), Rocha (2004), Rocha and Sternberg (2005)
Innovation system	Innovative firms; national government	Networks, inter-organizational learning, system	Knowledge, finance, formal institutions, demand	Innovation	Braczyk et al. (1998), Freeman (1987), Lundvall (1992)	Sternberg (2007), Ylinenpää (2009)

(continued)

Table 1 (continued)

	Key actors	Key concepts	Input into entrepreneurial ecosystem approach	Key outcome	Key references	Key references entrepreneurship
Triple helix model	Government, firms and universities	Interactions between university-industry-government, innovation, knowledge-based society	Knowledge transfer and interdependence of three sectoral actors	Innovation system	Eitzkowitz and Leydesdorff (2000), Leydesdorff and Eitzkowitz (1998)	Eitzkowitz et al. (2000)
Innovation ecosystem	Innovative firms	Co-innovation, adoption chain, shared value proposition	Interdependence of actors involved in innovation; global networks	Value creation and capture by the firms in the ecosystem; firm survival	Adner (2012), Iansiti and Levien (2006)	Nambisan and Baron (2013), Zahra and Nambisan (2011)

Based on: Stam and Spigel (2018)

An important contrast with other concepts is that the entrepreneurial ecosystem approach not only sees entrepreneurship as a result of the system, but also sees the importance of entrepreneurs as central players (leaders) in the creation of the system and in keeping the system healthy (Feldman 2014). This “privatization” of entrepreneurship policy diminishes the role of the state compared with previous policy approaches. However, Feld (2012) argues that this does not remove its role but rather shifts it to that of a ‘feeder’ of the ecosystem than as a ‘leader’. Entrepreneurs with a long-term commitment to the ecosystem are often best positioned to recognize the opportunities and restrictions of the ecosystem and to deal with them together with other ‘feeders’ of the ecosystem (such as professional service providers and the financial infrastructure). These successful businesspeople and philanthropists can act as ‘dealmakers,’ using their own social networks and capital to improve the entrepreneurial environment of their home region (Feldman and Zoller 2012). Increasingly these entrepreneurs are viewed as key co-creators in the ecosystem by convincing stakeholders (e.g., government, customers, non-financially involved local citizens) to legitimize their new ventures and establish new industry standards within domestic markets and across international borders (Alvarez et al. 2015). However, the government retains an important role as a ‘feeder’ who acts to create a conducive economic and social environment for

Table 2 Differences and similarities between entrepreneurial ecosystems and related concepts

Approach	Industrial district, cluster, innovation system, triple helix	Innovation ecosystem	Entrepreneurial ecosystem
Main focus	Economic and social structures of a place that influence overall innovation and firm competitiveness. In many cases, little distinction made between (fast growing) start-ups and other types of organizations	Creating customer value through a chain of interdependent organizations, with differential value capture by different players in the ecosystem	Start-ups explicitly at center of ecosystem. Seen as distinct from established large firms and (lower-growth) SMEs in terms of conceptual development and policy formation
Locus of action	Private firms and state is primary locus of action in building and maintaining industrial district/cluster/innovation system. Little room for individual agency in their creation	One large firm as orchestrator of the ecosystem, with many other firms co-innovating or involved in the adoption of innovation	Entrepreneur is the core actor in building and sustaining the ecosystem. While state and other sources might support ecosystem through public investment, entrepreneurs retain agency to develop and lead the ecosystem

Based on: Acs et al. (2017)

entrepreneurship, for example in adjusting laws and regulations or providing training and educational opportunities.

As illustrated in Table 2, there are significant differences between entrepreneurial ecosystems and allied economic development concepts such as industrial districts, clusters, innovation systems, the triple helix model, and the strategy concept of innovation ecosystems. This does not mean that work on ecosystems cannot draw on the decades of research underlying these concepts, but that the findings from this work must be reinterpreted through the lens of the (entrepreneurial) agent that is at the heart of the entrepreneurial ecosystem approach.

4 Outline of the Book

In this chapter we have introduced the entrepreneurial ecosystem concept, especially its definition and differences and similarities with other related concepts. In this section we will cover the scope of research compiled in this book and synthesize the contributions to exhibit how places are affected by and are affecting their entrepreneurial ecosystems. We shall then conclude the chapter with an appraisal of the opportunities for further research and suggestions on the empirical investigation of entrepreneurial ecosystems.

Chapter “[Deconstructing the Entrepreneurial Ecosystem Concept](#)” contributed by Daniel et al. (2017) highlights the pre-paradigmatic stage of development of the entrepreneurial ecosystem approach. The researchers reinforce the link between entrepreneurial ecosystems and place and in particular, find strong themes of dynamics and change observable among their data. The multi-disciplinary collaboration for this work saw two approaches to analysis contrasted and compared with the entrepreneurial ecosystem approach. The authors argue that research of place-based dynamics could adopt network and systems analytical frames of reference for analysing entrepreneurial ecosystems. The entrepreneurial ecosystem is focused on community context, multi-level content from individual through to macro-influences, a process focus on the ingredients for serendipity, opportunity, and circumstance to underpin entrepreneurship, its nature being relative to place, its purpose to stimulate enterprise and place development while in practice it is subjected to objective interventions such as may be introduced by individual actors. While the various elements that comprise an entrepreneurial ecosystem are influenced by the various individual actors, organizations and institutional settings, it is a multi-level process of serendipity, opportunity, and circumstance that characterizes transitions and the accumulated outcomes of enterprising and innovative activity that evolves the dynamic changes and transformation relevant to place.

The contribution of Chapter “[Institutional Dynamism in Entrepreneurial Ecosystems](#)” by Fuentelsaz et al. (2017) focuses on the institutional support available to increase a new venture’s chance of success and improve the efficiency of the resource base of ecosystems. The chapter considers new venture development stages and examines resource availability that responds to the dynamic needs of a

start-up business. While the entrepreneur is flagged as the primary actor in the ecosystem the authors also acknowledge the diverse set of actors representing and being embedded in institutions that influence a new ventures development. Their argument suggests that entrepreneurs define the 'place' boundary and that transitions are dependent on entrepreneurs being able to access resources that assist in the new ventures development. Transformation therefore is evidenced through the ability of firms to not only start, but for these firms to grow.

Chinta and Sussan (2017) take a different approach to place by concentrating their discussion on the university campus in Chapter "A Triple-Helix Ecosystem for Entrepreneurship: A Case Review". Mirroring the triple helix model, the authors consider the relationships among universities, government and business and the implications for entrepreneurial firms. Their argument suggests that the role of the university in this relationship has somewhat shifted over time to become more than a place of learning and new knowledge development, becoming an integral part of the supply and demand equation for seeding entrepreneurial firms. However, universities are just one part of the triad and they need government and business to contribute other elements within a supply and demand model for new ventures. For these authors transitions will be observable through the lens of increased and focused collaboration between the triad partners. Transformations will be perceived when entrepreneurial firms eventuate through a strong supply of entrepreneurs and a resource base oriented around the university campus that readily meets the needs of the entrepreneurs and their new venture demands.

Continuing the discussion on the university context, O'Connor and Reed (2017) adopt an approach that drew upon interviews with various ecosystem stakeholders to construct a view on the role of universities in an entrepreneurial ecosystem. These authors too suggest that the role of universities has expanded beyond the teaching and research expectations to include tighter integration within their communities, shared responsibilities for regional development, and a place at the table in considering governance matters in the regions within which they are located. The five roles they isolate suggest different dimensions of strategic decisions that universities should address and identify a position within. Interpreting O'Connor and Reed's stance suggests that transitions occur through increased activity in new knowledge, innovation based entrepreneurial firms. Transformations will be observed when a region evidences an economic renewal that leverages the university as a regional resource.

Chapter "Regional Entrepreneurship Ecosystems Support: South East Queensland as Case Study" marks a change in focus in the book from theory (this chapter and Chapter "Deconstructing the Entrepreneurial Ecosystem Concept") and particular actor and relationship functions (Chapters "Institutional Dynamism in Entrepreneurial Ecosystems"-"Theorizing the University Governance Role in an Entrepreneurial Ecosystem") to move to the regional level. The remaining chapters provide an international cross-section of various places and focuses on aspects of the entrepreneurial ecosystem. Place is variously defined by provincial boundaries in national contexts (the provinces of the Netherlands) to a grouping of sub-state regions in South East Queensland and through to particular cities, e.g. Brisbane,

Glasgow and Las Vegas. Perhaps notable though that in each case the entrepreneurial ecosystem of a place is defined more by spatial proximity and community populations than by national boundaries. This is particularly evident where sub-state regions and provinces are defined to demarcate differences and draw comparisons. Indeed throughout all the chapters none take a particularly national vantage point of the entrepreneurial ecosystem instead all tend to take community structures as place-based boundaries, be it cities, a province, local council areas, industry or university communities. This suggests a human cohesiveness and proximal interaction may be important dimensions in boundary definition. At the national level it may be that dimensions of human cohesion and proximal interaction are too weak to form a coherent sense of community although exceptions may be found with small nations in cases such as Singapore or the principality of Liechtenstein for instance.

The first spatially focused chapter provides a Regional Entrepreneurial Ecosystem Support framework that suggests the associated dimensions of support for entrepreneurs. The framework may be a useful device to understand the contributions of various actors and identify support gaps. The comparative research of three regions in relative close proximity (South East Queensland) highlights that entrepreneurial ecosystems can be perceived to differ over fairly short distances; an hour or two in driving terms. The chapter by Villiers Scheepers et al. (2017) can be interpreted to suggest that transitions are grounded by activities that grow technology and knowledge based businesses. However, the transformation is observed through the objectives of the specific regions in question. In other words the authors draw attention to the legacies of history, culture, regional values and institutional forces that each region will invariably have (unless it was previously completely uninhabited) and transformation is dependent on the point of departure to define and evidence that change has taken place.

Moving up to the northern hemisphere, Lassalle and Johnston (2017) consider Polish migrant entrepreneurs in Glasgow, Scotland in Chapter “[Where Are the Spiders? Proximities and Access to the Entrepreneurial Ecosystem: The Case of Polish Migrant Entrepreneurs in Glasgow](#)”. This definition of an ecosystem brings into focus the idea of sub-systems within entrepreneurial ecosystems. The authors discuss the distinctive practice of this sub-grouping of entrepreneurial activity and the cultural and geographic proximity that both enables entrepreneurial activity but at the same time isolates it from other entrepreneurial activities outside of the migrant group community. This too strengthens the case for community as a dimensional aspect in some form and makes apparent that different communities can co-exist within geographies. To create transitions it seems that approaches to reduce distance between actors in both a cultural and geographic sense are appropriate strategies. Transformation therefore would be witnessed at the point of increased business start-up and growth activities of the targeted community.

Moving around the globe, Chapter “[Is there a Path from Sin City to Tech City? The Case for Las Vegas](#)” by Sussan et al. (2017) takes us to Las Vegas to take a close look at how legacy industry and new industry development co-habit. The history of Las Vegas is partly driven by its isolation that has meant that the vibrancy

Table 3 Relevant aspects and characteristics of the place-based studies

Chapter	Primary actor(s) in consideration	Relationships with/among...	Transition dynamics	Transformation effects	Place description
2	Individuals	Organization, institutions	Multi-level process of serendipity, opportunity, and circumstance	Accumulated through enterprise and entrepreneurial activity	Community defined
3	Entrepreneurs among diverse actors	Institutions	Venture stage development	Growing Businesses	Entrepreneur perceived
4	Entrepreneurial firms	University-business-government (the triad)	Triad research collaboration	Strong supply and demand conditions for entrepreneurial firms through the triad	University campus
5	University executive management	Industry and government stakeholders, students (past and present), global research networks	Introducing knowledge-based innovation	Economic renewal	Regional
6	Entrepreneurs	Universities, research centers, hospitals, incubators, accelerators, state, city and local councils, angel and venture capital investors	Growing knowledge and technology industries	Development goals as defined by regions	SE Queensland
7	Migrant entrepreneurs	Migrant community, communities outside defined migrant population	Developing cultural and geographic proximities	Starting, sustaining, and developing businesses at segmented ecosystem level	Glasgow

(continued)

Table 3 (continued)

Chapter	Primary actor(s) in consideration	Relationships with/among...	Transition dynamics	Transformation effects	Place description
8	<i>Digitaltech entrepreneur</i>	Legacy and new industry, financiers, deal-makers	Developing university student entrepreneurs, importing entrepreneurs, attracting large tech firms, digital governance, citizenship, and marketplace	New industry emergence	<i>Las Vegas</i>
9	<i>Gazelles/high growth firms</i>	Networks of entrepreneurs, leadership, finance, talent, knowledge, and support services	Entrepreneurship culture, talent and intermediate services	Structural change as an emerging property of the system	<i>Provinces in the Netherlands</i>

Bold and italics indicates the perspective of the study where applicable

of the place has been developed by importing entrepreneurial talent and ideas to grow the entertainment industry that characterizes the identity of Las Vegas. Attempts to grow a technology business sector are reviewed in this chapter which makes apparent the limitations of talent movement between sectors and how history is tending to repeat with the importing of ideas and scale-up business opportunities. The demarcation between uptown (the Strip) and downtown also demonstrates that boundaries are easily created that can serve to define but also isolate communities. Nevertheless, the research suggests that transitioning a place can benefit by developing university student entrepreneurs, importing entrepreneurs, attracting large technology firms and improving technology or industry specific governance, citizenship, and marketplace. The transformation of place would be signaled through the emergence of a stable new industry sector diversified away from the legacy industry.

The chapter by Sussan et al. (2017) also points to issues of measurement and application of methods that are not wholly transferable between places. This issue with entrepreneurial ecosystem measurement is taken up by Stam (2017) in Chapter “[Measuring Entrepreneurial Ecosystems](#)”. Stam (2017) argues that identifying the entrepreneurial ecosystem as a system for measurement purposes gives the ‘ecosystem’ term more substance and makes clear the complex systems status of the phenomenon. By measuring entrepreneurial ecosystems and their outputs in this way we move from the ecosystem metaphor to a complex system model of the entrepreneurial economy. The ‘standard’ multivariate regression model of measurement does not seem to adequately account for the holistic ‘system’ and its quality for producing certain types of ventures, particularly those defined as ‘gazelles’. The transitions that seem to be important through this view are building an entrepreneurship culture, promoting talent development and providing intermediate services. The transformation would be evident as structural change as it emerges as a property of the system (Table 3).

5 Transitions and Transformations

By distinctly connecting the entrepreneurial ecosystem approach to questions of place-based transitions and transformations, the chapters contained within this work make clearly apparent the multi-level nature of the entrepreneurial ecosystem phenomenon. Daniel et al. (2017) in Chapter “[Deconstructing the Entrepreneurial Ecosystem Concept](#)” put it most pointedly by describing the entrepreneurial ecosystem as a multi-level process of serendipity, opportunity, and circumstance. By developing an entrepreneurial ecosystem the probability of entrepreneurs recognizing, discovering or emerging opportunities through the circumstances created and the serendipitous intersections between people and resources of all types, increases. Therefore it is not surprising to also observe the transitional patterns featured across the following chapters suggest activities are undertaken at multiple levels to influence individuals, firms, industry sectors and regions.

At the individual level there is clearly a need for entrepreneurs to be present within the ecosystem. Two approaches to transitions are suggested by Sussan et al. (2017) that include developing entrepreneurs through the university education system and attracting entrepreneurs to take up residence in a place. Before entrepreneurial activity takes place, entrepreneurs are needed.

At the firm level a further two approaches are highlighted. Supporting new firms through the various stages of development is suggested by Fuentelsaz et al. (2017). This transitional intervention is designed to shore up the firms that are created to assist in their survival and growth. Entrepreneurial firms are a characteristic of an entrepreneurial ecosystem and therefore ensuring new firm continuation appears to be a strategic option. O'Connor and Reed (2017) suggested a more directed approach toward facilitating the knowledge and technology sectors to inspire more new firms. However, Sussan et al. (2017) offer another firm level approach and that is to attract large and established firms into the region. This firm level intervention is specifically designed for spill over effects and importing new skills and capabilities into the region.

The industry sector level of transition strategies appear to be targeted more specifically at creating stronger bonds between the relationships of industry, research and government (Chinta and Sussan 2017). Creating the conditions for new knowledge and technology businesses to start and grow into thriving industry sectors seems to be the thrust for Villiers Scheepers et al. (2017). However, Sussan et al. (2017) are a little more specific by suggesting that developing governance, citizenship and marketplace for new knowledge and technology areas are important for attracting and developing a like-minded community around any particular technology sector.

To approach transition strategies through the lens of regions it would appear a concerted effort to create and enhance an entrepreneurship culture, develop talent and provide intermediate services bring a focus to institutional interventions (Stam 2017). Similarly Lassalle and Johnston (2017) encourage addressing the gaps in connectedness in both cultural and geographic terms will be important to enable transitions, again bringing institutional forces into focus.

While transition strategies are apparent across multiple levels, transformations on the other hand seem to be focused on a much narrower set of outcome indicators at either the firm or regional levels. Firm level indicators of transformation would include a notable accumulation of enterprise and entrepreneurial activity (Daniel et al. 2017), a greater number of growing businesses (Fuentelsaz et al. 2017) or increases in the rate of start-up, development and growth of businesses either sectorally or broadly (Lassalle and Johnston 2017).

At the regional level transformation indicators across government, industry and the research sectors would show strong supply and demand conditions for entrepreneurial firms to start and prosper (Chinta and Sussan 2017). Other indicators of new industry emergence (Sussan et al. 2017) or structural change (Stam 2017) may become apparent or more generally meeting specific regional development goals (Villiers Scheepers et al. 2017) and economic renewal targets (O'Connor and Reed 2017) would suggest transformational gains.

This book does not provide eternal truths about what entrepreneurial ecosystems are nor how they should be developed: other viewpoints on entrepreneurial ecosystems remain. However a cacophony of perspectives may constrain the accumulation of knowledge about how entrepreneurial ecosystems function, and how to improve them. By drawing attention of the phenomena to the specifics of place it highlights a particular perspective and reveals the array of approaches being adopted in various places. Some things may be common but other things may differ. In the next section we explore the research policy implications of this place-based approach to entrepreneurial ecosystems.

6 Conclusion: A Research Agenda

Throughout the set of works contributed to this volume, the multi-level nature of the entrepreneurial ecosystem becomes clearly apparent. Individuals, firms, industry sectors and regions are inter-related in the study of an entrepreneurial ecosystem. This multi-level conceptualization in some way responds to calls for further research that adopts a multi-level approach (Terjesen et al. 2013) but in other ways raises the same concerns as exists with any multi-level analysis. Concerns such as the complexity in chains of causation, embedded relationships that are structurally non-linear and fallacies that appear when moving between analysis of groups and the specifics of individuals (Diez Roux 2003) can be problematic. Multi-level modelling approaches may not easily account for the heterogeneity of cases but may be useful for understanding the bounds and norms of relationships and are therefore encouraged.

There is an apparent disparity among the objective outcomes of an entrepreneurial ecosystem also evident across the chapters. While some authors incorporate knowledge and technology as integral to the study of an entrepreneurial ecosystem others do not. While for some the account of the entrepreneurial ecosystem ends with firm survival and growth others are concerned with structural change. This suggests more theoretical work is still required to work through when particular viewpoints of the entrepreneurial ecosystem are best applied and under what conditions any analysis of an entrepreneurial ecosystem should vary the elements of inclusion.

Taking this disparity one step further brings into question the definition of an entrepreneurial ecosystem, and more fundamentally the ontological question of what an entrepreneurial ecosystem really is. The view expressed at the opening of this chapter that the definition of entrepreneurial ecosystems includes (entrepreneurial) agency and (human made) context that harbour humanly devised constraints and structures for human interaction that combine to shape the presence and form of important elements such as capital, labour and knowledge for entrepreneurship holds across the chapters. But even so, the actual conceptualization of the various studies of an entrepreneurial ecosystem varies with respect to scope, application, outputs and outcomes. This does support the idea that a systems

view is about recognizing patterns relevant to place but it also challenges the idea that there may be a universal portrayal that can be applied in cross-national or cross-regional studies. Therefore we are left with a serious question for further research that asks: How can knowledge on entrepreneurial ecosystems best be accumulated, and what should be prioritized?

Across the contributed studies there is reference to issues of leadership, governance, resources, and institutions but none clearly bring out how these particular aspects are accommodated, coordinated and arranged within an entrepreneurial ecosystem. Therefore the need for greater understanding of how these elements within an entrepreneurial ecosystem emerge and intervene in the development of entrepreneurial ecosystems is work still remaining to be done.

For policy-makers the relevance of this volume draws attention to the place specific needs of entrepreneurial ecosystems. Within the enclosed chapters various approaches to managing the transitions and defining transformations are discussed in more detail than outlined in this opening chapter. At a place specific level the history, culture, resources and institutional effects need to be taken into account. Entrepreneurship and value creation from entrepreneurial activity rests with the actions and agency of individuals. The job of the policy-maker in these circumstances is to identify the interventions that will encourage individuals into more purposeful actions to achieve place-based objectives. While a universal view of an entrepreneurial ecosystem may not be a feasible project, that is not to suggest that aggregated and multi-level 'systems' studies do not have a place. Indeed these will help to identify normal practices and potentially assist in identifying variation within datasets and provide insights into the causes of variation. Universally we already are aware that human capital, finance, labour, access to technology etc. are important. When they are important, under what conditions, what priorities exist among the options for developing elements and how may influence in the various systems best be exerted, are questions that the entrepreneurial ecosystems approach to understanding a regional economy are yet to discover.

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Author Biographies

Dr. Allan O'Connor is the Academic Director Innovation and Entrepreneurship Government Relations at the Entrepreneurship, Commercialisation and Innovation Centre at the University of Adelaide. Allan combines his extensive industry experience in confronting the growth issues of small and medium enterprises and business start-up to inform and guide his teaching and research. Allan's main teaching interests are in the assessment of business opportunities, entrepreneurial strategy and developing research skills. Since 2012 he has co-authored the leading Asia Pacific text, 'Entrepreneurship: Theory, Process and Practice', with Professors Howard Frederick and Donald Kuratko. His research examines the intersection between entrepreneurship, innovation and socioeconomic development which has led to the development of the Australian Cluster Observatory and an in-depth study of entrepreneurial ecosystems. His portfolio of over fifty research publications in international peer reviewed journals, books and research reports is testament to the significance of Allan's research agenda to his field. In application, his research is designed to inform policy-makers, regional development agencies and the practicing entrepreneur with respect to creating and managing the resources necessary to foster and develop innovation and entrepreneurship in response to the strategic challenges of economic change.

Erik Stam is Full Professor at the Utrecht University School of Economics, where he holds the chair of Strategy, Organization and Entrepreneurship. Next to this he is co-founder and Academic Director of the Utrecht Center for Entrepreneurship, and board member of the Utrecht University cross-faculty Strategic Research Theme Institutions. He held positions at Erasmus University Rotterdam, the University of Cambridge, the Max Planck Institute of Economics (Jena), and the Netherlands Scientific Council for Government Policy (WRR). He has been visiting professor or scholar at institutes such as the University of Cambridge, Hitotsubashi University Tokyo, Indiana University at Bloomington, Institute of Industrial Economics Stockholm, Leibniz Universität Hannover, University of Oxford, Tel Aviv University, University of Turku, and Zhejiang University (Hangzhou). He is editor of *Small Business Economics*.

He is interested into how socio-economic contexts (at the societal and organizational level) affect new value creation by individuals, and the consequences of this entrepreneurial behavior for the performance of firms and society. He has (co-)authored more than hundred books, book chapters, and articles on these and related topics, mainly in economics, geography and business/management. Next to his scientific work he is often consulted by governments, startups and corporates on innovation and entrepreneurship.

Fiona Sussan is Senior University Research Chair for the Center for Global Business Research, School of Advanced Studies at the University of Phoenix. Her research focuses on the digital economy and has received awards from American Marketing Association, Emerald, National Geospatial-intelligence Agency, among others. Professor Sussan's work has been published in Journal of Business Research, Small Business Economics, International Marketing Review, Journal of the Asia Pacific Economy, Journal of Intellectual Capital, Journal of Retailing and Consumer Services, Journal of Consumer Marketing, among others. Prior to her academic career, Professor Sussan worked in the finance industry in Tokyo, Hong Kong, London, and New York.

David B. Audretsch is a Distinguished Professor and Ameritech Chair of Economic Development at Indiana University, where he is also serves as Director of the Institute for Development Strategies. He also is an Honorary Professor of Industrial Economics and Entrepreneurship at the WHU-Otto Beisheim School of Management in Germany and a Research Fellow of the Centre for Economic Policy Research in London.

Audretsch's research has focused on the links between entrepreneurship, government policy, innovation, economic development and global competitiveness. He is co-author of *The Seven Secrets of Germany*, published by Oxford University Press. He is co-founder and Editor-in-Chief of *Small Business Economics: An Entrepreneurship Journal*. He was awarded the Global Award for Entrepreneurship Research by the Swedish Entrepreneurship Forum. He has received honorary doctorate degrees from the University of Augsburg in Germany, Jonköping University in Sweden and the University of Siegen in Germany.

Audretsch also was awarded the Schumpeter Prize from the University of Wuppertal in Germany. Audretsch has served as a member of the Advisory Board to a number of international research and policy institutes, including Chair of the German Institute for Economic Analysis Berlin; Chair of the Foundation for the Promotion of German Science in Berlin, Germany; the Center for European Economic Research in Mannheim, Germany; National Academies of Sciences and Engineering; New York Academy of Sciences; the Swedish Entrepreneurship Forum in Stockholm, Sweden; and the Jackstädt Centre for Entrepreneurship in Wuppertal, Germany.