Building Innovation-Based Entrepreneurial Communities: An Assessment of Practitioners' Interactions with Academically Driven Curriculum

by

Beto Juárez III

B.A., Stanford University, 2007

SUBMITTED TO THE MIT SLOAN SCHOOL OF MANAGEMENT IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF BUSINESS ADMINISTRATION
AT THE
MASSACHUSETTS INSTITUTE OF TECHNOLOGY

JUNE 2013

Signature of Author: _____

MIT Sloan School of Management
May 10, 2013

Certified by: _____

Scott Stern
Distinguished Professor of Technological Innovation, Entrepreneurship and
Strategic Management
Thesis Supervisor

Accepted by: _____

Maura Herson
Director, MBA Program
MIT Sloan School of Management

This page is intentionally left blank.

Building Innovation-Based Entrepreneurial Communities: An Assessment of Practitioners' Interactions with Academically Driven Curriculum

by

Beto Juárez III

Submitted to the MIT Sloan School of Management on May 10, 2013 in partial fulfillment of the Requirements for the Degree of Master in Business Administration

Abstract

A growing interest in innovation-based entrepreneurship has surfaced in much of world, producing a large body of related research and capturing the attention of those aiming to direct and improve the economic impact of "practitioners'" home regions. With growing research and limited examples of newly created and successful entrepreneurial communities formed, a clear gap has emerged between what the literature describes and suggests for the creation of entrepreneurial communities, and what practitioners are able to achieve. This thesis assesses how the MIT Regional Entrepreneurship Acceleration Program (REAP), a program formed as a way to address these shortfalls, has achieved lasting and meaningful impact for practitioners who have participated in the program.

Thesis Supervisor: Scott Stern
          Title: Distinguished Professor of Technological Innovation, Entrepreneurship and Strategic Management

Table of Contents

Chapter 1 | Introduction

A growing interest in innovation-based entrepreneurship has surfaced in much of world, producing a large body of related research and capturing the attention of those aiming to direct and improve the economic impact of "practitioners'" home regions. As a topic of study, academics have been researching entrepreneurial communities for more than two decades and have seen an increasing rate of research and interest in the work. A great deal of resources, both public and private, is accordingly being directed to creating innovation-based entrepreneurial communities in regions around the world. The interest stems from evidence that high rates of innovation based-entrepreneurship, and the high-growth companies that can accompany it, are powerful drivers of GDP and job creation. The people directing these resources, i.e., "practitioners," are charged with devising and implementing strategies to encourage increasing rates of entrepreneurship in their home regions.

As a group, practitioners come from a diverse set of backgrounds and experiences. Practitioners generally fall into one of the following roles: government, corporation, entrepreneur, investor, or academic. Sometimes a practitioner can have mixed roles, particularly that of entrepreneur and investor, as angel investing has become a popular way for entrepreneurs to encourage further entrepreneurial activity in their home regions. In this model, entrepreneurs who have become independently wealthy from a venture that they have successfully exited encourage future generations of entrepreneurs by investing part of their wealth in early stage companies.

To only give mention to angel investing, however, is to discount the tremendous efforts of other practitioner roles. All roles can have an important impact on an entrepreneurial community, and indeed are necessary to sustain continuous innovation-based entrepreneurship within a given region.

There is no widely agreed-upon framework for practitioners to formulate and implement strategies for community building in their home regions. From the literature advising practitioners, there are a host of lessons that practitioners may or may not learn from; however, a significant portion describes what *not* to do as opposed to what a practitioner is supposed to do. Further, evidence and recommendations are made to specific roles as opposed to teams of practitioners with diverse roles.

With growing research and limited examples of newly created and successful entrepreneurial communities formed, a clear gap has emerged between what the literature describes and suggests for the creation of entrepreneurial communities, and what practitioners are able to achieve. Even with a long list of reading and free information available across the web, practitioners have had a difficult time creating and building successful entrepreneurial communities.

The MIT Regional Entrepreneurship Acceleration Program (REAP) was formed as a way to address this shortfall. The program, which will be discussed further in Chapter 3, gathers teams of practitioners from regions around the world to participate in a structured and specific review and implementation of entrepreneurial acceleration in practitioners' home regions.

REAP is innovative in its approach and design. With few competitors, REAP offers practitioners unprecedented access to leaders in academic research in innovation-based entrepreneurship. It is an attempt to address the same difficulties practitioners have faced when trying to reach their goals of building entrepreneurial communities in their home regions.

This thesis will assess REAP's attempts to bridge this gap for the practitioners who have participated in the program.

Why I Am Writing This Thesis

With the completion of this thesis, I will complete my Master of Business Administration at MIT. While my immediate employment plans do not focus on building entrepreneurial communities, a majority of my academic and work experience has been devoted to this subject; I majored in International Relations at Stanford University and spent many years helping Spanish startups enter the US market in a small company called StepOne Ventures. At MIT, I have spent one year helping administer REAP as an academic interest, a part-time job, and as research for this thesis.

In helping administer the REAP program, I have worked one-on-one with both the faculty and Director of REAP, concentrating on aspects of program administration and curriculum development. Specifically, I engaged directly with seven participating REAP regions between their first, second, and third workshops, helping teams to assess and develop their regional strategies for acceleration. I also interacted with faculty in helping to administer curriculum and help REAP teams. In many ways, my activities with the teams and faculty were similar to the role of a TA in a traditional classroom setting.

In this position, I have been able to uniquely observe practitioners' interactions with the curriculum and the strategy created by practitioners, guided by the faculty leading the REAP program.

This thesis aims to assess the interaction between academic research and the MIT REAP program as it relates to the strategies and actions taken by practitioners. It seeks to contribute to the understanding of building entrepreneurial communities by lending my unique experience and observations to this area of research and learning.

Chapter 2 | A Literature Review of Innovation-Driven Entrepreneurship and Entrepreneurial Community Building

Entrepreneurial Communities As a Focus for Academic Literature

Setting the stage for the incredible interest in entrepreneurial communities is research showing that GDP and job creation are linked to innovation-based entrepreneurship. King and Levine (1993) show that financing from risk capital to innovative firms boosts productivity and economic growth within a region. Haltiwanger, Jarmin, and Miranda (2009) found that in the United States, young firms (i.e., those started by entrepreneurs) were almost single-handedly responsible for all job growth over a period of time. Acs et al. (2006) show that knowledge spillover, and the entrepreneurial value creation that accompany innovate firms both account for the highest GDP growth in distinct US regions. Edward Lazear of Stanford University sums up the research stating "the entrepreneur is the single most important player in a modern economy."

Beginning in the early 1990s, academic literature began to explore the settings, success factors, and results of existing entrepreneurial communities. Van de Ven (1993) first pointed to the existing infrastructure necessary to help entrepreneurs build their firms, as opposed to the "lonesome entrepreneur" model that is still perpetuated in media and popular culture.

Saxenian (1994) wrote about the factors that led to Silicon Valley taking leadership over Boston's Route 128 over the course of the 1980s and 90s. She argues that a culture of openness and information sharing was the key factor helping Silicon Valley to take its leadership position in technological innovation during this time. Saxenian showed direct links created by key entrepreneurs who openly worked and networked within a larger Silicon Valley network of influential companies. This culture and practice of openness prepared Silicon Valley to better adapt to large industrial shifts, such as the move from

semiconductors to personal computing, while Route 128 remained specialized and subsequently less able to incubate the formation of new technology ventures.

Malecki (1997) later showed how venture capital firms have been attracted to a region because of its high density of successful entrepreneurial firms. Neck *et al.* (2004) explored the components necessary to build a cluster of technology entrepreneurship in Boulder, CO after reviewing the "genealogy" of technology organizations there. The authors found that incubators, spin-offs, networks, infrastructure, and culture were all important components of new venture creation.

Universities and government also have a profound impact on entrepreneurial activity. Though not a requisite, universities can provide important leadership in interdisciplinary studies that help catalyze innovation. Feld (2012) emphasizes the constant flow of new and eager entrepreneurial participants (i.e., students) that new ventures can benefit from. Porter (1998) showed that reducing red tape and providing subsidies and grants positively affect applications for permits and licenses. Additionally, Lerner (2008) showed how certain public investment vehicles, when structured correctly, can positively impact the amount of venture capital invested in a region.

Porter (1998, 2008) emphasizes the role of clusters, defined as "a geographic concentration of related companies and associated institutions in a particular field, linked by commonalities and complementaries," (Stern, Murray, and Aulet 2011-2013) in entrepreneurial communities. Stern and Porter discovered that clusters – especially innovative firms' proximity to one another – are important to new venture development. These findings contribute to the understanding of entrepreneurial communities as "ecosystems" of important roles and supporting structures that help build and grow innovation-based ventures. These findings further reinforced the idea of regions themselves as a source of competitive advantage. This understanding of clusters and their contribution to entrepreneurial ecosystems is a critical piece of the framework used by REAP.

For example, in the life of a hypothetical new venture, we can view many times where an entire ecosystem of players helped support the founders and growth of a new company. The founders were likely employees working under another entrepreneur before founding their own company. They competed in a local accelerator contest which gave them valuable feedback and introductions to investors and mentors. They likely used experienced lawyers, accountants, and consultants who are familiar with entrepreneurial firms and their unique challenges. In building their product, the founders recruited former colleagues, or employees of competitive firms without serious legal repercussions. They raised capital from investors comfortable with taking a high amount of risk and were subsequently paired with mentors that lent valuable advice from their own entrepreneurial experience. In building their products, they are able to contract with highly skilled providers in order to accelerate their development time. Private equity financers and bankers helped the founders grow a very large company with significant impact on a region. Finally, realizing how much various actors in their ecosystem helped them achieve their own success, the founders of the firm "give back" by mentoring and financing new entrepreneurial firms.

This story, while hypothetical, is similar to a majority of stories from high growth ventures in the Boston and Silicon Valley ecosystems. It is the same type of story that practitioners want to tell about their home regions, but find difficult to recount for lack of real world examples.

Entrepreneurial Communities As a Focus for Practitioners

Released in 2008 as a book, Josh Lerner's "Boulevard of Broken Dreams" is an important work because it aims to bridge the divide between academic and practitioner readership. The book is particularly important to government practitioners, many of whom have long been trying to spark innovation-based entrepreneurship in their home regions, with little success. Lerner goes through a reasoned and careful analysis showing why so many government initiatives have failed in their efforts, including the temptation for regulatory capture and

incompetence as to the policy initiatives that can actually help entrepreneurs. He is careful to point out, however, specific areas where government policy has created the right environment for entrepreneurial communities. He cites Singapore (correctly "setting the table"), New Zealand (correctly structuring a public-private investment vehicle), and India (successfully harnessing diaspora networks) as successful policy initiatives that have helped build entrepreneurial communities.

Recently, serial entrepreneur and angel investor Brad Feld has lent his viewpoint to the issue, releasing his book "Building Entrepreneurial Communities" in 2012. The book is a summary of his experience and lessons learned given his leadership and critical role in building the well-respected Boulder, CO entrepreneurial community. From this experience, he builds his "Boulder Thesis" for building entrepreneurial communities:
1. Entrepreneurs must lead the startup community.
2. The leaders must have a long-term commitment.
3. The startup community must be inclusive of anyone who wants to participate in it.
4. The startup community must have continual activities that engage the entire entrepreneurial stack.

Feld's take is a decidedly entrepreneur-focused viewpoint. He almost completely writes-off other community actors, such as government, giving them purposefully smaller importance than entrepreneurs. For communities where few entrepreneurs already exist and cultural roadblocks are significant, this can be a frustrating lecture to hear from Feld.

"Collective Impact" as a Framework for Assessment of Entrepreneurial Community Building

In chapter four, this thesis will assess practitioners' actions in attempting to accelerate their regions' entrepreneurial activity. In order to have a base-line assessment of action, this thesis will rely on Kramer's "Collective Impact"

framework as a model for successful social change achieved by the collective actions of stakeholders attempting to achieve a common goal. Because Kramer and his colleagues have done significant research on how successful collective impact is achieved, this thesis considers it the best framework available for assessing the kind of change REAP teams are attempting to achieve.

In assessing the preconditions for collective impact, Kramer identifies three requisites:

1. An influential champion
2. Adequate financial resources
3. Sense of urgency for change

In assessing the actions necessary to achieve collective impact, Kramer identifies three phases:

1. Initiate action
2. Organize for impact
3. Sustain action and impact

Finally, Kramer identifies the need for a "backbone" organization that has sufficient leadership and resources to organize and galvanize stakeholders through the prescribed phases. A successful backbone organization will also develop and update a strategic action framework that identifies the problem through accepted research, sets a goal for desired change, and outlines the approach and evaluation of groups' efforts. Finally, a successful backbone organization will set a shared measurement system that will allow all stakeholders to agree upon and measure their impact. Recently, web technologies have helped regions improve the reach and impact of this shared measurement by allowing dispersed stakeholders to easily access and stay informed of key measurements.

Shared measurement in entrepreneurial community building is most likely to assess the level and growth of entrepreneurial activity within a region. For example, measurement should capture the creation of innovative firms within a

certain timeframe. Accelerator and incubator programs will want to search for further data points including failure rates, funding rates, and growth rates of participating companies. Finally, each region may adjust measurements to strategic clusters by measuring growth in jobs, patents, and companies within the ecosystem.

The backbone organization should bear the responsibility for designing, creating, and updating shared measurement systems. Communication and accountability by the backbone organization catalyze actors into action surrounding collective impact.

Chapter 3 | MIT's Regional Entrepreneurship Acceleration Program

Origin of the Program

Under the guidance of Professors Scott Stern, Fiona Murray, Bill Aulet, and Ed Roberts, MIT launched the Regional Entrepreneurship Acceleration Program (REAP) in 2011. The program was created to help regions (defined as geographic areas of approximately 10 million in population) to assess and accelerate the development of their entrepreneurial communities.

REAP is a non-degree course under the MIT Sloan Executive Education department which hosts and organizes a variety of non-degree courses. In program design, however, REAP, diverges significantly from other Executive Education courses. First, the program was designed in close collaboration with leaders from MIT's Martin Trust Center for MIT Entrepreneurship. The Trust Center (as it is more informally known) exists as one of MIT's many resources for student entrepreneurs. The center is led by Bill Aulet, a Senior Lecturer at the Sloan School and is host to many undergraduate and graduate student clubs which aid and accelerate student entrepreneurs at MIT (e.g., MIT's well-known $100K competition). REAP's director and part-time resources all work in the Trust Center and consistently interact with a revolving door of entrepreneurs, investors, executives, and government leaders who visit the Trust Center on a daily basis. This placement and exposure for REAP's leadership is deliberate: As one of the main hubs for entrepreneurs in the Cambridge entrepreneurial community, REAP can specifically benefit from exposure to the key players and ideas that give Cambridge its position as one of the premier entrepreneurial ecosystems in the world.

Bill Aulet describes the origins of MIT REAP with the following anecdote: "At MIT, we are constantly being asked by leaders from all over the world about how to help create an ecosystem similar to what we have here in Cambridge. After years of flying to a city, delivering a speech, and failing to see any real

impact, we decided to formalize a program that could cause real change. We created REAP so that we could make a more significant impact than simply delivering a talk, then leaving leaders alone, without a strategy, and without a course of action. REAP member regions are looking for the best MIT has to offer in regional entrepreneurship building and it is our goal to deliver exactly that."
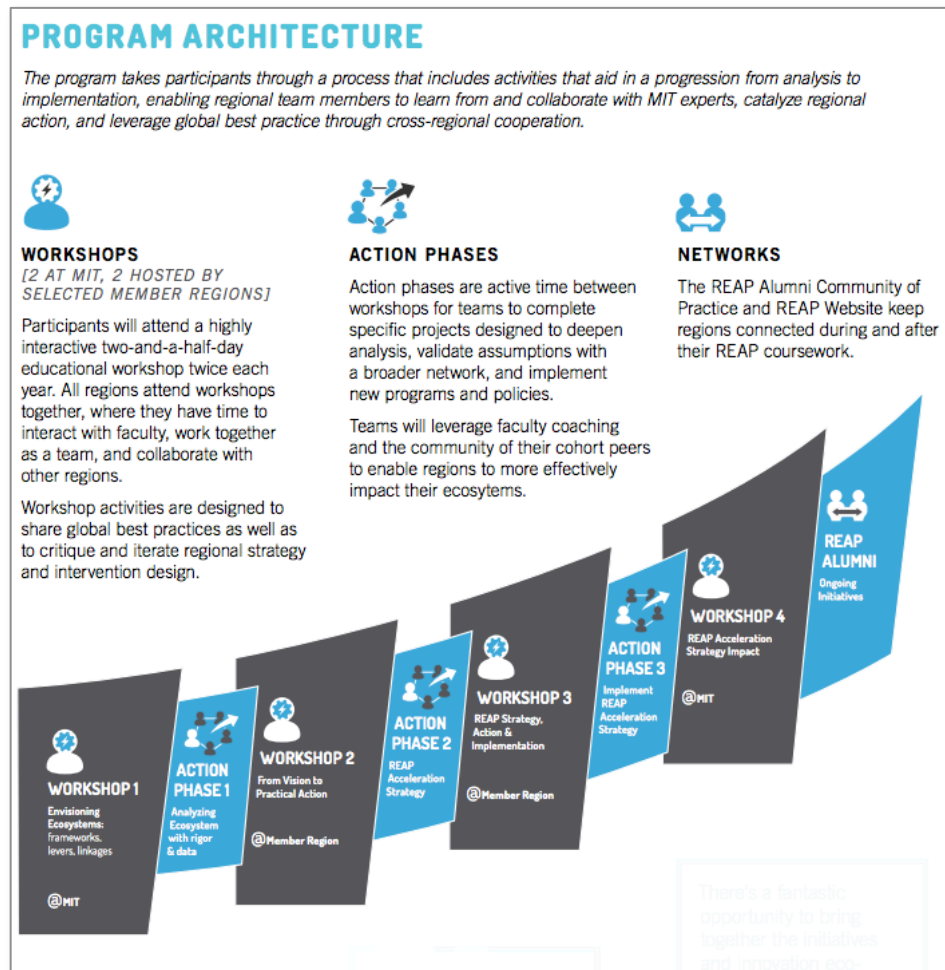
Program Design

As a program, REAP is architected as a two-year engagement in which all teams must participate. Before being accepted into the REAP program, teams must recruit a leader from every one of five pre-defined stakeholder roles (entrepreneur, government, corporation, investor, and university) to participate in the two-year engagement. In many teams, there are multiple participants from each role (e.g., two government representatives) and there may be roles missing from a team. However, missing roles are always highly encouraged to be filled, even in the middle of the two-year program.

In REAP's two years, teams participate in four workshops (two on the MIT campus, two in the cities of participating regions) where all teams and REAP faculty are gathered together in the same location for a long weekend of lectures, cross-team interactions, and area visits demonstrating community-building efforts. In between the workshops, teams participate in action phases that are relevant to the previous workshop's learning and discussions. Faculty interaction and coaching are highly important to the completion of each action phase, while cross-team interaction tends to be the focus of each workshop session. Each team is paired with one advising faculty member who leads the team in action phases and in general advising.

From Workshops 1 to 2, teams are expected to research and design a strategy customized to a region's existing entrepreneurial and innovative capacity. From workshops 2 to 3, teams are expected to implement action plans and report back to themselves, REAP faculty, and other teams. From workshops 3 to 4, teams are expected to continue implementing strategy plans while building performance

measures visible to the REAP team and other outside stakeholders. Finally, alumni of the program are expected to continue to participate in informal networking and information sharing.

Exhibit 3.1 – Graphical Representation of MIT REAP Program Design
Source: MIT REAP, 2012

MIT REAP has three unique elements as part of its program design:
1. The requirement that teams choose a specific strategy to enact only after significant analysis and discussion
2. The long-term nature of the program forces practitioners to take long-term strategies and allows for significant testing in strategy implementation

3. Cross-team and cross-role collaboration give practitioners a unique experience and immediate feedback loops for strategy and implementation planning

The MIT Framework for Building Innovation-Based Entrepreneurial Communities

The framework used in REAP stems from academic research performed by the REAP faculty and their colleagues. The first important element of the framework is the distinction between innovative firms and small businesses. While both kinds of firms are indeed entrepreneurial in the sense of beginning a new venture, innovation-based entrepreneurship refers to firms that commercialize some kind of innovation, usually technology-driven, that enables the firm to capture outstanding value and growth. Innovation-based entrepreneurship is the sole focus for REAP and the MIT faculty. This emphasis comes about both because of the different economic effects of innovation-based firms, as well as the different needs of innovation-based firms and entrepreneurs. By focusing on innovative firms, the REAP framework aims to better serve the leaders and firms that will have the most profound economic effect within a region.

The second element of the framework relies on a concept called innovative capacity. Innovative capacity is the ability of a region to generate innovative ideas from inception to market. A region's innovative capacity is related to, but distinct from technologically advanced activity (e.g., NIH funding for medicinal research). Successful innovative capacity refers to technological innovation coupled with a region's ability to extract economic value from that innovation (e.g., Roche purchases a startup firm that licensed a promising NIH-funded medicine that was developed over years of experimentation and FDA trials).

The third element of the framework relies on a related concept coined entrepreneurial capacity. Entrepreneurial capacity is the ability of a region to support an innovative firm from conception to maturity. Factors that contribute to entrepreneurial capacity include people, funding, infrastructure, policy,

culture, and demand for products/services. Taken together, a region with significant entrepreneurial capacity will nurture and mentor a well-driven entrepreneur from conception to exit (i.e., a liquidity event). The best entrepreneurial communities also encourage continued risk-taking through the form of angel investment where successful entrepreneurs invest their wealth in a new generation of entrepreneurs, mostly in the same region.

The final element of the REAP framework relies on strong and constant linkages formed between innovative and entrepreneurial capacity (exhibit 3.2). Understanding entrepreneurial and innovative capacity, and the linkages that can form between them, forms the base of the REAP framework for building innovation-based entrepreneurial communities. A successful innovation-based community that leverages the linkages between entrepreneurial and innovative capacity can "generate successful innovations and entrepreneurs, as the region or country achieves a competitive advantage relative to others and grow forward" (Moon and Stern 2013).
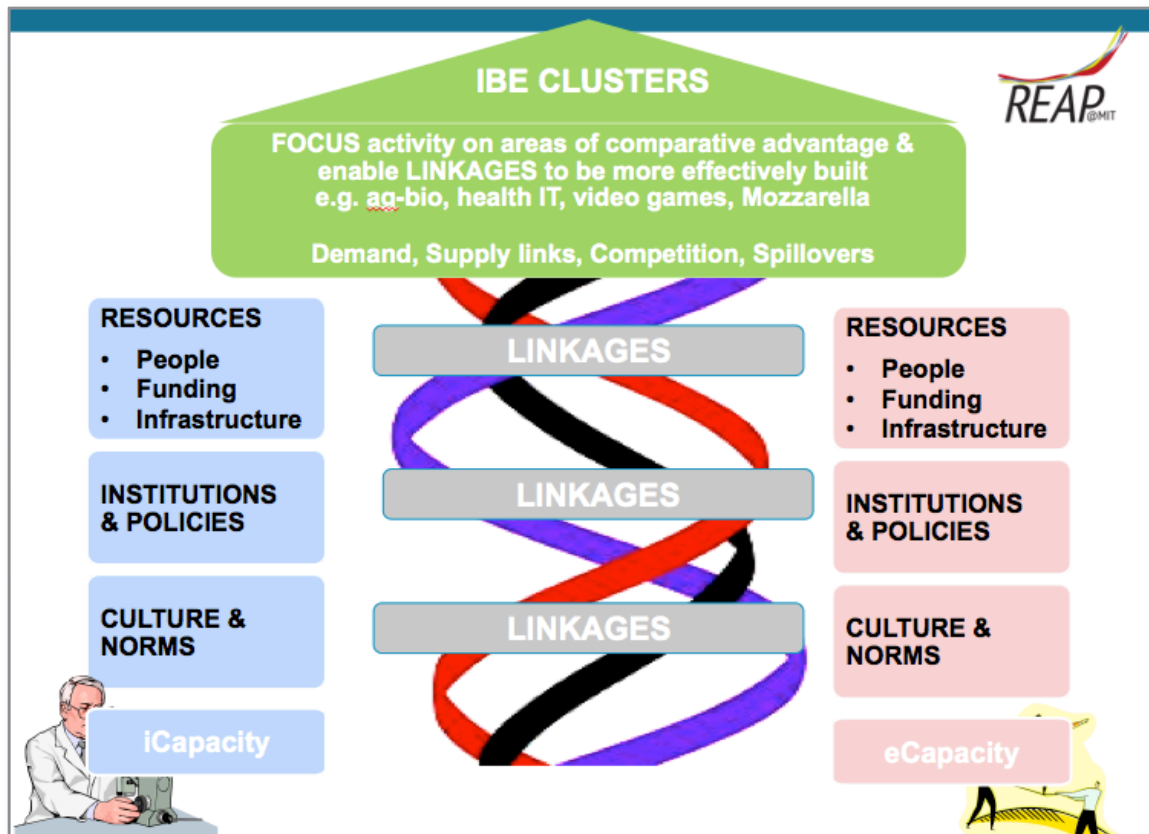
Exhibit 3.2 – Critical Lesson from Successful Entrepreneurial Communities: The Importance of Linkages

Source: Professors F. Murray and S. Stern, MIT REAP

A "cluster," a concept introduced by Porter (1990), is related to the communities and ecosystems discussed in this thesis, with emphasis given to agglomerations of specific industries that give a region a critical mass of resources and competencies so as to give the region a competitive advantage over others. The Australian wine cluster exemplifies a community that benefited greatly by understanding clusters through the lens of the discussed framework.

The story of the Australian wine industry starts in the early twentieth century, when, just as occurred in the United States, some European winemaking techniques were imported to a foreign land. Unlike the American wine industry, however, Australia never achieved a large export market due to the low quality of wine produced. In the early 1990s, existing linkages from Australia's existing

IT, agricultural research, and export clusters were formally tied together into the existing wine cluster. During that time, new organizations for education, technology, and export (e.g., the Australian Wine Export Council and the Grape and Wine R&D Corporation) coincided with mass private investment in the wine industry. Australia successfully took its existing innovative capacity, married it with a formalized effort to boost entrepreneurial capacity, and created a strong and dynamic wine cluster which grew from USD$300M in exports in 1995 to USD$2B in 2011 (USDA 2012). Perhaps more importantly, Australia created a powerful new industry responsible for significant growth in both GDP and exports.

Competitive Offerings to REAP

REAP has few, but notable competitive offerings for leaders with similar intentions of helping regions build entrepreneurial communities.

The Babson Entrepreneurship Ecosystem Project is one of the best-known programs with goals similar to REAP. Led by the charismatic Professor Daniel Isenberg, the program leverages the Babson College curriculum, which touts entrepreneurship as an exclusive focus. By design, the BEEP system resembles a consulting project where students, led by Prof. Isenberg, lead regions through a one-by-one assessment of their regions, with prescriptive actions that take place over the course of 12-24 months. The project is "kicked-off" on-site with a group of leaders from the community who come to a "consensus about mission and objectives, time frames, assets and liabilities of the current ecosystem" (BEEP Website). Specific BEEP initiatives fit within Professor Isenberg's coined definition of entrepreneurship: "a contrarian coordination and capture of extraordinary value" (Isenberg 2013). This approach differs from REAP by not placing an emphasis on innovation-based entrepreneurship and by not acting within a particular framework for participating regions. The program shares an emphasis on long-term engagements paired with implementation and subsequent feedback loops.

Other academic offerings include curricula devised by other universities that are known for their proximity to and knowledge of entrepreneurial ecosystems. Stanford University's Graduate School of Business offers an educational program for regional leaders called the Stanford Program on Regions and of Innovation and Entrepreneurship. The program largely exists to enhance the research capabilities of academics interested in observing regional entrepreneurial activity. Combined with partner regions in China and Japan, the Stanford program exists outside a structured offering to help regions implement strategies around entrepreneurial acceleration.

In addition to offerings from academic institutions, non-academic resources have emerged to help practitioners devise and implement community-building strategies. The Plug and Play Tech Center, headquartered in Sunnyvale, CA, has pioneered an increasingly popular model. As one of the largest incubators in the world, Plug and Play has experience seeing hundreds of Silicon Valley startups walk through its doors, investing in a handful of them along the way. Given this position, Plug and Play offers to have experts in entrepreneurship travel to a given region, hear pitches from local companies, judge the companies, and give feedback. The program is usually sponsored by a local association or government entity within the region. This kind of engagement can be very helpful for companies in international regions to gain exposure to typical Silicon Valley advice and investment criteria. However, the interactions are very short and rarely result in an international investment on behalf of the judges or Plug and Play. The model also does not engage other community roles, besides entrepreneurs, in any significant way.

These competitive offerings offer a diversity of approaches for practitioners. REAP, being one of the longest, and most expensive programs, is tailored to the most committed (or perhaps the most well-resourced) regions. In addition, REAP, by virtue of its program design, also allows the most coaching from experts (i.e., faculty and administration) and the most cross-regional interaction.

The First REAP Cohort and Its Experience

A cohort of seven regions was selected to participate in the first cohort of REAP. Teams from Hangzhou (China), Finland, New Zealand, Scotland, Istanbul (Turkey), Valencia (Spain), and Veracruz (Mexico) were gathered and recruited to participate in REAP.

Exhibit 3.3 – The Seven Regions of the First REAP Cohort
Source: MIT REAP, 2013

Teams apply to the program for a variety of reasons; however, economic development and job creation, as demonstrated by the academic literature, are usually chief among the goals of REAP teams. Six of seven regions were partially or wholly sponsored by a government entity, reinforcing the economic impact desired by regions' policymakers.

There has been a diversity of performances by the regions observed. One region has had to replace its team "champion" (leader) and has undergone a leadership vacuum. One team has had difficulty finding the government funding they were initially promised to ensure participation in REAP.

More successful teams have had consistent leadership driving their teams. Additionally, existing initiatives and resources devoted to community building have helped the most successful REAP teams devise their strategies, implement initiatives, and track progress in a more successful way than less successful regions.

Final impact for the first cohort is difficult to judge at this time given the relatively short time frame given. However, all have produced tangible work, as requested by REAP faculty, and have used the progress to continue working on their strategies and goals. Success factors for regions will be discussed further in chapter 4.

Chapter 4 | An Observer's Assessment of Practitioners' Application of Lessons Learned in The Community-Building Curriculum

In chapter 2, this thesis reviewed Kramer's necessary conditions for successful collective impact. Given that each REAP region is attempting to organize and galvanize for "collective impact" in a similar fashion to what Kramer describes, this paper will assess REAP regions' progress along Kramer's framework.

It is worth noting that Kramer himself does not organize his conditions for collective impact in the same way as presented in this thesis. The conditions have been reorganized in a matter more suitable for assessing entrepreneurial community building: One set of preconditions and another set of phases necessary for achieving collective impact.

Ensuring Preconditions for Collective Impact

To review, Kramer has three preconditions for effective collective impact:

1. An Influential Champion
2. Adequate Financial Resources
3. Sense of Urgency for Change

1. Influential Champion

REAP's program design has a unique ability to propose a leader and lend good experience in leading impact in his region. REAP achieves this by appointing and assigning leadership to a "champion" in each region. This champion is charged with leading team communication and organization. By virtue of their role as a central hub for communication within a team, the leader gains valuable experience and influence within his team, and, by extension, influence within his region.

Where REAP may fail in the leadership precondition is its ability to maintain a leader for the amount of time necessary to impact collective change. Like any number of initiatives, a lack of sustained leadership can lead to a vacuum of organization, communication, and commitment within a team. This kind of scenario has already played out within one of the REAP teams as the original champion for the region left in between the first and second workshops, leaving the team significantly behind others in their development. The team has experienced difficulties in recruiting a committed champion and its results have, accordingly, suffered.

2. Adequate Financial Resources

REAP does a good job of preparing regions to commit significant resources to its initiatives for collective impact. To participate in REAP, regions must secure significant financial resources to pay the MIT program fees. These fees, which amount to more money than can usually be paid by a single individual, are substantial and require significant institutional buy-in to be secured. Similarly, resources for collective impact can be substantial and the practice of securing these resources can be made easier if commitments have been made before.

In addition to the fees paid to participate in REAP, many teams have already committed significant sums of money to community-building efforts by the time they arrive in REAP. New Zealand, for instance, has had a two decade-long public policy effort called NZVIF, which has poured millions of public dollars into venture capital investments, preparing policy leaders to make significant future commitments to community-building efforts.

3. Sense of Urgency for Change

Creating a sense of urgency may be the one area where the REAP model may be insufficient for ensuring collective impact. Through observation of the REAP teams, a clear difference has emerged between those regions which have a clear urgency behind them versus those that lack such an urgency. For example, one team, which has had to endure over five years of severe economic distress

associated with many parts of Europe, has an incredible amount of urgency behind their work, showing their desire to quickly resolve the economic distress that has plagued their region. Meanwhile, a similar team that has an economy less affected by the European recession fails to show a similar desire to radically change the entrepreneurial environment in their home region. This "urgency requisite" will likely continue to be an issue for REAP teams as it is difficult to only recruit regions that have a clear sense of urgency behind their efforts.

Ensuring Participation In The Three Phases of Collective Impact

Kramer identifies three phases necessary to implement collective change:

1. Initiate Action
2. Organize for Impact
3. Sustain Action and Impact

1. Initiate Action

REAP does an excellent job initiating and guiding teams through this important phase. Included in this phase is the need to identify and organize key players, understand the existing work underway, create a governance structure around the team, and recruit champions who will lead the effort. By the time teams reach the second workshop of REAP, they should all be fully engaged in this phase, as it is necessary for future commitments prescribed by the REAP curriculum.

2. Organize for Impact

Kramer describes this phase as "requiring stakeholders to work together to establish common goals and shared measures, creating a backbone organization, and beginning the process of aligning many organizations." Creating common goals and shared measures are the primary goals of workshops 2 and 3 of REAP. Varied success in this phase has been observed so far as many teams have set a strategy for their teams and begun implementing actions and gaining feedback according to the prescribed REAP design. However, others teams have had

difficulty choosing and remaining committed to a strategy, switching strategy priorities, and sometimes lacking the execution that can plague teams that are insufficiently organized or committed.

It should be noted that the REAP administration has achieved success through two important and learned practices. The first is a request by REAP faculty to teams to identify and attack a "must-win" goal for each region. This kind of isolated focus may seem contrary to the spirit of collective impact; however, it is requested because of the power a single win can give to teams including momentum going forward. Scotland's "working group" initiative is a good example of a must-win battle that the group undertook. In order to secure a better understanding of the needs of the entrepreneurial community, Scotland's REAP team went directly to entrepreneurs to solicit advice and feedback on how to better serves their needs. The team completed over 40 interviews with current Scottish entrepreneurs and identified role models, peer groups, and skill building as high-priority initiatives that would help build a more successful entrepreneurial community. The Scotland REAP team is now using the positive momentum from their initiative to move into a second phase of identifying action areas and assigning new working groups to achieve change in those areas (Reeves 2010).

Exhibit 4.1 – REAP Lesson to Practitioners: Choose a Must-Win Battle
Source: Professors F. Murray and S. Stern, MIT REAP

The second practice is one that is unique and has become increasingly important for REAP – the ability to gather and have teams communicate with one another in a highly engaged manner through "cross-team" communication" In this communication, teams present and gain feedback on their approaches, goals, and measures from other participating REAP teams. REAP administration has observed that this type of cross-team communication can be much more valuable to teams than simply learning from experts in a classroom-lecture format. Teams also present and gain feedback from each other by role (e.g., all investors from different regions meet and discuss among each other) for further cross-team feedback. Teams value being able to discuss and assess operational and real-world strategy with other teams that are doing the same. In this learning, the REAP format has been incredibly valuable in bridging the gap between academic theory and community-building practice.

The creation of a "backbone organization" will be discussed later in this chapter.

3. Sustain Action and Impact

Sustaining action and impact is the one condition that is most difficult to assess given the relatively short time frame of the program and the time passed since its inception in 2011. Kramer concludes that this phase can take "a decade or more." In order for this phase to be successful, it is important that the leadership and resources dictated in the previous preconditions remain just as dedicated to collective impact as at the beginning of the process, when the REAP curriculum is administered. If they do remain committed, they are very likely to achieve some success, as already demonstrated by REAP teams with a strong sense of leadership and significant resources behind them.

In reviewing the REAP teams, it is possible to point to the New Zealand government as already having begun a community-building initiative long before they began participation in REAP. The previously mentioned NZVIF venture investment program can be viewed as a larger government-led community-building initiative beginning in the early 2000s. The government has made a continued effort to boost both entrepreneurship and venture capital in the small country. Early indications are that the efforts are working – both the number of deals and amount of venture capital invested has increased since the establishment of the NZVIF fund in 2003 (Lerner 2005).

Creating the "Backbone Organization"

One of REAP's great successes by design may be that, by requiring REAP regions to gather stakeholders from all areas of an entrepreneurial ecosystem, it has created a de-facto backbone organization similar to what Kramer describes. These REAP teams, when correctly fashioned from all stakeholders (government, university, corporation, investment, entrepreneur), successfully create a coordinated effort to galvanize innovation-based entrepreneurship in their home regions. Coordination, communication, and resource allocation are not always very easy. However, it would appear that most regions have successfully used

the REAP team design to leverage these tasks, which are difficult to sustain in a coordinated manner. Assignments and measurement tracking that are required by the REAP curriculum help to establish a communication and rapport among team members who are rarely in the same office or city simultaneously.

REAP regions potentially fail by Kramer's backbone organization requisite in two ways: 1) a lack of sufficient funding, 2) a lack of organizational separation in order to coordinate organizations with competing interests.

Kramer suggests that backbone organizations should be given sufficient funding to sustain themselves for a five-year period. Given salaries, marketing, and administrative costs, this requisite can be a daunting request for any collective action. Indeed, Kramer identifies this requisite as the cause of failure for many efforts. REAP does not make resource-allocation for a backbone organization a requisite for participation in the program. Few organizations are able to individually resource this kind of effort. If there is one kind of organization that does have the resources, it is regional governments, which are commonly unwilling to outsource policy efforts.

Because REAP teams tend to be funded by the government of a home region, policy actions can have a voice that is too loud compared to other roles in a region's team. It also means that coordination efforts from REAP can instead appear as if they come from a department within a region's government. By not separating the government from a central coordinating organization, efforts can be undermined because they do not have diverse buy-in from all roles. Resource allocation may also be focused too much on efforts that are explicitly government-supported. Finally, policy workers who are voted in and out with the tide of public sentiment may be unable (or unwilling) to implement long-term policy.

REAP does a good job of helping teams create a collective impact agenda. This agenda, which Kramer describes as "a shared vision for change including a common understanding of the problem and a joint approach to solving it," is

both a record of the research done to achieve impact and a blueprint for actions meant to build community. For REAP teams, actions 1) enhance a region's innovative capacity, 2) enhance a region's entrepreneurial capacity, or 3) increase linkages within a region. Because REAP teams bring together diverse stakeholders which must contribute to and approve this agenda, it has a higher chance of succeeding, contributing many advocates for the strategy within a region. Further work can be done to ensure a central document is produced at a certain deadline in the REAP program, and is published and shared easily (likely in an online format).

In line with the need to create an impact agenda is the need to create and publish impact measurements that can be periodically reviewed. This ability to judge action against concrete metrics has proven to be a critical piece of achieving collective impact. REAP Administration is currently helping teams disseminate measurements easily via web portal, contributing to better accountability and communications regarding progress. This single action has the potential to be one of the most impactful design elements that REAP teams will benefit from. Whereas a diverse stakeholder initiative may not allow for practitioners to measure impact, REAP should be able to easily communicate goals and measurement in an easily accessible and public manner. This kind of measurement tool should be a priority for REAP administration for the benefit of member regions.

Additional Considerations Beyond Collective Impact

REAP may fail in what Lerner (2005) calls "setting the table." This concept focuses on the policy changes that governments can make in order to encourage entrepreneurship and risk-taking before it actually occurs. For example, some nations' laws actively discourage new venture formation by making managers personally responsible for debts in the event of a bankruptcy. This kind of policy clearly creates disincentive for new venture formation. By focusing on long-term strategy, REAP may potentially ignore some of the easier and quick-term policy

solutions that can encourage the entrepreneurial climate encouraged by "setting the table."

Acs et al. (2007) has clear recommendations in setting the table: 1) Ensure a very simplified regulatory process (particularly the formation of new ventures), 2) limit progressive tax policy that punishes entrepreneurs for successfully exiting a company, and 3) build infrastructure for easy movement of persons and information (i.e., telecommunications and airports). While somewhat disparate policy suggestions, these three recommendations represent a clear set of priorities that policy makers can implement with limited need for diverse stakeholder buy-in. The REAP teams, given their usually high level of government representation, can emphasize these kinds of "easy wins" for government practitioners. These kinds of wins can further provide positive momentum for sustaining strategy implementation.

As demonstrated by Roberts' (2009) paper "Entrepreneurial Impact: The Role of MIT," a central institution such as a university can play a central role in serving an entrepreneurial community. Roberts found that MIT had significant economic impact ("MIT alumni companies generate annual world sales of $2 trillion, producing the equivalent of the eleventh-largest economy in the world") in part or in whole because of the entrepreneurial activity associated with the institute. Kramer's framework does not need to include this finding as a requisite for collective impact; however, the potential of institutional impact should not be ignored, as it remains a strong catalyst for many entrepreneurial communities around the world.

Success Factors in Achieving Collective Impact

In observing the first REAP cohort, there are some success factors that emerge in helping teams to achieve collective impact. The first factor is having a government or policy body that has already been supporting entrepreneurial community building. Regions such as Scotland and New Zealand, which have had publicly-supported community building efforts over ten years old, not only

have tangible momentum, but also have more buy-in and awareness from existing stakeholders. Regions such as Veracruz (Mexico) and Istanbul (Turkey) started their efforts in a more difficult political and cultural environment.

The second factor for success is the presence of an existing technology cluster in the region. Even if a cluster does not have a history of promoting entrepreneurship, regions can point to past innovative efforts as evidence of the positive impact such ventures can create. In Finland, the existing telecommunications cluster surrounding Nokia provides a positive reminder to Finns that innovation and technology can significantly impact the region.

The third factor (which has already been mentioned, yet bears repeating) is the presence of a strong and durable leader that will guide impact for a region. This leader is crucially important in setting the expectations and guiding efforts across a team. The best leaders observed have all had community building as their primary job responsibility (i.e., they are well-resourced) and have shown a long-term commitment to community building that successfully impacts and influences other team members.

A Reconceptualization of Collective Impact

Given that the collective impact framework was created and measured against mostly social (i.e., non-profit) initiatives, a reconceptualization of the framework could be useful for the purposes of building innovation-based entrepreneurial communities. In the interest of furthering the discussion of building entrepreneurial communities, the author proposes the following framework by which collective impact on entrepreneurial communities can be achieved:

1. Set the table and invite the right people
2. Recruit a long-term leader and resource him sufficiently for success
3. Have the leader build, test, and refine entrepreneurial community building for at least 10 years – all judged against a set of open and measurable goals

1. Set the table and invite the right people

Regions should emphasize setting the table as the first and most important early step to creating a thriving entrepreneurial community. Interviews or methods of information gathering with current and former entrepreneurs (such as the interviews completed by the Scottish REAP team) can quickly and cheaply reveal policy priorities that can create a better legal and cultural environment for entrepreneurs. Quick wins, such as changing tax structure via legislation, are important and can provide critical momentum for a community. Longer-term initiatives, such as building technology infrastructure can be transferred to the long-term agenda of the community leader and his team.

A diverse team of community leaders is optimal for achieving significant change. Gathering a team member from every role (government, corporation, entrepreneur, investor, academic) contributes to the strategy and implementation phases of community building by increasing information gathering and feedback from all inputs.

2. Recruit a long-term leader and resource him sufficiently for success

The need for leadership in a fledgling entrepreneurial community has become clearly necessary, particularly after observation of the REAP teams and their experiences with varied amounts of leadership. The overall leader or champion is able to come from any of the pre-defined roles, although success has often been viewed with leaders coming from either the entrepreneurial or government communities. The leader must be able to commit long-term to his project and show an extraordinary dedication to entrepreneurial community building.

Resources, particularly financial and human resources will help the leader achieve his goals. A charismatic and dedicated leader should be able to recruit and secure enough resources to help him through his journey. A lack of resources will doom a team to being unable to impact sufficiently, and may indicate a leader who is unable to sufficiently recruit followers to his efforts.

3. Have the leader build, test, and refine entrepreneurial community building for at least 10 years - all judged against a set of open and measurable goals

The community-building leader can be thought of in a similar fashion to a CEO at an early stage firm: he must experiment with ways to find success for his overall goal of building a strong entrepreneurial community, without knowing the exact path to achieving success. A leader, like a CEO, combined with a committed and talented team, should eventually be able to find a way to win his market. There are various tools that an early-stage CEO will use to achieve this goal, and there are similar tools that a community leader should use. His key tool should be a shared measurement system that is easily accessed, consistently updated, and regularly communicated with his team. The champion should hold his team and groups accountable by these measurements, and the champion can equally be held accountable by his team. Various stakeholders should judge the progress of community building by actively tracking shared measurements and communicating with the leader and his team.

Chapter 5 | Conclusion

REAP is a novel approach to innovation-based entrepreneurial community building that will likely see continued interest and competition as entrepreneurial communities continue to build tremendous economic value around the world. Because of this position, REAP has an incredible opportunity to deliver high impact change that can positively affect millions of lives.

A careful assessment of REAP through Kramer's Collective Impact framework reveals that the program has a distinct and powerful ability to deliver upon lasting impact for program participants.

The biggest advantages to the REAP approach are 1) its ability to create a shared agenda and measurements for a region, and 2) the striking cross-communication effects achieved when diverse teams communicate actively and share strategy and feedback during REAP workshops.

By creating a shared and agreed agenda based in academic rigor, REAP is enabling region leaders to correctly align organizations and action for collective impact. By coupling an agenda with measurements that will be open and easily shared among stakeholders and third parties, REAP has the opportunity to create a strong and lasting platform for impact.

The REAP administration was able to successfully implement active cross-team communication among the REAP teams. This mechanism for feedback and sharing has proven incredibly valuable to teams and is now considered a key part of the REAP curriculum. REAP is currently unique in this effort and competitive community-building programs are sure to mimic the model.

	Advantages	Disadvantages
1.	Creation of shared agenda and shared measurements	Little to no emphasis on "setting the table"
2.	Cross-team communications and feedback	Inability to guarantee future leadership or resourcing

Exhibit 5.1 – Summary of Advantages and Disadvantages of REAP Design

The biggest drawbacks to the REAP approach are 1) its inability to ensure setting the table, and 2) its inability to guarantee continued leadership and resourcing for the future.

REAP runs the risk of accepting teams and creating strategies before a region is "ready" to begin its journey by appropriately setting the table. REAP can take measures – either through the program, or before accepting teams – to ensure that a proper policy and cultural climate is present within a region.

REAP also runs the risk of preparing teams that may simply fail to continue the well-intentioned efforts begun in REAP. Absent leadership has already begun to plague one REAP team and time and competing efforts threaten to derail others. Properly resourcing a separate backbone organization may be a way to avoid a leadership vacuum in community-building efforts.

Going forward, REAP may want to place a larger emphasis on table setting at the beginning of the program. This emphasis can fit nicely with finding a "must-win" battle and the heavy government presence that are typical of REAP teams. Towards the end of the program, REAP should emphasize the long-term commitment of time and resources necessary to achieve impact.

Notwithstanding the concerns above, REAP will likely deliver superb value to participating regions. The program has done the best job of gathering from academic lessons and transferring them to a set of engaged and committed

practitioners. The design of the program lends itself particularly well to the requisites for achieving collective impact: empowering a diverse team, and giving them a set of measurements, feedback, and communications in order to successfully experiment with the strategies and activities that will help accelerate the formation of a successful entrepreneurial community. As early participants in REAP achieve their own success, participation in REAP – and the valuable learning that comes with it – is likely to expand as well.

Works Cited

[1]   Acs, Zoltan, et al. "Entrepreneurship and urban success: toward a policy consensus." *Available at SSRN 1092493* (2008).

[2]   Acs, Zoltan, J., and Catherine Armington. *Entrepreneurship, Geography, and American Economic Growth*. Cambridge University Press, 2006.

[3]   Babson Entrepreneurship Ecosystem Project (BEEP) Website. Babson College. April 13, 2013.

[4]   Bonsen, Joost Paul. *The Innovation Institute: from creative inquiry through real-world impact at MIT*. Diss. Massachusetts Institute of Technology, 2006.

[5]   Cohen, Boyd. "Sustainable valley entrepreneurial ecosystems." *Business Strategy and the Environment* 15.1 (2006): 1-14.

[6]   Delgado, Mercedes, Michael E. Porter, and Scott Stern. *Clusters, convergence, and economic performance*. No. w18250. National Bureau of Economic Research, 2012.

[7]   Delgado, Mercedes, Michael E. Porter, and Scott Stern. "Clusters and entrepreneurship." *Journal of Economic Geography* 10.4 (2010): 495-518.

[8]   Dembosky, April. "New Orleans start-ups and all that jazz." *Financial Times* 9 May 2013.

[9]   Feld, Brad. Startup Communities: Building an Entrepreneurial Ecosystem in Your City. Wiley, 2012.

[10]   Furman, Jeffrey L., Michael E. Porter, and Scott Stern. "The determinants of national innovative capacity." *Research Policy* 31.6 (2002): 899-933.

[11]   Haltiwanger, John, Ron S. Jarmin, and Javier Miranda. "Who creates jobs? Small vs. large vs. young." *Review of Economics and Statistics* 0 (2010).

[12]   Hancock, Marguerite. Personal Interview. 26 April, 2013.

[13]   HanleyBrown, Fay, John Kania, and Mark Kramer. "Channeling change: Making collective impact work." *published in the Stanford Social Innovation Review.* Accessed February 9 (2012): 2012.

[14] Isenberg, Daniel J. "How to start an entrepreneurial revolution." *Harvard Business Review* 88.6 (2010): 40-50.

[15] Isenberg, Daniel J. Personal Interview. 25 April, 2013.

[16] King, Robert G. and Ross Levine. "Finance, entrepreneurship and growth." *Journal of Monetary economics* 32.3 (1993): 513-542.

[17] Kortum, Samuel, and Josh Lerner. "Assessing the contribution of venture capital to innovation." *RAND Journal of Economics* (2000): 674-692.

[18] Kania, John, and Mark Kramer. "Collective impact." *Stanford Social Innovation Review* 1.9 (2011): 36-41.

[19] Kania, J. and Kramer, Mark R. Embracing Emergence: How Collective Impact Addresses Complexity. *Stanford Social Innovation Review Blog*. May 16, 2013.

[20] Kramer, Mark R. "Creating shared value." *Harvard Business Review* (2011).

[21] Lerner, Josh, David Moore, and Stuart Shepherd. "A study of New Zealand's venture capital market and implications for public policy." *Report to the Ministry of Research Science & Technology, LECG Limited, New Zealand* (2005).

[22] Lerner, Josh. Boulevard of broken dreams: why public efforts to boost entrepreneurship and venture capital have failed--and what to do about it. Princeton University Press, 2009.

[23] Malecki EJ. "Entrepreneurship in regional and local development." *International regional science review* 16.2-1 (1993): 119-153.

[24] Moon, Seongwuk, and Stern, Scott. "Innovation Clusters and a New Korean Economic Strategy." (2013).

[25] Neck, Heidi M., et al. "An entrepreneurial system view of new venture creation." *Journal of Small Business Management* 42.2 (2004): 190-208.

[26] Porter, Michael E. "The Adam Smith address: Location, clusters, and the 'new' microeconomics of competition." *Business Economics* 33.1 (1998): 7-13.

[27]   Roberts Edward, and Charles Eesly. "Entrepreneurial impact: The role of MIT." (2009).

[28]   Reeves, Clive. E-Mail Interview. May 16, 2013.

[29]   Saxenian, AnnaLee. *Regional advantage: Culture and competition in Silicon Valley and Route 128*. Harvard University Press, 1996.

[30]   SPRIE Website. Stanford University. April 13, 2013.

[31]   Stern, S., Murray F., and Aulet, W. MIT REAP Curriculum (proprietary). (2011-2013).

[32]   "The Fading Lustre of Clusters." *The Economist* 11 Oct. 2007.

[33]   USDA. Foreign Agricultural Service. *Australia Wine Annual 2012*. 15 March, 2012.

[34]   Van de Ven H. "The development of an infrastructure for entrepreneurship." *Journal of Business venturing* 8.3 (1993): 211-230.