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Global Innovation Bridges:
A new policy instrument to support global entrepreneurship in peripheral regions

By

Emilio Martinez de Velasco Aguirre

A dissertation submitted in partial satisfaction of the

requirements for the degree of

Doctor of Philosophy

in

City and Regional Planning

in the

Graduate Division

of the

University of California, Berkeley

Committee in charge:

Professor Karen Chapple, Chair

Professor Michael B. Teitz

Professor Steven Weber

Fall 2012

Abstract

Global Innovation Bridges:
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This dissertation analyzes a new set of policy instruments that several national and regional governments have recently implemented to help their home-grown innovative companies gain access to global technology markets. These initiatives, which in this dissertation are referred to as Global Innovation Bridges (GIBs), introduce a novel spatial approach to supporting global entrepreneurship in peripheral regions. Establishing a physical presence in the most dynamic regions of technological innovation around the world, and having deep ties with organizations in their home country, GIBs have effectively instituted a cross-national business support structure with the capacity to mobilize knowledge, talent, technology and capital across borders. These initiatives are based on the premise that facilitating innovative companies' access to global markets will accelerate their growth at home, generating new jobs and income. But in addition to a quantitative increase in economic activity, governments are implementing GIBs in an attempt to foster a transition towards high-growth, high value-added economic activities.

Despite their potential to stimulate economic development and to foster a qualitative transformation in the economic structure of countries and regions, the literature on entrepreneurship and global entrepreneurship policies remains completely silent about GIBs. This dissertation is the first academic contribution to reveal the workings of this emerging economic development tool. The research achieves two main objectives. First, it provides an initial characterization of GIBs, describing their main features and the factors that are driving national and regional governments to implement them. Based on a multiple case-study of six GIBs with operations in Silicon Valley, California, this characterization also introduces a taxonomy that clearly differentiates GIBs from similar organizations supporting entrepreneurship. Second, it develops an in-depth analysis of the Mexican GIB, the Technology Business Accelerator (TechBA) program, in order to explain how GIBs work. This in-depth study reveals the diversity of actors supporting the mission of the TechBA program as well as the learning processes involved in turning a local company into a global player.

Applying the concept of ‘communities of practice’ (Lave 1991; Brown and Duguid 1991; Wenger 1998; Brown and Duguid 2001) to the analysis of the TechBA program, this dissertation advances the following arguments:

- The TechBA program articulates a community of practice that involves individuals in various organizations linked together by shared experience, expertise, and commitment to a joint enterprise: supporting the global expansion of Mexican companies. These are individuals whose work is related to the many technological, commercial, financial, and legal aspects of launching a new global venture. While all these individuals work for organizations that have their own agendas and goals, they all contribute in one way or another to advancing the mission of the TechBA program.
- TechBA sustains a ‘distributed’ community of practice (Hildreth et al., 2000) that transcends national borders. Through formal partnerships but primarily through informal collaborations with actors in both Mexico and in foreign markets, TechBA articulates a community of practice that operates across distant regions in different countries. The staff and individuals more closely involved in the operation of the TechBA program serve as a ‘brokers,’ mediating among various technical and business communities in distant regions.
- Supporting the global expansion of innovative companies involves a transformation in the views and practices of the entrepreneurs leading the global expansion effort as much as it involves adaptations in the strategy, structure, and organization of a firm. Parallel to the activities to support firm-level adaptations, TechBA facilitates a process of enculturation in which Mexican entrepreneurs develop the values and practices of a foreign business community. Through formal training, but primarily through numerous experience-based learning opportunities, Mexican entrepreneurs develop a new language and codes of communication, new *know-how* in the form of foreign business practices, new *know-who* or the knowledge to participate in professional networks in foreign markets, as well as new values and views in line with those of a foreign business community.
- Rather than simply bridging the geographical distance to markets, the cross-national community of practice built around the TechBA program provides the social context for developing the knowledge, skills, practices, and views that are time- and context-specific and difficult to transmit over long distances. The TechBA community of practice serves as a “living curriculum” (Wenger 2006) in which Mexican entrepreneurs can develop a new identity and learn *how to be* a global entrepreneur.

To Mexico, with gratitude and hope.

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1. Introduction

With the intensification of globalization and an increasing recognition of the importance of innovation for economic growth and prosperity, governments from around the world began experimenting with new tools to promote global entrepreneurship. Out of these efforts, a new policy instrument emerged with a distinctive focus and spatial configuration. These initiatives explicitly target home-grown innovative companies and aim at helping them introduce new products and services to global markets. The premise behind these initiatives is that helping innovative companies participate in the global technology markets would not only accelerate their growth and the creation of jobs in the national economy, but would also facilitate a transition towards high-growth, high value-added economic activities.

A distinctive feature of these initiatives is their novel spatial approach to supporting global entrepreneurship. Establishing a physical presence in the most dynamic regions of technological innovation around the world, most notably in Silicon Valley, California, these initiatives seek to connect home-grown companies with key actors and resources to support their global expansion efforts. Countries as diverse as Denmark, Finland, Switzerland, Australia, New Zealand, Korea, Ireland and Mexico have established new entities worldwide where they offer office space, a team of consultants, and supporting services to assist their most innovative companies become global players. I call this emerging public policy instrument Global Innovation Bridges (GIBs) given the cross-national reach of the support structure they offer and their focus in supporting global innovation processes.

Despite their potential to stimulate economic development and to foster a qualitative transformation in the economic structure of countries and regions, the literature on entrepreneurship and global entrepreneurship policies remains completely silent about GIBs. And when scholars have included these initiatives in their analysis they have usually confused them with other policy instruments such as business incubators, traditional export promotion programs, or diaspora strategies. Using existing frameworks to analyze GIBs scholars have missed the emergence of a new policy instrument to support global entrepreneurship. To this date, GIBs remain under-theorized.

My doctoral dissertation seeks to address this gap by providing the first characterization of GIBs in the academic literature and by expanding our understanding of the particularities and working dynamics of GIBs. As in the exploration of any new phenomenon, my first goal is to answer basic questions about GIBs upon which new theory can be built. Accordingly, the first research question of my dissertation is the following: What is a GIB and how is it different from other policy instruments to support entrepreneurship? I answer that question in Chapter 3 where I develop a taxonomy of organizations working to support the global expansion of innovative firms. In that way, I provide a framework to differentiate organizations performing the role of a GIB from similar organizations that are frequently confused with such initiatives.

GIBs also raise a number of analytical questions and touch on important issues addressed by various fields of inquiry. With a presence in various regions around the world and with strong ties with numerous organizations in their home countries, GIBs articulate a wide network of actors distributed across distant locations who participate, in one way or another, in the global expansion efforts of innovative companies. In this way, GIBs offer a unique opportunity to explore the role of “communities of practice” in supporting distributed learning processes. Communities of practice is a framework developed by a group of learning theorists to understand how learning takes place through interactions of individuals bound together by shared experience, expertise, and commitment to a joint enterprise (Lave 1991; Brown and Duguid 1991; Wenger 1998; Brown and Duguid 2001). This framework enable us to look beyond formal organizational structures in order to focus on all the members of a community who share a domain of interest as well as a commitment to solving common problems, regardless of their affiliation.

Lately, scholars have turned their attention to the way communities of practice might operate across long distances, introducing the concept of “distributed” communities of practice. Observing that the internationalization of business is making operations more geographically distributed, scholars have raised the question of whether communities of practice can continue to operate in such an environment (Hildreth et al., 2000). But despite a general optimism for the potential of distributed communities of practice to mobilize ‘sticky’ knowledge and facilitate learning processes across long distances (Bjorn T. Asheim and Gertler 2005), very few empirical studies exist that explore this issue. Through a case study of the Mexican GIB, the Technology Business Accelerator (TechBA) program, my dissertation provides a detailed example of how distributed communities of practice actually work, probably the only case completed in the regional economic development field.

Accordingly, in Chapter 4 I first explore the following two research questions: How has the Mexican government established a cross-national community of practice? And how does that distributed community of practice work? Then, in Chapter 5 I turn to the learning processes taking place within a distributed community of practice to answer the following research question: How is the TechBA community of practice facilitating the development of the knowledge and skills required for entrepreneurs to interact effectively with actors located in distant regions? Applying insights from the communities of practice literature I will argue that TechBA provides a social context for learning and identity formation whereby Mexican entrepreneurs develop a new identity as global entrepreneurs.

With my dissertation I also seek to engage with the literature on Diasporas of skilled immigrants and their role in establishing cross-regional collaborations between Silicon Valley and peripheral technology regions around the world. The work of Saxenian (2006) and others (Kuznetsov 2006; Kuznetsov and Sabel 2006) outlines the experience of skilled immigrants from China, India, Taiwan and Israel who turned a ‘brain drain’ into a ‘brain circulation’ by establishing a two-way flow of skills, technology, and capital between Silicon Valley and their home countries. These communities

of skilled immigrants, or new Argonauts as Saxenian calls them, were able to navigate the complexities of establishing technology ventures far from established centers of skill and technology thanks to the cultural and institutional know-how they developed by studying at top American universities and working in technology companies in Silicon Valley and related American technology centers. In these experiences, the resulting emergence of technology ventures in peripheral regions was the result of an organic and largely informal process, where governments only intervened indirectly by setting up the conditions for the return of the Argonauts.

However, this literature has triggered numerous policy initiatives from countries all around the world who are attempting to replicate the success of China, India, Taiwan and Israel. By tapping in the knowledge, skills and connections of their Diasporas these initiatives attempt to initiate a 'brain circulation' as a way to create new economic development opportunities in their home countries. Discussing the policy implications of my findings, in the Conclusion I will discuss how GIBs represent an alternative model to sustain global innovation processes in connection with the most dynamic regions of innovation around the world. My analysis of the TechBA program of the Mexican Government will show how institutional interventions articulating a cross-national community of practice can facilitate the development of the knowledge, skills, practices and views required to sustain a two-way flow of skills, technology, and capital between Silicon Valley and peripheral technology regions around the world. Rather than attempting to create a flow back, countries and regions promoting GIBs have helped their home-grown innovative companies get 'plugged into' major technology centers around the world, creating new economic development opportunities in high-growth, high value-added industries.

In the conclusion I will also discuss how GIBs contribute to an overall strategy to support a transition to an innovation-based economic development model, particularly in low and middle-income countries. Recently, scholars and policy makers reached the consensus that the capacity of a country to innovate is a key factor in breaking away from current development trajectories and sustaining economic development and social prosperity in the future (Ernst and Lundvall 2000; The World Bank 2007; Nelson 2008). However, there is still a bias in both academic and policy making circles to consider innovation as connected to formal processes of R&D (Jensen et al. 2007, 681). But as innovation scholars have long demonstrated, innovation implies more than the development of new knowledge, or the transformation of that knowledge into new products or services. To be considered innovations, those new products and services need to be successfully introduced to market; that is what distinguishes innovation from invention and where the economic benefits of innovation lie (Schumpeter 1911; 1939; Pavitt 2005). As noted by Ernst & Lundvall (2000, 31) "we have to put emphasis on integration of technology in the complete business environment, production, marketing, regulations and many other activities essential to commercial success. These are the areas where the innovation process is being retarded".

With my dissertation I want to help overcome the current bias in policies promoting innovation that focus excessively on supply-side factors, like enhancing the R&D capabilities of countries, developing talent, or providing resources such as capital to finance technology ventures. In my conclusion I will argue that by facilitating user-producer linkages with leading users located in high-income markets GIBs provide a necessary “demand pull,” which is widely recognized as fundamental in the process of devising, developing, and successfully commercializing new products and services (Mowery and Rosenberg 1979; Kline and Rosenberg 1986; Giovanni Dosi 1988; B. Å. Lundvall 1988; Freeman and Soete 1997). In that way, GIBs’ efforts to help innovative home-grown companies reach the global technology markets are fundamental to advancing an innovation-based economic development model.

The dissertation is organized as follows. Chapter 2 will introduce the research design and methodology I used to analyze and characterize GIBs in general and to understand the workings of the TechBA program in particular. It will discuss the qualitative framework I used to collect and analyze data during my fieldwork in Silicon Valley, California, between 2009 and 2011. Chapters 3, 4, and 5 will outline the results of my empirical investigation. Each chapter will review the relevant literature and introduce again the specific research questions it answers. Chapter 3 introduces an initial characterization of GIBs based on my analysis of initiatives implemented by several countries in Silicon Valley. Chapter 4 and 5 then focus on the Mexican GIB, the TechBA program, to understand whether and how it has articulated a cross-national community of practice and how it supports learning processes conducive to effective collaborations among distant actors in the pursuit of global innovation projects. Chapter 6 discusses the academic contributions of my dissertation as well as the practical implications of my findings.

2. Research design and methodology

2.1. Introduction

I first became interested in studying the policy instruments referred to as Global Innovation Bridges (GIBs) when I learnt about the program of the Mexican government to help innovative companies gain access to global markets, the Technology Business Accelerator (TechBA) program. As a Mexican, I was very intrigued by this federal program that seemed a drastic departure from traditional economic development policies aimed at attracting investment and large multinational companies into the national economy with the hope of stimulating growth and technological development. Why was the Mexican Government playing such an active role at helping small and medium-sized technology companies gain access to regions like Silicon Valley, California? And how could Mexican companies compete against other technology companies in the region recognized as the most innovative in the world? Those were some of the initial questions that drew my attention towards the study of this initiative.

After some initial investigation it became evident that the Mexican Government was not alone in promoting this kind of program. Soon I discovered that several countries had similar initiatives with a very active presence in Silicon Valley. And as I continued gathering information I realized there was nothing in the academic literature about these novel policy instruments. Even when these initiatives seemed so relevant for enhancing the innovation capabilities of the countries promoting them, and despite a growing interest in academic and policy-making circles on the study and promotion of innovation systems, somehow they had slipped the attention of scholars. At that point I realized there was a need to conduct empirical research in order to expand our understanding of what seemed to be an emerging policy instrument.

As discussed in the introduction, my dissertation addresses two kinds of questions. The first set of questions is descriptive and responds to the need for exploratory research. As in the study of any new phenomenon, with my dissertation I want to first develop a foundation upon which new theory can be built. These questions, which I address on Chapter 3, are the following: What is a GIB? And how are these initiatives different from similar policy instruments to support entrepreneurship? The second set of questions is explanatory, seeking to understand the workings of GIBs while expanding our understanding of the “communities of practice” framework. In Chapters 4 and 5 I focus on the TechBA program of the Mexican government to answer those questions, which are the following: How has the Mexican government established a cross-national community of practice? How does that distributed community of practice work? And how is the TechBA community of practice facilitating the development of the knowledge and skills required for entrepreneurs to interact effectively with actors located in distant regions?

In this chapter I discuss the methodology used to conduct my dissertation research, detailing the research practices that transformed observations into data, results, findings, and insights. I adopt a

positivist view of research: that is, the process is directed toward the development of testable propositions and theory which are generalizable across settings (Gephart 2004). Within this perspective, my dissertation is based on a qualitative framework for the collection and analysis of empirical data. Specifically, I used the case study as a research strategy to develop new theoretical knowledge from the analysis of empirical data collected in the field. I adopted this strategy given my interest in exploring a new contemporary phenomenon within its real-life context, where the boundaries between phenomenon and context are not clearly evident (Yin 2003; Eisenhardt 1989)

Research methodology is the logical sequence that connects the empirical data to a study's initial research questions and, ultimately, to its conclusions (Yin 2003, 20). Given that exploratory and explanatory questions follow a different research logic, I will discuss them separately in sections 2.2 and 2.3 respectively. My exploratory questions aim at testing the proposition that a new policy instrument to support global entrepreneurship has emerged with a distinctive focus and spatial configuration. The challenge to test that proposition is to demonstrate that all the initiatives supporting the global expansion of innovative firms share a series of characteristics that set them apart from other, existing policy instruments. Accordingly, my research design for these questions involves a multiple-case study contrasting several GIBs in order to ensure the external validity of my findings. My second set of explanatory questions aim at unveiling the complexity involved in the workings of a GIB. My focus is on "how" a GIB operates and my goal is to test a series of propositions emerging from the literature. To address this challenge I conduct an in-depth study of a single GIB, the Technology Business Accelerator (TechBA) program of the Mexican Government. The resulting two-stage design, which combines a multiple-case study to understand basic characteristics of GIBs with an in-depth study of a single case, aims at maximizing both the external and internal validity of my findings.

This research is based on the analysis of data collected between 2009 and 2011 through three main mechanisms: semi-structured interviews, participant observation, and documentary research. This last includes analysis of documents such as government reports, slide presentations, websites, and videos available on the Internet. Sections 2.2 and 2.3 will discuss the particulars of these data collection techniques as I elaborate on the design of each stage of my research project. By describing the procedures I followed when conducting my research this chapter addresses the issue of *reliability*, which is one in four tests to judge the quality of a research design (Yin 2003, 33). I also address the other three, *construct validity*, *internal validity* and *external validity*, in the following two sections as applicable. I conclude this chapter in section 2.4 by discussing the limitations of my research methodology and how they affect my findings.

2.2. Stage 1: Multiple-case study

The exploratory questions seek to test the proposition that the economic development initiatives that national and regional governments have recently implemented to support global entrepreneurship constitute a new and distinct policy instrument, Global Innovation Bridges. Doing

so confronted me with two main research challenges: (1) Construct validity: developing a concept that captures the key characteristics of those new policy initiatives while setting them apart from similar policy instruments; and (2) External validity: ensuring that those characteristics are common across the various equivalent initiatives promoted by different national and regional governments.

In order to address these challenges I conducted a multiple-case study involving a total of six GIBs with operations in Silicon Valley, California. As it will be discussed below, this multiple-case study took place in two stages. In the first one I did a detailed analysis of three GIBs, including in-depth interviews, participant observation, and analysis of official documents. In the second I further tested my findings in three other cases through the analysis of various official documents and information available on the Internet.

Following I will discuss how I defined my unit of analysis and how I chose my cases. Subsequently I will explain how this multiple-case study design allowed me to address the two research challenges outlined above in order to arrive at my conclusions.

2.2.1. Defining the unit of analysis

The unit of analysis I used in my multiple-case study are government-backed initiatives to support global entrepreneurship that meet the following criteria:

- a) Initiatives explicitly focused in supporting innovative companies gain access to global markets.
- b) Initiatives with a representation in one or more regions of technological innovation around the world.

The fieldwork revealed that these initiatives have different organizational configurations. Some are directly operated by an economic development agency while others are operated by a non-profit organization or other third parties. But in all the initiatives studied, the government played a major role, providing the majority of the funding as well as strategic direction, if not human and organizational resources for their operation. When the initiative studied was operated through third parties my analysis was not limited to the activities conducted by those intermediate organizations. My analysis was focused on the initiative as a whole, including the different actors involved in their design and operation both in the home country and in foreign representations.

My research focuses on public policy interventions to support global entrepreneurship as no private initiatives were found when I first started collecting data in the field. But during the course of my fieldwork a number of privately owned initiatives in Silicon Valley began similar efforts to support innovative companies gain access to global markets. This is the case of Plug and Play Tech Center, a business incubator that in recent years began targeting foreign companies to help them gain access to the U.S. market. This organization has recently opened representations in foreign locations, resembling the structure and goals of government-backed initiatives. However, I decided to limit my

investigation to government-backed initiatives given that private initiatives do not seem to offer the same level of support yet and their organizational ties in foreign countries do not seem to be as deep and complex. This situation would have complicated the comparison across cases in order to develop a characterization that adequately captures the structure and dynamics of GIBs. But the comparison between public and private GIBs is worthy of investigation and a potential topic for future research projects.

And while my fieldwork took place in Silicon Valley and my interviews involved for the most actors located in this region, my unit of analysis is not limited to the resources of these initiatives in this region. My goal is to compare these policy instruments in all their complexity, including all the human, financial, organizational and technological resources involved in the pursuit of their mission both in their home countries and across various locations around the world.

2.2.2. Case selection

As an emerging policy instrument, there are only a limited number of GIBs currently in operation. An initial survey I conducted in 2010 identified less than 20 initiatives operating in Silicon Valley with the support of foreign national or regional governments. Given the limited time and resources to conduct my research, the challenge was to analyze a sample of cases that would introduce variation along two factors I hypothesized to affect the structure and operation of these initiatives. By comparing cases with contrasting characteristics my goal was to develop a characterization of GIBs that would capture the variation and complexity of all different initiatives. The factors I considered when selecting my cases are the following:

Table 2.1 – Factors considered in defining the sampling framework

Factors	Justification	Operationalization
Level of economic development	Domestic income might be correlated with the types of economic activities present in the national economy (low- vs. high-value added) and therefore with the level of innovative activity within firms. Domestic income might also affect the public resources available to support GIBs and consequently their structure and operations.	Economies are divided into high income or middle income based on their GNI per capita according to the World Bank's Country Classification ¹ as follows: High income > \$12, 276 USD Middle income > \$ 3,976 USD < \$ 12,276 USD
Geographical region	Geographical distance to the major technology markets might affect the structure and internal dynamics of a GIB.	Latin America, Europe, Asia-Pacific

But while *theoretical sampling* (Glaser and Strauss 1967; Eisenhardt 1989) guided my case selection, my resulting sample was also defined by the accessibility I had to respondents and sources of information. Often, I got access to research subjects through referrals from previous research

¹ World Bank, Country Classification: <http://data.worldbank.org/about/country-classifications>

subjects following the technique called *snowball sampling* (Goodman 1961; Biernacki and Waldorf 1981). The resulting sample used in my multiple-case study is the following:

Table 2.2 – Sampling framework and cases selected

Geographical Region	Level of Economic Development	
	High Income	Medium Income
Latin America		TechBA (Mexico)
Europe	FinNode (Finland) Enterprise Ireland (Ireland) Czech Invest (Czech Republic)	
Asia-Pacific	ANZA (Australia-New Zealand) Kiica Silicon Valley (Korea)	

As mentioned earlier, I conducted my multiple-case study in two stages. First, I conducted an in-depth analysis of three cases, Mexico, Finland, and Ireland. The second stage extended my analysis to three other cases, Czech Republic, Australia-New Zealand, and Korea through the analysis of official documents and other information publicly available on the Internet.

2.2.3. Construct validity

Currently there is no agreed-upon concept to name the initiatives I call GIBs. My fieldwork revealed that the very practitioners involved in the operation of these initiatives are borrowing terms to describe them. Most frequently practitioners use the term “international incubator” when referring to these initiatives, a term that does not adequately reflect their goals and dynamics.

In developing the concept of *Global Innovation Bridge* and the definition I introduce in Chapter 3, I confronted two interrelated challenges. First, I needed to develop a concept and a definition that adequately captured the main features of these initiatives, articulating their key commonalities while setting them apart from existing policy instruments with similar but distinct goals. Second, I needed to ensure that such a concept and definition would encompass all the variation across equivalent initiatives. In other words, the new concept and definition needed to be narrow enough to exclude similar but distinct initiatives while covering the whole spectrum of possibilities within members of the whole set.

As discussed by Eisenhardt (1989, 541), the sharpening of my constructs took place through a two-part process involving (1) refining the definition of the construct and (2) building evidence which measures the construct in each case. This took place through an iterative process in which I constantly compared the data collected from each of my different cases to my constructs, until the evidence accumulated converged on a single, well-defined construct. Furthermore, I used multiple

sources of evidence when contrasting my constructs with each case. These sources included in-depth interviews with key actors involved in the design and operation of GIBs, analysis of each initiative's website and other official documents detailing their goals, structure, and the characteristics of the support offered, as well as observations from several events organized in support of their mission. The process ended when I reached *theoretical saturation*, or the point when my analytical constructs closely fitted the data and the marginal improvements obtained from each iteration became small.

2.2.4. External validity

As mentioned in the chapter introduction, I became interested in the policy instruments I now call GIBs after my discovery of the TechBA program of the Mexican government. And after finding that the Mexican Government was not the only one promoting this kind of initiative, I developed the proposition that a new and distinct policy instrument to support global entrepreneurship had emerged. The challenge then was to find out if my findings were generalizable beyond the TechBA program.

As discussed by Yin (2003) and Eisenhardt (1989), case studies rely on *analytical generalization*, a research strategy in which the investigator strives to generalize a particular set of results to some broader theory. Analytical generalization is performed following a *replication logic* similar to that performed in experiments. The research propositions must be tested by replicating the findings in a second or even a third case where the theory has specified that the same results should occur. Once such direct replications have been made, the results might be accepted as providing strong support for the theory, even though further replications had not been performed.

Accordingly, I tested the research propositions developed from my observation of the TechBA program in five other cases in two stages. In the first stage I did an in-depth analysis of two other initiatives, the Irish program Enterprise Ireland and the Finnish program FinPro. In that way I conducted a total of three detailed case studies relying on in-depth interviews with the managers of those programs, analysis of official documents (official websites, videos, government reports, and working documents), and observations I collected from my participation in various events with the participation of managers and client companies of those initiatives. This analysis revealed that all three initiatives shared a set of common characteristics that set them apart from other policy instruments to support entrepreneurship as detailed in the academic literature. In particular, my goal was to test the proposition that these initiatives had a different goal, structure, and mode of operation than three other policy instruments: business incubators, traditional export-promotion programs and diaspora strategies. By contrasting my findings from the characterization of these three policy instruments as described on the academic literature I was able to test the proposition that GIBs constitute a new and distinct policy instrument to support global entrepreneurship.

In order to further test the external validity of my findings, I extended my study to include three other cases relying on the analysis of official documents and other information available on Internet. These three cases included Czech Republic's Czech Invest program, the ANZA program from Australia and New Zealand, and Korea's Kiica Silicon Valley. This second comparison enabled me to test the validity of my initial findings in cases with contrasting conditions along two dimensions hypothesized to affect the structure and operations of GIBs: geographical distance to high-end technology markets and level of economic development of countries promoting the initiatives.

I stopped adding cases when reached the point of theoretical saturation. After the analysis of six GIBs incremental learning was minimal as observations repeated from the phenomena seen before (Glaser and Strauss 1967). Overall, this multiple-case study involving a total of six cases enabled me to sustain the proposition that GIBs are a new policy instrument to support global entrepreneurship with a distinct mission, structure, and mode of operation from either business incubators, traditional export-promotion programs and diaspora strategies.

2.3. Stage 2: In-depth single case study

The second stage of my dissertation research project aims at expanding our understanding of the internal dynamics of GIBs. While the characterization I developed in the first stage of my dissertation was focused on the *what* of GIBs, in this second stage I address explanatory questions intended to build new theory revealing the complexity of their workings. In order to address these *how* questions, I conducted an in-depth case study of the Mexican GIB, the Technology Business Accelerator (TechBA) program.

For this in-depth analysis I decided to conduct a single case study for several reasons. First, understanding the workings of a GIB requires detailed and systematic observations of a variety of events and activities as well as capturing the perspectives of a great number of actors involved in its operations. Given the time- and resource intensity of this type of research, as well as the material limitations I faced when conducting my study, I decided to concentrate my efforts on the analysis of a single case. Second, having established that multiple GIBs share key commonalities in their mission, structure and overall operations, the TechBA case can be considered a *typical* case whose dynamics are representative of the others. According to Yin (2003), this is one justification for conducting a single-case study. This does not imply that the theory emerging from this in-depth case study can be automatically generalized to other cases. But the findings from the TechBA case can provide a framework against which future research can contrast the workings of other GIBs. This combination of a multiple-case study to develop a general characterization of GIBs with an in-depth study of a single case is the best alternative for balancing two competing goals involved in researching a new phenomenon: generalization and theoretical depth.

2.3.1. Research approach and analytical framework

The development of my in-depth case study of the TechBA program followed an inductive process to build theory. While I developed some initial research questions and propositions to guide my fieldwork, my resulting analytical framework emerged out of continuous iterations between empirical observations, emerging theory, and the extant literature (Yin 2003; Eisenhardt 1989; Eisenhardt and Graebner 2007). A particular challenge I faced in that process was to match my empirical observations with the extant literature. Throughout the development of my fieldwork I iterated between different theoretical lenses in search for the appropriate analytical framework to contrast my findings and to place my contribution.

I began my fieldwork with a series of tentative questions and propositions that I developed from a review of the literature on Regional Systems of Innovation, Clusters, and from the work of other scholars in the field of economic geography (Braczyk, Cooke, and Heidenreich 1998; Bjorn T. Asheim and Gertler 2005; Porter 1990; Polenske 2007). But those frameworks were not effective in analyzing the interactions I was observing within TechBA as organization as they were primarily focused on understanding social and economic processes at the level of the region as a whole. At that point I turned to theories explicitly focused on innovation processes at the level of the firm (Kline and Rosenberg 1986; Teece 1986; B. Å. Lundvall 1988; Giovanni Dosi 1988). While those frameworks helped me conceptualize the processes experienced by the entrepreneurs participating in the TechBA program, they also proved limited when analyzing the overall program and the many interactions with actors surrounding it. Finally, I found a powerful analytical lens in the concept of “communities of practice” (Lave and Wenger 1991; Wenger 1998; Brown and Duguid 1991). This framework, developed by a group of theorists studying the social dimension of learning, gave me the analytical tools to understand the learning processes experienced by the entrepreneurs participating in the TechBA program while capturing the interactions that those entrepreneurs were having with actors both within and outside the organization. In this way, the communities of practice framework enabled me to integrate processes taking place at different scales: the individual entrepreneur, the firm, TechBA as organization, and other actors surrounding the TechBA program but not formally linked to it.

2.3.2. Research procedures

I conducted the fieldwork for my in-depth study of the TechBA program in three stages. In the first one, that took place in 2008, I gained access to my respondents and conducted exploratory research to understand the general dynamics of the program. During this stage I interviewed people in the Mexican Ministry for the Economy who played a key role in designing and implementing the TechBA program. I also conducted my first interviews with the CEO of TechBA-Silicon Valley and with eight entrepreneurs participating in the “acceleration” process at that location, and collected and analyzed a first set of official documents describing the goals and structure of the program.

The second stage of my fieldwork took place during 2009 and 2010. A central activity of my fieldwork during that stage was participation in all the activities organized by TechBA-Silicon Valley in support of their “pre-acceleration” and “acceleration” programs. These activities included several workshops aimed at preparing client companies for their global expansion along various topics: legal and migratory issues, new product development, go-to-market strategies, venture investment, and local business culture. They also included several presentations by the entrepreneurs leading the global expansion effort about their companies and solutions, including a pitch session at the end of the pre-acceleration to local investors. During that stage I also conducted semi-structured interviews with managers and consultants of TechBA-Silicon Valley as well as with numerous entrepreneurs participating in the program. During this stage, I conducted fifteen interviews with managers and consultants and forty five interviews with twelve different entrepreneurs as they went through the “pre-acceleration” and “acceleration” programs.

During 2011 I conducted the third stage of my fieldwork which involved some follow-up interviews with some of the same actors interviewed in the previous stages. I also interviewed other actors involved with the operation of the TechBA program in Mexico to complement the views collected in Silicon Valley. I complemented my data collection with a variety of official documents and other materials available in Internet including videos, blogs, and official slide presentations. And while I both collected and analyzed data during the majority of my fieldwork, during this last stage the focus of my work was increasingly on the latter. I coded and analyzed all the materials with the support of AtlasTi, a software to facilitate the analysis of qualitative data.

2.3.3. Data Analysis: searching for patterns and building theory

In order to my analyze my data and develop an analytical model with a clear contribution to the extant theory I followed the strategy introduced by Eisenhardt to build theory from case studies (Eisenhardt 1989). I began my fieldwork with a series of tentative questions and research propositions. As I began to collect data I began contrasting my observations with those questions and propositions and to different analytical frameworks as described above. For that purpose I wrote both descriptive and analytical memos to identify emerging patterns and contrast them to the literature. That process helped me refine my initial questions and propositions and guided my subsequent data collection activities. I repeated that process several times, iterating between empirical observations, emerging patterns, and the extant literature towards an analytical model that closely fits the data.

In order to enhance the internal validity of my emerging model I followed different analytical tactics as suggested by Yin (2003). One of them was *pattern matching*, where I used the characterization of communities of practice as described in the academic literature (Lave and Wenger 1991; Wenger 1998; Brown and Duguid 1991) as a ‘pattern’ to which I compared the constructs and relationships emerging from my data. In a similar way I contrasted the learning processes I was observing from the TechBA community of practice to the characterization of such learning processes developed by

scholars studying ‘distributed’ communities of practice (P. Hildreth, Kimble, and Wright 2000; Coe and Bunnell 2003). Another tactic was to consider alternative explanations for the observed patterns and relationships. Developing rival propositions and contrasting them to my data, I was able to further refine my analytical model to explain the workings and learning dynamics of the TechBA community of practice. Finally, I triangulated data among different actors involved in the TechBA program and among different sources of information, i.e., field notes, interview transcripts, official documents, blogs, videos, etc. Following those tactics, I was able to provide stronger substantiation of my constructs and analytical models.

I continued iterating between empirical observations, emerging patterns, and the extant literature until I reached *theoretical saturation*, or the point where marginal improvements to the theory were small and all the data converged towards a unified analytical model (Eisenhardt 1989; Yin 2003). That same process enabled me to enhance the external validity of my model. By contrasting the empirical findings with similar and conflictive findings in the literature I was able to generalize my emerging analytical model to the broader theory, or what Yin (2003) and Eisenhardt (1989) call *analytic generalization*.

2.4. Limitations of my research methodology

As discussed earlier, the two-stage research design is the best alternative I found to balance two competing goals: generalizability and theoretical depth. Faced with the challenge of exploring a new phenomenon, Global Innovation Bridges, I wanted to develop a basic characterization that captured fundamental characteristics of those initiatives while uncovering their complexity and internal dynamics. But given the material and time constraints I faced while conducting my research this two-stage research design also presents limitations which affect my findings.

First, while my multiple-case study involves six cases, I only conducted in-depth interviews in three of them. For the other three cases, I conducted my analysis only with information available on the Internet. These last three cases certainly added power to my analysis, as they helped me to refine my characterization of GIBs. The wealth of information that these initiatives have made available on the Internet provided abundant material to conduct my research. But as most of these sources are produced for the general public they conceal the complexities and contradictions that provide richness to the analysis.

Second, while my unit of analysis is the GIB as a whole, including the actors and resources located in both the home country and in foreign locations, the interviews I conducted for the characterization of these initiatives included primarily the directors of the Silicon Valley offices of these initiatives. Only in the case of the Mexican GIB was I able to interview several actors involved in the operation of the program in Mexico in order to gain a wider perspective. And while in my interviews with the Silicon Valley representatives of the Irish and Finnish programs I inquired about the overall dynamics and resources of those initiatives, the Silicon Valley representatives sometimes

did not know the details of operations taking place elsewhere or were not aware of the rationale for certain aspects of the program.

For the single case study of the TechBA program a third limitation of my research is that my interviews focused primarily on the actors directly involved in its operation. As mentioned above, in the analysis of this case I triangulated data from different actors including government officials and program directors in Mexico, the CEO and managers of the Silicon Valley office, as well as consultants and entrepreneurs at this location. My data collection techniques also included participant observation at events where I was able to collect data on other actors like service providers, consultants, investors and other actors. But my research lacked the direct input of those actors supporting the global expansion of Mexican companies but who are not formally linked to the TechBA program.

These limitations point at areas of opportunity for future research. While the characterization of GIBs that I developed from my multiple-case study fills a gap in the literature on entrepreneurship policies and provide a foundation to build theory, it still can be enriched by expanding the analysis to other cases and by collecting more detailed information of each case. And while my in-depth analysis of the TechBA program illuminates our understanding of how distributed communities of practice work and about the collective learning processes taking place within them more research is needed to capture the views of other actors participating in that community. Further research is also needed to test in other cases the propositions emerging from the TechBA case about the workings of distributed communities of practice. Following the replication logic suggested by Yin (2003) and Eisenhardt (1989) to test those findings will result in a more robust theory as propositions will be more deeply grounded in varied empirical evidence.

3. Global Innovation Bridges: A characterization of an emerging economic development tool

3.1. Introduction

This chapter is the result of exploratory research aimed at understanding an emerging phenomenon: a group of policy initiatives implemented by various national and regional governments with the goal of helping their home-grown innovative companies gain access to global technology markets. My impetus comes from the discovery that these national and regional governments had established a presence in Silicon Valley, among other regions of technological dynamism, where they provide client companies with office space, a team of managers and consultants, as well as supporting services with the goal of helping them introduce new products and services to global markets. Mobilizing human, organizational, and financial resources across borders, these institutional initiatives seemed to represent a new spatial approach to supporting global entrepreneurship. But as in the discovery of any new phenomenon, I faced the need to answer the most basic questions about these initiatives before attempting to develop any theory out of them.

Accordingly, my main goal in this chapter is to develop a characterization of these initiatives in order to address two basic questions: (1) What are the key characteristics of these various initiatives? and, (2) How are these initiatives different from similar policy instruments to support entrepreneurship? As I conducted my fieldwork, I also realized of the need to articulate a name and a definition that captured key features of these initiatives. Thus, in this chapter I also introduce a working definition for the policy instruments that I refer to as Global Innovation Bridges (GIBs). My investigation is guided by the research proposition that GIBs represent a new and distinct policy instrument to support global entrepreneurship.

This chapter is organized as follows. I begin in section 3.2 with a brief review of the literature on international entrepreneurship and on entrepreneurship policies. This section explores whether and how GIBs have been characterized in the academic literature. Following, in section 3.3 I introduce a working definition of GIBs. Here I justify the use of the term Global Innovation Bridge and develop a definition that captures the goals, structure, and activities of this emerging policy instrument. In section 3.4 I analyze the factors driving the emergence of this new economic development tool. Based on data obtained from in-depth interviews with key actors promoting GIBs, as well as from the analysis of official documents, in this section I answer the question: what is motivating national and regional governments to focus their economic development programs on supporting the global expansion of home-grown innovative firms? In sections 3.5 and 3.6 I provide a basic description of the key organizational features of GIBs and the key activities performed by GIBs. While various national and regional governments now share the goal of supporting the global expansion of their home-grown companies, there is wide variation in the organizational configuration of GIBs and the level of support provided to client companies. These two sections

outline key commonalities of GIBs in terms of their organizational features and the types of activities performed.

After identifying shared characteristics of GIBs, section 3.6 focuses on differentiating GIBs from similar initiatives focused on the global expansion of innovative firms. Recent years have also seen the emergence of numerous public and private initiatives that in one way or another help innovative firms introduce new goods and services to distant markets. But while all these different organizations perform a role in facilitating the global expansion of innovative companies they vary widely according to their mission, their support structure, as well as in their specific objectives and tactics. In section 3.6 I develop a taxonomy of organizations working to support the global expansion of innovative firms, differentiating four main functions that these organizations can perform. In that way, I provide a framework to differentiate organizations performing the role of a GIB from similar organizations that are frequently confused with a GIB.

I conclude in section 3.7 by arguing that the contribution of this chapter is to provide an initial characterization of a policy instrument that so far has not been identified in the academic literature. By contrasting the mission, structure, and mode of operation of GIBs vis-à-vis other initiatives this chapter allow us to identify them as a new and distinct policy instrument to support global entrepreneurship. But I will also argue that this level of analysis does not allow us to fully understand the working dynamics of GIBs. By raising a series of questions that this chapter leaves unanswered I set the stage for subsequent chapters that focus on how GIBs operate and the complexities involved in performing their mission.

3.2. A review of the literature: looking at the intersection of international entrepreneurship and entrepreneurship policy

As entrepreneurship has come to be perceived as an engine of economic and social development throughout the world, so has the scholarly attention to the topic increased dramatically. But has the extant literature identified the new set of policy instruments to support global entrepreneurship that are the object of study in my dissertation? My goal in this literature review is to understand whether and how scholars have conceptualized the recent initiatives that national and regional governments have been implementing to facilitate the global expansion of their home-grown innovative firms.

In order to achieve that goal I will review the contributions from recent compilations on the topic of entrepreneurship that survey the extant literature in an attempt to identify key topics and give direction to this growing field of study. I will focus on two key areas of interest for my research: the literature on international entrepreneurship and the literature on entrepreneurship policy. Section 3.2.1. first analyzes how scholars have conceptualized the role of public policies in the literature of international entrepreneurship. Conversely, section 3.2.2. analyzes whether and how access to global markets has been conceptualized as a policy objective in the entrepreneurship policy literature. In

doing so, I will analyze the specific tools that scholars have identified to facilitate the global expansion of entrepreneurial firms.

3.2.1. Literature on international entrepreneurship

This area of research emerged in the last decades to understand the particular challenges and dynamics faced by small and medium enterprises (SMEs) when accessing international markets. Not long ago, international business was predominantly the domain of large firms, with smaller firms tending to remain local or regional. Internationalization was an expansion option of interest to some enterprises, but seldom was it a competitive necessity (Dana and Wright 2004). But as the globalization of the economy has increased competitive pressures and opened unforeseen opportunities for small businesses, so have internationalization scholars shifted their focus from the large multinational corporation to small firms.

One striking feature of the international entrepreneurship research is its lack of attention to the role that government plays in supporting SMEs access to the international arena. In the opening chapter to the *Handbook of Research on International Entrepreneurship*, when discussing emerging paradigms of international entrepreneurship, Dana and Wright (2004) only look at the role of the state from a macroeconomic perspective. They argue that the removal of government-imposed barriers that segregated and protected domestic markets, together with technological advances in manufacturing, transportation, and telecommunications, allow even the smallest firms access to customers, suppliers and collaborators around the world. And while they recognize that “these sea changes in the global business environment have far-reaching implications for business managers, public policy formulators, and researchers alike” (Dana and Wright 2004, 11), the authors remains silent about the specific implications for public policy formulators. A discussion of the role that public policies play in the internationalization of SMEs is largely absent in most of the conceptual contributions of the *Handbook of Research on International Entrepreneurship*. For instance, in his review of internationalization theories and their connection to international entrepreneurship, Welch (2004) does not make any mention of theories discussing the role of governments in supporting international entrepreneurship. In closing this handbook Zahra et al. (2004) outline the emerging research issues in entrepreneurship, identifying six emerging areas of research and the issues that require most attention. None of these areas focus on policy instruments to support international entrepreneurship or in the role of the government in general. The conceptual contributions of this handbook make evident the absence of a conceptual framework to understand the different roles that governments can play in support of international entrepreneurship as well as the specific policy instruments they have been implementing.

Public policies are only discussed in part three of the *Handbook of Research on International Entrepreneurship* as contributors explore conceptual issues through the experience of particular countries. But the policies identified either refer to traditional export promotion programs (Sear and Hamilton 2004), or focus on very specific aspects of developing international entrepreneurs like

facilitating ‘informal on-the-job training’ and the development of ‘personal contact networks’ (Bell et al. 2004). For some, government intervention is simply seen as detrimental to entrepreneurial activity (Milton-Smith 2004). Others, like Loustarinen and Gabrielsson (2004), do not dismiss the government but argue that policy makers are ill-equipped to address the particular challenges of ‘born-global’ firms (P. McDougall, Shane, and Oviatt 1994; Knight and Cavusgil 1996) as their behavior in international markets deviates from that of traditional firms. Loustarinen and Gabrielsson authors conclude their analysis of Finnish efforts to support international entrepreneurship by suggesting that government policies should be extended from export promotion to the promotion of all the operation modes of international business. But they fail to identify the FinNode initiative that the Finnish Government has been promoting to support global entrepreneurs in a comprehensive fashion through representations in the most dynamic regions of innovation around the world. And none of the authors that analyze countries whose governments have been actively promoting the policy instruments that I address in my dissertation, like Ireland, Sweden, or New Zealand, identify these initiatives in their case studies (Bell et al. 2004; Blomstermo, Eriksson, and Sharma 2004; Frederick, Thompson, and Mellalieu 2004).

Other recent contributions on international entrepreneurship also show a general lack of interest in the role of the public sector. In his analysis of theoretical approaches to internationalization by SMEs, within the Oxford Handbook of Entrepreneurship (Mark Casson et al. 2006), Buckley (2006) does not mention anything substantial about government policies. Buckley identifies and discusses key issues that emerge from the literature but they relate to other aspects of international entrepreneurship like the relationship of the firm and the market, the internal constraints of international activities of SMEs, the dynamics of born-global firms, the role of risk and uncertainty determining SME internationalization patterns, or the role of networks in facilitating access to global markets. In his synthesis of the literature Buckley only makes a brief mention about the role of the government when discussing the factors facilitating early internationalization: “government policy, too, may encourage early internationalization –subsidies encourage SMEs to export and thus start moves which may lead to outward FDI, and subsidies to inward investors will encourage SMEs to undertake FDI” (Buckley 2006, 683). But he does not identify any substantial literature discussing specific policy instruments facilitating SMEs access to global markets. Similarly, when discussing potential lines of future research, Buckley does not acknowledge the need to understand the role of policies in supporting internationalization, even when he recognizes that SMEs international expansion is problematic and the firm faced with such a challenge is often vulnerable.

The special volume on International Entrepreneurship (Shepherd and Katz 2005), from Elsevier’s series on *Advances in Entrepreneurship, Firm Emergence and Growth*, also reflects a lack of interest from the academic community in the relationship of government policies and international entrepreneurship. The contributors of this volume explore various topics related to international entrepreneurship including the following: the role of knowledge, learning and capability development in firms’ internationalization (Autio et al. 2005; Zheng and Khavul 2005); the

leadership characteristics of technology entrepreneurs and their effect in export performance (Kundu and Renko 2005); the effects of Internet adoption in internationalization (Yu, de Koning, and Oviatt 2005); the relationship of firm-specific capabilities on firm survival and growth in international markets (Fernhaber and McDougall 2005); networking analysis tools in international entrepreneurship research (Godesiabois 2005); organizational responses to institutional pressures (Karlsson et al. 2005); attitudes towards entrepreneurs and entrepreneurship education (Mitchell 2005); and, the role of venture capital in international expansion (Lockett et al. 2005). But as in the case of other contributions on the topic, the authors in this volume make clear that understanding specific policy instruments to support the global expansion of innovative firms is simply not in the agenda of international entrepreneurship scholars.

This might be explained by the overall orientation of entrepreneurship scholars. As recognized by Obrecht (2004), in mainstream thinking on entrepreneurship the basic entrepreneurial logic is market-oriented. The entrepreneur is conceptualized as the main driving force in the market. Consequently, the focus of much of the research is on the abilities that are embedded in the entrepreneur as an individual and whose realization is dependent on the individual exclusively. As an example, A. Bakr (2004) argues that it is entrepreneurs' personality traits and backgrounds what drives them to scan the environment (local or international) looking for market opportunities. Similarly, McDougall and Oviatt (2000, 903) define international entrepreneurship as the "combination of innovative, proactive, and risk-seeking behavior that crosses national borders and is intended to create value in organizations." It seems that this market-oriented logic and a narrow focus on individual entrepreneurs have prevented international entrepreneurship scholars from identifying the global entrepreneurship policies that various national and regional governments from around the world have recently been implemented.

3.2.2. Literature on entrepreneurship policy

According to Audretsch et al. (2007a), entrepreneurship has emerged as a bona fide focus of public policy. Public policy has increasingly looked to entrepreneurship to spawn economic growth and foster new jobs. Cities, regions, states and entire countries have turned to entrepreneurship to generate economic development. Consequently, scholars have increasingly turned their attention to the role of the public sector in fostering entrepreneurship. But if the literature on international entrepreneurship has not paid much attention to the role of government policies, how does the work of scholars focusing specifically on entrepreneurship policy address the question of the global expansion of entrepreneurial firms? Is access to global markets a recognized policy objective? And what policy instruments have been identified in the literature to achieve that goal?

In defining their object of study scholars have made a distinction between small business policy and entrepreneurship policy. Lundstrom and Stevenson (2001; 2005) make this important distinction, arguing that these two areas of policy differ in their overall goal, specific objectives, client groups and targeting, business cycle application, policy priorities and levers, and time frames for expected

results. The primary aim of small business policy is to level the playing field for small firms through measures to overcome their disadvantages in the marketplace resulting from their 'smallness' and 'resource poverty', and to improve their competitiveness. The primary target is established firms. The specific aim of entrepreneurship policy is to increase entrepreneurial activity levels and to foster a favorable environment for the emergence of new firms. Accordingly, Stevenson and Lundstrom (2007, 105) define entrepreneurship policy as "policy aimed at the pre-start, the start-up and early post-start-up phases of the entrepreneurial process, designed and delivered to address the areas of motivation, opportunity and skills with the primary objective of encouraging more people in the population to consider entrepreneurship as an option, move into the nascent stage of taking actions to start a business and proceed into the entry and early stages of the business".

This distinction between SME policy and entrepreneurship policy has been widely accepted by the community of scholars (Hart 2003; Storey 2003, 2006; Audretsch and Beckmann 2007; Hoffmann 2007). However, scholars also have widely diverging views of what the actual policies to support entrepreneurship are. For Storey (2003; 2006), entrepreneurship policies currently play a modest role in the policy armory of developed countries. Accordingly, he deliberately retains SMEs policies as his main object of analysis when discussing government interventions in support of entrepreneurship. For Audretsch and Beckman (2007), entrepreneurship policy encompasses various levels of intervention and analysis. In contrast to SME policy that is primarily focused at the level of the enterprise, Audretsch and Beckman see entrepreneurship policy as more holistic, with interventions ranging from the individual and the enterprise to networks and clusters. And just as each of these levels is an important target for policy, the interactions and linkages across these disparate levels are also important. Accordingly, their analysis of entrepreneurship policies in Germany reveal that the creation of regional innovation systems has become the most important objective of government intervention (David B. Audretsch and Beckmann 2007, 47–49). In this context, policy instruments aim at facilitating the institutionalization of regional cooperation and network building in order to stimulate new firm formation. Hart (2003b) has an even wider understanding of entrepreneurship policy. He describes it as "covering a large policy domain encompassing the actions of several levels of government, having a bearing on low technology and high technology activity and ranging from regional policy to economic development policy to poverty reduction policy."

In contrast to this comprehensive and multi-level perspective on entrepreneurship policies, Lundstrom and Stevenson (2007) have a much more narrow and targeted perspective on the scope of such interventions. Because 'people' start firms, Lundstrom and Stevenson assert, this logically means that the unit of policy analysis and focus must shift away from the firm to the individual entrepreneur or potential entrepreneur. For them, this is one of the most distinguishing features of entrepreneurship policy vis-à-vis small business policy. Entrepreneurial activity starts before a firm is created, so entrepreneurship policy also includes provision for awareness creation and specific pre-start and start-up support. This entails policies and measures to create favorable conditions for the

emergence of entrepreneurs and new firms and to address their unmet needs through various phases of the entrepreneurial process. But Lundstrom and Stevenson focus more squarely on policy measures that target individual entrepreneurs and start-ups in their early stages of development.

But regardless of the approach that scholars have taken to define and characterize entrepreneurship policies, a review of the literature reveals that their work has paid scant attention to policy instruments to facilitate access to foreign markets. And the recent initiatives to support global entrepreneurship that are the object of study of this dissertation have certainly not been identified. While scholars recognize the importance of both supply- and demand-side interventions to support entrepreneurship (Audretsch et al. 2007b; Verheul et al. 2002; Wennekers et al. 2002), the literature reveals a bias, from both scholars and policymakers, towards the analysis and implementation of the former set of policies. And from the repertoire of demand-side policy instruments listed by scholars, the ones aimed at stimulating entrepreneurship by influencing the accessibility of markets, only a few of them are designed to facilitate access to foreign markets.

For Audretsch et al. (2007b), for instance, demand-side policies include competition policy, establishment and bankruptcy legislation, protection of property rights and the regulatory environment of product and labor markets. But their analysis of the different channels available for public intervention does not mention any instruments to facilitate access to global markets. While the entrepreneurship policies they analyze in Germany recognize the importance of intervening at multiple levels -individual entrepreneurs, firms, and networks of actors-, the interactions seem to stop at the level of the region. It seems as if the concept of Regional Innovation Systems has fixed the attention of both scholars and policymakers at the regional scale, at the expense of actors, resources and interactions taking place at the supra-national scale.

The analysis of instruments to support global entrepreneurship is also omitted in the work of Stevenson and Lundstrom (2007), who introduce a framework to classify policy measures consisting of six components:

- Entrepreneurship promotion;
- Entrepreneurship education;
- Reducing administrative, legislative and regulatory barriers to entry and exit;
- Business support for start-ups;
- Start-up and seed financing; and
- Target group measures.

Stevenson and Lundstrom use this framework to analyze 13 different economies and map their government policies and actions within each component. But their approach is too squarely focused on policies supporting new firm formation and their analysis overemphasizes supply-side policies.

The only set of demand-side policies they identify relate to barriers to entry and exit, and they do not mention any initiatives to facilitate access to global markets.

A scholar that lists some policy instruments to support access to foreign markets is Storey (2003). In his analysis of how governments intervene to foster entrepreneurship he identifies key policy problems and provides some examples of specific programs that seek to address them. Under the Markets/Demand policy area, he identifies the following instruments:

- Europarteneriat (European Union)
- Trade Fairs (Greece)
- Public procurement (USA)

From these demand-side instruments, only the first two focus on facilitating access to foreign markets. And in both of them trade fairs is the only mechanism to encourage cross-border trade between SMEs. Storey does not identify any other type of instruments to support global entrepreneurship and certainly not the instruments addressed in this dissertation that take a much more comprehensive and multi-location approach to supporting access to foreign markets.

Hoffman (2007) also identifies *access to foreign markets* as a policy area affecting the opportunities for entrepreneurship. In his cross-country comparison of entrepreneurship policies and their impact on entrepreneurial performance he mentions the following about instruments to facilitate access to foreign markets:

Globalization has opened up increased international opportunities for entrepreneurs. The disappearance of trade barriers and the integration of world markets have made it possible for all types of companies – including new ones – to exploit global opportunities. Even though trade barriers are decreasing as a result of efforts from international organizations and as such are out of the hands of national governments to some extent, national governments can still initiate globalization programs helping or motivating entrepreneurs to look abroad from the very birth of new firms (Hoffmann 2007, 167).

But Hoffman does not elaborate on what those globalization programs are. Nor he identifies any specific globalization programs being implemented.

In sum, a review of the literature on entrepreneurship policy reveals that the various initiatives that national and regional governments have been implementing since the early 2000s in order to support the global expansion of innovative firms have not been identified by scholars. This might be explained by a general lack of interest in studying specific policy instruments. In the words of Audretsch et al. (2007b), “entrepreneurship policy may actually be less about specific new instruments or agencies and more about how traditional policies and agencies need to be redirected from their traditional role in the *managed economy* to a very different orientation in the *entrepreneurial*

economy” (emphasis added). Thus, the authors sustain, “rather than focus on the addition of entrepreneurship policies to the arsenal of public policy instruments, the debate should perhaps focus instead on the changing role of public policy in the *entrepreneurial economy*” (David B. Audretsch, Grilo, and Thurik 2007b, 3). Another reason why current global entrepreneurship initiatives might have been missed by scholars is that they do not fit comfortably within the SME/entrepreneurship policy distinction. While these initiatives target innovative firms and have the explicit goal of helping them introduce new products and services to global markets, they work for the most part with existing companies. As their work might not be perceived as supporting the goal of new firm formation, scholars might have dismissed them as part of traditional SME policies. But in distinguishing entrepreneurship policies from traditional SME policies scholars seem to have adopted a very narrow definition of entrepreneurship. It is widely accepted that innovation and entrepreneurship are not the exclusive realm of new firms. And just as existing firms can be entrepreneurial, so too can public interventions enhance their entrepreneurial capabilities.

3.3. What is a Global Innovation Bridge (GIB)? A working definition.

In this dissertation I advance the argument that a new economic development tool has emerged in recent years with an explicit focus on supporting global innovation processes. My initial observations in the field revealed that practitioners lack the proper terminology to refer to this new policy instrument. In an attempt to describe and communicate their work, they have been using multiple terms like “international incubator,” “global business accelerator” or “bridge organization” that do not adequately express the goals and dynamics of these business support efforts. The lack of an accurate term for this type of initiative has also contributed to its under-theorization. Without an identifiable name these new initiatives have gone under the radar of scholars and have been conflated with similar economic development tools. To overcome this conceptual confusion I propose the following working definition that is informed by both empirical observations in the field and by the academic literature on innovation and global entrepreneurship.

A Global Innovation Bridge (GIB) is an economic development tool that seeks to create economic development opportunities in a country or region by helping innovative home-grown firms introduce new goods and services to global markets through an institutionalized, cross-national business support structure that includes a network of offices, human resources, specialized advisory services, and financial resources.

I choose the term “Global Innovation” to emphasize the main goal of these initiatives: supporting global innovation processes. Innovation is a complex and multi-faceted concept (Fagerberg 2005). In this case, by innovation I mean two interrelated ideas. First, I consider innovation as the process of introducing a product or service for the first time to a new market (Schumpeter 1911). Second, I use it to refer to the competitive strategies used by the firms gaining access to a foreign market, which in turn are based on the qualities of the products and services being commercialized. By global innovation I understand a commercialization strategy in foreign markets that is not just based

on price, but in establishing a competitive advantage through differentiation in the market. While the products and services being commercialized might not be entirely new in target foreign markets, companies introducing them apply technological advancements in order to find better solutions to customer needs and establish key differentiators from existing products and services (Teece 1986). I use the term “Bridge” to highlight the cross-national reach of the support structure provided, which as will be shown in the typology presented in Section 3.7, is a key differentiator from other initiatives that work locally to facilitate the global expansion of innovative firms.

As a policy instrument GIBs can adopt different organizational arrangements. GIBs are not necessarily operated through a single government program specifically created for that purpose. In some instances the support structure enabling global innovation processes is implemented through a new government program, as is the case of Mexico’s Technology Business Accelerator (TechBA) program. But in other cases, the same function is performed by a government program previously charged with the responsibility of incentivizing exports or by merging previous programs and organizations as in the case of the Irish program, Enterprise Ireland (EI).

It is also important to note that some of the government programs performing the function of a GIB might have wider goals and functions beyond providing business support services to firms wishing to expand globally². For instance, while Innovation Center Denmark helps Danish companies reach global markets it also works to attract foreign investment to Denmark. The Finnish program FinNode works to develop connections between research centers in Finland and universities and research centers around the world in order to facilitate knowledge transfer and collaborations. Arguably, all of these functions contribute to strengthening the innovation capabilities of home-grown companies and enhance global innovation processes. But in this dissertation I understand GIBs as the support structure and related services directly geared towards helping home-grown companies introduce their innovative goods and services to global markets.

3.4. What is driving the emergence of GIBs?

As a policy instrument, GIBs are in their early stages of development. A few have been operating since the late 1990s, but for the most part they result from government initiatives implemented throughout the 2000s. GIBs are the result of active experimentation by numerous national and regional governments seeking to stimulate economic growth. But what is driving national and regional governments to implement this form of economic development tool? My interviews with GIB managers and my analysis of various official documents reveal that three main factors are driving the emergence of GIBs.

² A detailed description of the different goals and functions of various government initiatives operating in Silicon Valley can be found in the report “Bridge Organizations: Description, Analysis, and Recommendations” published in 2010 by Norway’s Research Council and authored by Eilif Trondsen.

A. A perceived need for government intervention to increase the national economy's participation in high-growth, high value-added industries and promote a transition towards an innovation-based economic development model.

This perception responds to different situations in different countries. In the case of Mexico, the impetus to foster a transition came from the realization that the low value-added activities that currently dominate the national economy will be insufficient to achieve higher levels of prosperity. While the economic liberalization policies promoted since the mid-1980s had stimulated economic growth and boosted international trade, the national economy has been left out of the high technology markets that are perceived to offer the best jobs, the best returns, as well as fostering the overall development of regions³. With increased competition from other developing countries in low value-added manufacturing and service activities, government officials perceived the need to intervene in order to “get the business and entrepreneurial community in Mexico to gain confidence in them and realize it is possible to promote more sophisticated businesses with a higher component of technology.”⁴

In the case of Ireland the perceived need to reinforce indigenous innovation capabilities through government intervention responded to a different set of conditions. Even before the country was hit by the global economic crisis, the government became aware of the need to shift its economic development strategy. While the Irish government had been successful in developing a high-tech economic base by attracting subsidiaries of global technology companies, it became clear that the model had reached a limit. The Irish government realized Ireland was facing a point in its economic development where future economic growth would be largely determined by the performance and innovation capabilities of indigenous companies.^{5 6} The government also realized Ireland is now competing against the developed economies such as the United States, Japan, France, and the United Kingdom in a context where competition is largely determined by innovation and value added.⁷ But while the government was increasingly aware of the need to promote a new economic development strategy, the conditions for a shift were also created by Ireland's previous success in attracting global technology companies. After working in these global technology companies for several years, talented Irish professionals began launching their own start-ups, asking the government for support to grow and expand their technology-based businesses⁸. In response, the

³ Excerpts from interviews with government officials in the Mexican Ministry for the Economy and staff at Fundación Mexico-Estados Unidos para la Ciencia (FUMEC), unpublished document: “Una apuesta arriesgada”, Antonio Diego Fernández S.

⁴ Personal interview with the former Mexican Secretary for the Economy, January 2009.

⁵ Statement of Enterprise Ireland's CEO in EI's official document: “Transforming Irish Industry, Enterprise Ireland Strategy 2008-2010, p. 8.

⁶ Official document: Building Ireland's smart economy: A framework for sustainable economic renewal. Government of Ireland 2008.

⁷ Statement of Enterprise Ireland's CEO in an official video: “Innovation in Ireland,” <http://www.enterprise-ireland.com/en/> Accessed on August 2011.

⁸ Personal interview with EI's Senior Vice President Software and Services North America, Silicon Valley office. November 2010.

government has made explicit its intention to focus “energies and resources on growing a cohort of Irish companies with the ambition, leadership and innovation necessary to achieve global scale.”⁹

B. A small domestic market for high value-added products and services limiting the growth of innovative home-grown companies.

Some of the most active governments in promoting GIBs are those from countries with a small domestic market for high-value added products and services. A small domestic market is perceived as a major constraint in the growth of home-grown technology firms and in the promotion of high value-added industries.^{10 11} This is true not only of countries with small domestic markets in absolute terms, but also in those large middle-income countries with a limited market for high value-added products and services.

It is no surprise that countries like Denmark, Finland, Norway, Switzerland, Australia, and New Zealand, with populations ranging between 4 and 22 million people, are among the most active in supporting the global expansion of their home-grown companies through GIB initiatives. But larger countries like Mexico and Korea also have government initiatives to help their home-grown innovative companies reach out to high-income countries with larger markets for innovative products and services.

C. A recognition that previous government programs were inadequate to support the global expansion of innovative companies.

National and regional governments realized the inadequacy of existing business support programs to help innovative firms reach global markets. Even when existing export-promotion programs (EPPs) offer a network of foreign offices with in-market advisors in foreign countries who offer a number of specialized services to promote exports including the identification of potential customers and training in foreign business practices, government officials recognized that a different kind of support was needed for innovative companies participating in high value-added sectors. In particular, they recognized the need to enable companies to have a longer presence in key technology clusters with a full immersion in the foreign business environment and with the support of mentors with deep knowledge of technology markets.¹²

As a result, national and regional governments began experimenting with new models to help small and medium home-grown innovative companies participate in foreign markets. In some cases that search led to the creation of a new government program like in the case of Mexico’s TechBA. In

⁹ Statement of Enterprise Ireland’s CEO in EI’s official document: “Transforming Irish Industry, Enterprise Ireland Strategy 2008-2010, p. 8.

¹⁰ Personal interview with EI’s Senior Vice President Software and Services North America, Silicon Valley office. November 2010.

¹¹ Personal interview with the former Mexican Secretary for the Economy, January 2009.

¹² Personal interview with the former Mexican Secretary for the Economy, January 2009.

others, governments decided to revamp previous export promotion programs or merge previous economic development agencies to provide a cross-national support structure to facilitate global innovation processes as the Irish government did through Enterprise Ireland. In any case, as future economic growth and prosperity became associated with the development of an innovation-based economy, and as a limited domestic market was perceived as a constraining factor in the development of home-grown innovative companies, governments began playing a very active role in establishing connections with actors and resources in the most dynamic technology regions.^{13 14}

The consolidation of GIBs as a new economic development tool was accelerated by a process of collective learning among government officials and GIB managers from different countries. When recounting the process through which the TechBA program was established, a person who occupied a top-level position in the Mexican Ministry for the Economy and who played a key role in the design and launching of the program recalls:

After doing some research, we realized that other countries like Korea and Japan had been promoting the concept of technology business accelerators in Silicon Valley, California, which is the most important region for innovation worldwide. We then realized it was worthwhile to support qualified Mexican companies, with high potential innovative business projects, to gain access to that environment in order to establish technological and commercial partnerships to enhance their projects and expand their reach.¹⁵

As national and regional governments targeted the same key technology clusters around the world, GIB managers from different countries found themselves in close proximity from each other, working with the same mission, facing similar challenges, and often attending the same events. This led to an informal sharing of information on best practices that eventually resulted on more systematic efforts to encourage collective learning on strategies and methods to facilitate the entry of home-grown firms to a specific foreign market.¹⁶ Examples of these systematic efforts include a report commissioned by the Innovation Division of the Research Council Norway (RCN) on “Bridge Organizations.” With this report, released on November 2010, RCN attempted to gain an understanding of the operations of leading Bridge Organizations in Silicon Valley and the value and benefits these organizations can bring to their home country, sponsor organizations, and customers.¹⁷ On March 2011 another effort to engage in systematic learning among GIB managers was a workshop co-organized by the City of San Jose and the Mexican Technology Business Accelerator (TechBA) program. This “International Summit on Entrepreneurship and Innovation: Silicon Valley and its Siblings” was addressed at “foreign government representatives in the Silicon

¹³ Statement of Micheál Martin, Ireland’s Minister for Enterprise, Trade and Employment in EI’s official document: “Transforming Irish Industry, Enterprise Ireland Strategy 2008-2010, p. 8.

¹⁴ Enterprise Ireland’s official website, accessed on July 2011.

¹⁵ Personal interview with the former Mexican Secretary for the Economy, January 2009.

¹⁶ Personal interview with the CEO of TechBA-Silicon Valley, March 2008.

¹⁷ Bridge Organizations in Silicon Valley: description, analysis and recommendations. Report prepared for Norway’s Research Council, October 2010, Eilif Trondsen, PhD. p. 4.

Valley and international business associations and Bridge Organizations who are located or considering locating in the Silicon Valley.”¹⁸ The goal of the event was to enable participants “share and learn best business development practices for starting, growing and expanding growth, innovative companies” as well as to “learn about the resources that are available in Silicon Valley to benefit entrepreneurs from around the world.”¹⁹

Participants in this even also explored the possibility of establishing a formal association to further enable the sharing of knowledge and resources among representatives of foreign GIB initiatives in Silicon Valley. While this initiative has not yet materialized, GIB managers in Silicon Valley are clearly engaged in a process of collective learning leading to the consolidation of a new economic development tool: Global Innovation Bridges.

3.5. Key organizational features of GIBs.

The experimentation of national and regional governments has led to different organizational arrangements to facilitate global innovation processes. Nevertheless, GIBs share a number of organizational features:

- A. A government-backed initiative.** GIBs are government initiatives promoted by a national or regional economic development agency. In some instances, GIBs are directly operated by the same economic development agency implementing the initiative. In others, they are operated by a quasi-public agency that receives funding from the government while maintaining a certain degree of administrative and organizational autonomy. In yet other cases, the government designs, supervises, and funds a GIB while an independent third party or intermediary organization is in charge of its operation. But in all cases, a GIB maintains a formal affiliation with a national or regional government who plays an active role in the definition and implementation of its overall strategy.

- B. A global focus with operations on a regional basis.** While GIBs seek to connect home-grown companies with global markets in general, their international offices target key regions with a competitive advantage in specific high-growth industries of strategic importance for their home country. GIB’s foreign representations might be a gateway to whole national markets or even to multiple national markets in other continents. But these programs operate on the premise that certain regions around the world have developed specialized assets that make them competitive in specific industries. Accordingly, the foreign representations of a GIB focus on supporting firms in the industries that are particularly strong in that foreign location.²⁰

¹⁸ Personal interview with the CEO of TechBA-Silicon Valley, March 2008.

¹⁹ Personal interview with the CEO of TechBA-Silicon Valley, March 2008.

²⁰ Personal interview with EI’s Senior Vice President Software and Services North America, Silicon Valley office. November 2010.

C. A business support structure targeting innovative companies. GIBs are a business support structure targeting innovative companies in their home countries to help them become global competitors. This does not mean that GIBs work exclusively with companies in “high-tech” sectors. While there is an interest in increasing the participation of home-grown companies in high-growth, high value-added industries, GIBs work with companies in any industry as long as they have an innovative product or service with high potential in global markets. GIBs also work with both start-up and established companies. Again, the key factor when selecting a company is whether it has the potential to introduce an innovative product or service in global markets, regardless of their level of maturity. But while targeting innovative companies, GIBs center their efforts on guiding the entrepreneur leading the global expansion effort inside the company. The drive of the leading entrepreneur and the management team is considered key to the success of client companies. Accordingly, GIBs work closely with the leadership of the company, through mentoring and consulting services, in order to help them define and implement a strategy to reach global markets.

D. A business support structure involving formal and informal ties in both home country and target regions. GIBs are an intentional effort from a national or regional government to establish ties with public and private organizations in key regions around the world in order to support the global expansion of their innovative home-grown companies. In order to achieve their mission, GIBs make use of formal alliances and partnerships as well as informal relationships with actors and organizations supporting global innovation processes in both their home country and in target regions. Using their institutional support structure, GIBs have established formal alliances and partnerships with other national and regional governments as well as with academic and research institutions, business associations, service providers, non-profit organizations, and investment groups in order to advance their goals. But GIBs also make extensive use of informal ties to support entrepreneurs in their efforts to access global markets. GIB managers and mentors tap into their social and professional networks when helping a company identify potential customers, partners, investors or specialized service providers.

3.6. Key activities of GIBs.

While various national and regional governments share now the goal of supporting the global entrepreneurial efforts of their home-grown companies, there is wide variation in the level of support and the services that GIBs offer to client companies. However, GIBs also have key commonalities in the types of activities performed. The main activities of a GIB include the following:

A. Identifies and selects promising companies in home country or region. Working together with local incubators, universities, business chambers, local governments, and consultants a GIB identifies and selects the most promising companies based on the potential of their technology

or product offering to create value in global markets, the performance of the company, and the commitment and competence of its management team.

- B. Prepares companies to participate in global markets.** A GIB provides programs designed to familiarize client companies with the culture and business practices in foreign regions. It also prepares client companies to compete in global markets by initiating the process of aligning their product offering to the opportunities in target markets. Sometimes these programs are offered with the support of a local University.
- C. Leads companies through a full immersion in a foreign region.** GIBs enable client companies to establish a physical presence in a foreign region using its network of foreign offices. The length of their stay in a foreign location varies according to the needs of the company and the design of the program. But beyond enabling client companies to have a physical presence, GIBs facilitate a full immersion in a foreign region through the knowledge and contacts offered by its consultants and mentors. Consultants and mentors are individuals with lengthy experience and connections in a foreign region, with a deep understanding of the market and who can guide client companies through the process of identifying and accessing potential customers, partners, or investors.
- D. Provides financial support to client companies.** GIBs provide client companies access to financial resources to support their global expansion. GIBs typically offer client companies free or subsidized office space in foreign locations and cover part of their expenses related to mentorship and other specialized services. Some GIBs even offer seed funding in exchange of equity.
- E. Guides companies through the legal and administrative requirements to initiate operations in a foreign market.** GIBs facilitate the process of obtaining work visas for the employees of the company leading the global expansion effort abroad. They also advise the company on the adequate market entry strategy and connect client companies with law firms, accountants and other specialized service providers required to initiate operations in a foreign market.

3.7. A taxonomy of organizations supporting global innovation processes.

In recent years, numerous public and private initiatives have emerged to support the global expansion of innovative firms. Along with the initiatives of various regional and national governments to help their home-grown innovative companies reach actors and resources in distant regions and expand to global markets, several regions around the world have seen the emergence of different types of organizations working to attract foreign companies and facilitate their entry to their own market. But while numerous organizations share the goal of facilitating the global expansion of innovative companies they vary widely according to their mission and support

structure as well as in their specific objectives and tactics. Where do we draw the line between GIBs and other initiatives supporting global innovation processes? How are GIBs different from the many local organizations working to attract foreign companies? What are the differences among various government-backed initiatives working to support the global expansion of their home-grown innovative companies?

In this section I use evidence collected in the Silicon Valley region in California to develop a taxonomy of the different types of organizations supporting the global expansion of innovative firms. Silicon Valley is a region recognized by its competitive advantage in supporting global innovation and entrepreneurship (Saxenian 1996; Saxenian 2007). Given the high presence of global technology companies in the Silicon Valley region, as well as a wide range of organizations and resources supporting technology businesses, Silicon Valley has become a magnet for foreign technology-based companies seeking to use it as a gateway to enter global technology markets. Accordingly, numerous organizations in this region have either emerged or shifted their focus to help foreign companies gain access to local actors and resources and support their global expansion efforts. This variety makes Silicon Valley an ideal case to develop a taxonomy of the different types of GIBs vis-à-vis other local organizations.

The variety of organizations supporting global innovation processes can be classified according to their function in a four-group taxonomic scheme defined by two variables (See Table 3.1). The first variable refers to the spatial reach of the support structure facilitating the global expansion of innovative firms. Under this variable we find two categories, organizations with a local support structure and organizations with a cross-national support structure. The first category includes organizational arrangements where the material, human, and financial resources supporting the global expansion of innovative firms are confined to one region. Conversely the second category includes organizational arrangements where the material, human, and financial resources supporting the global expansion of innovative firms are functionally and organizationally integrated across regions in two or more countries.

The second variable defining the four-group taxonomic scheme refers to the direction of the global expansion effort. Under this variable we find two categories, organizations working inwardly or following a “pull strategy,” and organizations working outwardly or following a “push strategy.” The first category refers to organizations whose mission is to attract foreign companies and facilitate the introduction of their innovative products and services into the local market. The efforts of these organizations are justified not only by the direct economic stimulus that incoming companies are expected to have on a local economy, primarily in the form of investments and jobs, but also by the knowledge, talent, contacts, and technology they bring to a region or country to reinforce its innovation system. The second category refers to organizations whose mission is to support the global expansion of home-grown companies. The efforts of these organizations are justified by the jobs and economic growth that local companies will generate in their home region by introducing

goods and services in larger markets abroad. But beyond the quantitative economic gains, these efforts are also expected to foster a transition towards an innovation-based economic development model by increasing the participation of firms competing in more sophisticated markets in high value-added industries.

Table 3.1. A taxonomy of organizations supporting global expansion of innovative firms

		Spatial reach of support structure	
		Local	Cross-national
Direction of the effort	Inward (Pull strategies)	Global Innovation Gateway	Global Innovation Magnet
	Outward (Push strategies)	Global Innovation Springboard	Global Innovation Bridge

The resulting taxonomic scheme involves four groups representing the four main functions that organizations supporting global innovation processes can perform. Organizations working inwardly to attract foreign innovative firms and with a support structure confined to the local context are **Global Innovation Gateways**. These are organizations offering “market entry” or “soft-landing” services to foreign companies in order to ease their process of initiating operations in the local market and commercialize their innovative goods and services. Typically, these organizations support client companies by offering office space, specialized services, mentorship, and connections with potential customers, partners, and investors in the local market. The core of their services relies on the work of mentors with deep expertise on specific industries, business practices, and with dense professional networks in the local market who can guide client companies in the process of entering that specific market. But the extent of the support structure offered to client companies is primarily confined to a single region. Some of these organizations offer “virtual offices” for foreign companies to have a local representation while operating remotely, but the majority of these organizations’ material, human, and financial resources are contained within their local market.

An example of an organization performing the function of a Global Innovation Gateway in Silicon Valley is the US Market Access Center (US MAC), formerly known as the International Business Incubator. Located in San Jose, California, US MAC is a project initiated by the now extinct City of San Jose’s Redevelopment Agency and by the San Jose State University Research Foundation. It works exclusively with emerging foreign technology companies who are interested in entering the

United States market, primarily in Silicon Valley.²¹ Another example is the for-profit accelerator Plug and Play Tech Center with three locations in Silicon Valley, Sunnyvale, Palo Alto and Redwood City. Using the slogan “Silicon Valley in a box,” Plug and Play offers a wide range of resources and services for foreign companies wishing to enter the Silicon Valley market. Plug and Play’s comprehensive offering includes resources like office space and a data center as well as in-house hiring services and access to Silicon Valley-based legal, accounting, offshoring and PR firms. It also provides access to funding through its own investment fund and by facilitating contacts with local VCs and Angel Investors. Finally, it offers mentorship through “Executives in Residence,” or experienced executives and serial entrepreneurs who provide advice to client entrepreneurs.²²

In addition to these organizations offering a comprehensive set of resources and services to facilitate the market entry to Silicon Valley, there are other local organizations performing the role of a Global Innovation Gateway. Among these are the following:

- Whiteboard Accelerator, a spin-off of the legal services firm White&Lee. Through its “Quick Start Market Launch” service, Whiteboard Accelerator specializes in “helping global technology companies establish a presence and operations in the US market as quickly and effectively as possible. It is supported by a network of senior legal, marketing, sales and business development consultants, many from countries around the world that have had successful careers building and growing companies in the US market.”²³
- Globaltech Bridge, a San Jose-based consulting firm specializing on US market entry services for Latin American companies. “Global Tech Bridge supports the process of opening markets in the United States from initial orientation and preparation, to the establishment of local presence, and attainment of clients and capital.”²⁴
- University of San Francisco’s (USF) Globalization Program. This corporate program offered by the School of Management “offers a practical curriculum for starting a global business to new or existing companies in emerging economies. Graduates acquire the state-of-the-art knowledge and tools necessary to compete, and win, worldwide.” In addition to the academic content, USF’s Globalization Program “offers customized visit to the U.S. to visit and meet with potential customers, distribution channels, technology partners, investors, lawyers, and accountants. This visit provides direct interaction with Silicon Valley’s entrepreneurial ecosystem and exposure to the cultural aspects of doing business in the U.S.”²⁵

Organizations also working to attract foreign innovative companies but with a cross-national support structure are **Global Innovation Magnets**. These organizations have foreign

²¹ <http://www.usmarketaccess.com/about-us> Accessed August 2011.

²² <http://www.pluginandplaytechcenter.com/> Accessed August 2011.

²³ <http://whiteboardaccelerator.com/> Accessed August 2011.

²⁴ <http://www.globaltechbridge.com/GlobalTech/home.html> Accessed August 2011.

²⁵ http://www.usfca.edu/management/corporate/Globalization_Program/ Accessed August 2011.

representations to conduct promotional activities, identify potential companies, and facilitate their expansion to the attracting region or country. These activities are functionally and organizationally integrated with material, human, and financial resources in the region or country promoting the attraction effort. In that way, these organizations create a cross-national “magnetic field” that lures foreign companies and funnels them to a “magnet” or attracting region or country. An example of an organization performing the function of a Global Innovation Magnet is Start-up Chile. Start-up Chile is a program of the Chilean Government, created by the Ministry of Economy, “that seeks to attract foreign, high-potential entrepreneurs to come to Chile to bootstrap their businesses with the end goal of converting Chile into the innovation and entrepreneurial hub of Latin America.”²⁶ Participating companies are selected jointly by a group of Silicon Valley experts and a Chilean Innovation board and according to Start-up Chile’s website, “their projects mostly fit into the tech genre, but the variety is wide with teams specializing in energy, e-commerce, social endeavors, and design.” Start-Up Chile is fully supported by the Chilean Government through the Ministry of Economy, the Ministry of Foreign Affairs, and the Ministry of Internal Affairs.

Although not exclusively focused on the attraction of innovative companies, another example of an organization performing the role of a Global Innovation Magnet is the City of San Francisco’s ChinaSF initiative. ChinaSF is a collaborative public/private economic development initiative, operated by the San Francisco Center for Economic Development and the City of San Francisco with the financial and strategic backing of key international business leaders. This program takes advantage of the high presence of Chinese-Americans in the region in order to attract rapidly growing Chinese companies by helping them establish North American headquarters and business operations in San Francisco. With foreign representations in Shanghai and Beijing, ChinaSF can generate leads and opportunities in China that can be forwarded to the San Francisco office and to the many supporting organizations of ChinaSF.²⁷

Moving to organizations working outwardly to help innovative home-grown companies introduce their goods and services in foreign markets we first have organizations with a local support structure or **Global Innovation Springboards**. These organizations offer “internationalization” or “global expansion” services to home-grown innovative firms. The function of Global Innovation Springboards is increasingly performed by local business incubators or accelerators in response to the emerging requirements of new start-ups. According to Grimaldi and Grandi (2005), while early incubation efforts focused on provide logistical services, so as to reduce the startup costs for new ventures, the focus of more recent incubators seems to be on shortening clients’ time-to-market, providing more intangible and high-value services. As a result, business incubators and accelerators have increasingly focused their efforts on helping client companies identify and access new markets across borders (Lalkaka 2001; Knopp 2007; Al-Mubarak and Busler 2010). But the majority of the resources of these local incubators and accelerators are confined to their home region. They support

²⁶ <http://www.startupchile.org/> Accessed August 2011.

²⁷ <http://www.oewd.org/China-SF.aspx> Accessed August 2011.

the global expansion of client companies by providing access to information and mentors with expertise in international markets but they lack a support structure in target markets to facilitate the entry of client companies.

Finally, we have organizations working to support the global expansion of home-grown innovative companies with a cross-national support structure. These **Global Innovation Bridges** have developed material, human, and financial resources that are functionally and organizationally integrated across borders. In target markets they offer office space and access to in-market advisors to help client companies in the process of defining a value and developing the resources and capabilities needed for effectively commercializing their products abroad. They also offer access to specialized services and contacts with key organizations abroad that in coordination with material, human, and financial resources at their home location help client companies “bridge” the distance to global technology markets.

Organizations performing the role of Global Innovation Bridges are being promoted by numerous national governments. A few examples include the Irish program Enterprise Ireland (EI), the Technology Business Accelerator (TechBA) program of the Mexican Government, the program of the Finnish Government FinNode, and the Australia, New Zealand, America Technology Network (ANZA) supported by the Australian and New Zealand Governments. An extended list of Global Innovation Bridges with operations in Silicon Valley is included in Table 3.2.

Table 3.2. Organizations performing the function of a Global Innovation Bridge with representations in Silicon Valley.

Country	Organization	Website
Australia & New Zealand	Anza Technology Network	http://www.anzatechnet.com/
Czech Republic	Czech Invest	http://www.czechinvest.org/en
Denmark	Innovation Center Denmark, Silicon Valley	http://www.siliconvalley.um.dk/en
Estonia	Enterprise Estonia	http://www.eas.ee/
Finland	FinNode	http://www.finnode.fi/en/usa/
Japan	US-Japan Business Innovation Center	http://www.jetro.org/working_with_japanese_startups_and_smes
Ireland	Enterprise Ireland	http://www.enterprise-ireland.com/en/
Korea	Kiica Silicon Valley	http://www.kiica-sv.com/
Korea	Korea Software Promotion Center	http://www.kotrasw.org/
Norway	Innovation Norway	http://www.innovasjon Norge.no/Contact-us/
Singapore	Infocomm Development Authority of Singapore (IDA) iSTART@SV Program	http://www.ida.gov.sg/
Switzerland	Swissnex San Francisco	http://swissnexsanfrancisco.org/
Taiwan	ITRI USA (Silicon Valley) (Industrial Technology Research Institute)	http://www.itri.com/

This taxonomy highlights the functions that organizations supporting the global expansion of innovative firms can perform regardless of their specific organizational structure and source of support. In some instances, these functions are performed by a public organization through programs entirely funded and operated by a national government through an economic development agency. In others, they are performed by intermediary, non-profit organizations with the support of a government agency. In yet other cases, they can be performed by private, for-profit entities. Often, these functions are carried out through organizational arrangements involving public-private partnerships among two or more organizations. However, in the case of organizations performing the role of a Global Innovation Bridges identified so far, there is always a public organization involved.

Also, some organizations can follow “push” and “pull” strategies simultaneously. From the organizations identified in Silicon Valley, Global Innovation Gateways often perform as Global Innovation Springboards at the same time. But so far I have only identified this dual role in organizations operating with a local support structure. Organizations supporting the global expansion of innovative firms with a cross-national support structure are either working inwardly as Magnets or outwardly as Bridges.

In some instances, cross-national support structures are formed through the collaboration of two or more organizations predominantly operating on a local basis. That is the case of Global Innovation Bridges that are formed through the collaboration of a Global Innovation Gateway and a foreign economic development agency. Each of these organizations work primarily on one end of the “bridge” but have developed organizational and functional ties that enable them to provide integrated business support services across borders. That is the case of the Czech Invest program, supported by the Czech Government and operated in Silicon Valley by the local accelerator Plug and Play Tech Center that works primarily as a Global Innovation Gateway.

Up to now, there is no clear framework to distinguish among the different functions that organizations supporting the global expansion of innovative firms can perform. From the vantage point of actors located in a region where various types of initiatives operate, it is hard to distinguish their differences since they all perform similar activities and target innovative firms. This situation has led practitioners to conflate among the different kinds of global innovation initiatives. In particular, practitioners have conflated organizations performing the role of Global Innovation Bridges with existing organizations like business incubators or Diaspora strategies that do not adequately reflect their goals, structure, and functions. By highlighting the functions that organizations supporting the global expansion of innovative firms can perform, this taxonomy allows us to understand those differences regardless of the specific organizational arrangement employed to perform that function. It also allows both practitioners and scholars to explore their differences and potential as economic development tool.

In addition to the organizations offering business support services to facilitate the global expansion of innovative firms, numerous initiatives have emerged in recent years to facilitate networking and knowledge transfer across borders among professional communities with a common ethnic or national origin. These organizations seek to promote business opportunities and technological collaborations among its members and typically promote these synergies through the organization of conferences, networking events, and educational programs. But while these organizations play an important role in supporting global innovation processes, they typical do not offer structured business support services to guide innovative companies through the process of introducing their products to new markets. I call these organizations Diaspora Networks or self-organized groups of expatriates (Y. N. Kuznetsov 2006; Saxenian 2006) and I do not include them in the typology of initiatives supporting the global expansion of innovative firms. Examples of this type of organization include the following:

- The German-American Business Association (GABA). “A member-driven non-profit organization that fosters transatlantic knowledge-sharing and networking among German-American and Californian business and tech communities. GABA is dedicated to encouraging German-American business and trade.”²⁸
- The Indus Entrepreneurs (TiE). “TiE is a global, not-for-profit network of entrepreneurs and professionals dedicated to the advancement of entrepreneurship. TiE provides a platform for mentoring, networking & education, to entrepreneurs & professionals.” It has 57 Chapters worldwide.²⁹
- Business Association Italy America (BAIA). “A non-profit organization that facilitates the open exchange of knowledge and information between the United States and Italy.”³⁰
- Irish Technology Leadership Group. “Established in October 2007, the ITLG is an independent organization comprised of a number of high-level technology leaders in Silicon Valley who are Irish or Irish-American. The Group includes senior executives from some of the Valley's leading corporations, each of whom are committed to promoting the technology connection between Ireland and Silicon Valley, and helping Ireland address the challenges of embracing new technology opportunities.”³¹

3.8. Conclusion

In this chapter I developed an initial characterization of a new tool to promote economic development: Global Innovation Bridges (GIBs). I showed how this new policy instrument is the result of active experimentation from some national and regional governments looking to support

²⁸ <http://www.gaba-network.org/> Accessed on August 2011.

²⁹ <http://www.tie.org/> Accessed on August 2011.

³⁰ <http://www.baia-network.org/index.aspx> Accessed on August 2011.

³¹ <http://www.itlg.org/> Accessed on August 2011.

the global expansion of innovative home-grown firms. These efforts are based on the premise that facilitating access to global technology markets will accelerate the growth of innovative companies at home, generating new jobs and income. But in addition to a quantitative increase in economic activity, governments are using GIBs in an attempt to foster a transition towards high-growth, high value-added economic activities.

These initiatives represent a drastic departure from previous government strategies to promote economic growth and technological development that were focused on attracting foreign investment. Never before have governments played such an active role in supporting the global expansion of small and medium innovative companies. Mobilizing human, organizational, and financial resources between their countries of origin and the most dynamic regions of innovation around the world, national and regional governments have effectively constituted a cross-national support structure to support global innovation processes. However, the academic literature on entrepreneurship has completely missed the emergence of this new policy instrument. In this chapter I showed how the literature on international entrepreneurship has been too narrowly focused on the entrepreneur and his relationship with the market, paying scant attention to the role of government policies. I also showed that scholars explicitly focused on entrepreneurship policy have not looked in detail to specific policy instruments to support access to foreign markets, even when this has been recognized as a policy objective. With my characterization of GIBs I seek to fill this gap in the academic literature, expanding our understanding of this novel policy instrument and stimulating more academic work to inform the efforts of policy makers.

My analysis showed that GIBs can be constituted through a variety of organizational configurations, often involving public-private partnerships between organizations in different countries. Rather than conceptualizing these initiatives as a single government program or a specific organization, with my analysis I argue that GIBs should be understood as a new function performed by some national and regional governments to support global innovation processes. The organizational ambiguity that characterizes GIBs might be one reason why scholars have failed to identify them as a new and distinct economic development tool. And lacking an adequate conceptual framework, practitioners involved in the operation of GIB have also had trouble communicating their work. My fieldwork reveals that practitioners have been referring to these initiatives using terms like “international business incubator” or “bridge organization.” These improvised terms do not adequately reflect the goals and activities of GIBs, contributing to the confusion.

The taxonomy developed in this chapter helps us differentiate the function of a Global Innovation Bridge from other functions that organizations supporting the global expansion of firms can perform. By distinguishing among the functions of Global Innovation Gateways, Springboards, Magnets, and Bridges, we can clearly differentiate among organizations that otherwise would seem to perform the same role. This taxonomy allows us to distinguish an organization performing the role of a Global Innovation Bridge from a local business incubator acting as a Global Innovation

Gateway or Springboard. It also allows us to distinguish GIBs from organizations not providing structured business support services like the numerous foreign diaspora networks. However, this characterization still leaves many questions open about how GIBs operate. How are GIBs leveraging the resources in distant regions in order to support the global expansion of their home-grown companies? How are GIBs supporting a cross-national flow of talent, knowledge, technology and capital? Even if GIBs help overcome the geographical distance to the most dynamic regions of innovation around the world, how are they helping entrepreneurs overcome the organizational and cultural distances that can hinder the type of cross-regional collaborations needed to sustain global innovation processes? In the next chapters I move from descriptive to explanatory analysis in order to answer these questions. Conducting an in-depth analysis of the Mexican GIB, the Technology Business Accelerator (TechBA) program, in the following two chapters I seek to further expand our understanding of GIBs and to engage with the literature on organizational arrangements supporting learning and innovation across distant regions.

4. Mexico's Technology Business Accelerator Program (TechBA):

Weaving a cross-national community of practice supporting global innovation processes

4.1 Introduction

The previous chapter showed how Global Innovation Bridges (GIBs) emerged recently as a result of active experimentation from national and regional governments looking to help their home-grown innovative companies introduce new goods and services to global markets. This chapter takes a closer look at one of these initiatives, the Technology Business Accelerator (TechBA) Program of the Mexican Government. My goal in this chapter is to explore the workings of the cross-national business support structure that GIBs have put in place in order to achieve their mission. In doing so, I focus on the formal institutional arrangements as well as in the informal collaborations that the Mexican Government has established with actors both in Mexico and in foreign regions in its efforts to support the global expansion of Mexican innovative firms.

Using the case of the TechBA program in this chapter I seek to answer the following question:

How are GIBs establishing a cross-national business support structure to enable the global expansion of their home-grown innovative firms?

My analysis is informed by the literature on “communities of practice,” an analytical framework that aims at understanding the social dimension of learning processes. Scholars have used the concept of communities of practice to understand how learning takes place through interactions of individuals bound together by shared experience, expertise, and commitment to a joint enterprise (Lave 1991; Brown and Duguid 1991; Wenger 1998; Brown and Duguid 2001). I will use the concept of communities of practice to look beyond the formal organizational structures of the TechBA program and focus on all the members of a community who share a domain of interest as well as a commitment to solving common problems, regardless of their affiliation. Accordingly, this chapter maps the different actors surrounding the TechBA program, from those directly responsible for its design and operation, to individuals without a formal affiliation to the program but who help advance its mission through business relations or other forms of collaboration.

In this chapter I will also engage with a recent strand on this literature that looks at “distributed” communities of practice. Observing that the internationalization of business is making operations more geographically distributed, scholars have recently turned their attention to the way communities of practice might operate across long distances, raising the question whether communities of practice can continue to operate in such an environment? (P. Hildreth, Kimble, and Wright 2000). This chapter contributes to this literature by providing a detailed example of how distributed communities of practice actually work, probably the only case completed in the regional economic development field.

Applying the communities of practice framework to the analysis of the TechBA program, this chapter advances the following arguments:

1. The TechBA program articulates a community of practice that involves individuals in various organizations linked together by a common goal: supporting the global expansion of Mexican companies. These are individuals whose work is related to the many technological, commercial, financial, and legal aspects that enable a company introduce innovative products and services to global markets. While all these individuals work for organizations that have their own agendas and goals, they all contribute in one way or another to advancing the mission of the TechBA program.
2. TechBA sustains a distributed community of practice that transcends national borders. Through partnerships and collaborations with actors in both Mexico and in foreign markets, TechBA articulates a community of practice that operates across distant regions in different countries. The staff and individuals more closely involved in the operation of the TechBA program serve as a “brokers,” mediating among various technical and business communities in distant regions.
3. By establishing a distributed community of practice TechBA has been able to mobilize knowledge, technology, talent, and capital across borders in order to sustain global innovation processes. The formal partnerships and informal collaborations established by TechBA in both Mexico and abroad provide Mexican companies with the necessary resources to support their global expansion efforts.

This chapter is organized as follows. Section 4.2 first provides a brief overview of the TechBA program. This section outlines the structure and operation of the program and identifies the actors directly responsible for its design and operation. Section 4.3 then expands my analysis to identify all the relevant actors surrounding the TechBA program in global markets. Focusing my analysis on TechBA-Silicon Valley, this section will highlight the different institutional and organizational arrangements that bring together these different actors as well as the resources each contributes in support of TechBA’s mission. Section 4.4 will turn to the interactions that TechBA sustains with different actors in Mexico and how its cross-national structure enables it to mobilize knowledge, technology, talent and capital across borders. Subsequently, section 4.5, links my observations of the TechBA program with the literature on communities of practice in order to address the following analytical questions:

- Does the constellation of actors surrounding the TechBA program constitute a community of practice?
- If so, how is the TechBA community of practice defined? What are its limits? Who are its members?
- Does TechBA operate as a “distributed” community of practice?

In the conclusions, I will discuss the implications of using the communities of practice framework to analyze the dynamics of the TechBA program.

4.2 An overview of the Technology Business Accelerator (TechBA) Program

4.2.1 Origins and goals of the TechBA program

In 2004 the Mexican Government launched the Technology Business Acceleration (TechBA) program with the goal of accelerating the growth of small and medium-size enterprises in Mexico by supporting their expansion to global markets.³² TechBA was designed to support companies with innovative products or services, which already have successful operations in the Mexican market, and have the potential to reach global markets. Accordingly, TechBA offers a business development process and access to key actors and resources aimed at turning successful Mexican companies into successful global players.^{33 34}

By helping innovative Mexican companies compete in international markets, the Mexican Government also seeks to foster the development of high value-added economic activities in Mexico. The TechBA program focuses on companies in the following sectors:³⁵

- Information Technologies
- Aerospace
- Automotive
- New Media
- Biotechnologies
- Microsystems
- Health Technologies
- Energy
- Manufacturing

4.2.2 The institutional and organizational context

TechBA is funded by the Mexican Ministry of Economy and operated by the Mexico-United States Foundation for Science (FUMEC, by its Spanish acronym). FUMEC was created in 1992 as a bi-national non-profit organization with the mission to “promote bi-national collaboration in science and technology to solve problems and address opportunities for both Mexico and the United States.”³⁶ The Foundation has an endowment made up with contributions from the federal governments of both countries, which aims at ensuring the “operational stability for the organization, at the same time providing for a seed fund that allows multiplication of its resources and bi-national capabilities.”³⁷ With a mandate to serve as an articulator of institutional efforts to

³² <http://www.techba.org>, accessed on November 23, 2011

³³ Diasporas as Catalytic Agents for Accelerating Mexican Companies into the Global Market. Unpublished document. Adolfo Nemirovsky, TechBA Silicon Valley Consultant and Jorge Zavala, CEO TechBA Silicon Valley. June 2007.

³⁴ Mexico-US Foundation for Science (FUMEC). Biennial Activities Report 2008-2009, p. 16.

³⁵ Remarks of Guillermo Fernandez de la Garza, CEO, FUMEC at the Conference: Innovation Across Borders, MaRS Centre, Toronto, Canada February 24-25, 2011.

³⁶ <http://www.fumec.org.mx>, accessed on November 23, 2011

³⁷ Mexico-US Foundation for Science (FUMEC). Biennial Activities Report 2008-2009, p. 13.

enable collaboration in science and technology among Mexico and the U.S., FUMEC provides the institutional and organizational framework to operate the TechBA program across borders.³⁸ Its Board of Governors is made up of 16 distinguished individuals from both countries with a successful track record in the academic, government or business sectors, which places them in an advantageous position to identify strategic aspects that require attention in both countries. A key characteristic of the TechBA program is its novel spatial configuration. In order to support the global expansion of Mexican companies FUMEC has established a presence in some of the most dynamic regions of technological innovation around the world. TechBA's approach has been to facilitate the direct interaction of Mexican companies with "international ecosystems" as the mechanism to "generate sales, strategic partnerships and attract investment."³⁹ In each of its international offices TechBA provides working space (including all infrastructure needed to operate like conference rooms, phone, internet access, etc.), access to local consultants and mentors, as well as access to specialized service providers to support the various technological, commercial, legal, and financial activities that Mexican companies need to carry out in their quest to become global players.

TechBA began operations in 2005 with the establishment of its first foreign representation in Silicon Valley, California. Since then, FUMEC has expanded its presence to eight regions around the world, broadening in that process its structure and reach to operate in other countries as well. Currently, FUMEC operates in the following regions: Silicon Valley, California; Austin, Texas; Phoenix, Arizona; Seattle, Washington; Detroit, Michigan; Montreal and Vancouver, Canada; Madrid, Spain. Each of TechBA's foreign representations is operated by a small team between two and four FUMEC staff members who are responsible for running TechBA's business support programs in coordination with the staff at FUMEC's central offices in Mexico City as well as with other entities in both the host region and back in Mexico.

4.2.3 The TechBA business support model

TechBA consists of a business support program structured in four stages⁴⁰. The process begins with a once-a-year selection process organized by the Mexican Ministry of the Economy and FUMEC, where a committee comprised of international and Mexican experts in business, technology, and venture capital select the best companies. The selection process organized in 2008 to select the cohort of TechBA companies that would participate in the program during 2009 included workshops in 19 cities throughout Mexico. During these workshops FUMEC brings together its staff working at TechBA's foreign representations as well as external consultants to impart training sessions on international commerce and identification of business opportunities in global markets.

³⁸ Personal interview with the CEO of TechBA-Silicon Valley, March 2008.

³⁹ Mexico-US Foundation for Science (FUMEC). Biennial Activities Report 2008-2009, p. 16.

⁴⁰ TechBA's business support process has evolved considerably since the program began operations in 2005. This description is based on the business support process that was implemented in 2009-2010, when I conducted my fieldwork. Since then, the model has been adapted, varying the length of the different stages as well as the business support activities included in each one. For the purpose of this dissertation I will describe the TechBA program as it was structured when I collected my data, pointing to any variations whenever relevant for the analysis.

In addition, each aspiring company is interviewed by the selection committee who picks the most innovative companies with the greatest potential to succeed in global markets.

The selection process that took place in 2008 selected 120 new companies to receive acceleration services in one of the four foreign locations the TechBA program had at that time, Austin, Madrid, Montreal, and Silicon Valley. During this selection process the Mexican Ministry of the Economy and FUMEC collaborated with local governments, universities, business associations, incubators, and other local organizations to identify potential clients.^{41 42}

Selected companies then move into the “pre-acceleration” stage of the program, a four-month program intended to help companies assess and define a global expansion strategy before making a full commitment to launch themselves into that effort. This stage is structured around four goals: Explore, Define, Develop and Validate, which are developed through three main steps. First, companies participate in an “induction week” at the TechBA office abroad that they intended to use as a launching pad for their internationalization. During this induction week companies receive training in topics related to their global expansion, such as local business practices, migration and fiscal issues, intellectual property, market analysis, go-to-market strategy, venture investment, etc. This week also aims to familiarize Mexican entrepreneurs with the “local ecosystem” in the foreign location in which they are going to operate when implementing their strategy. For that purpose TechBA brings in local actors such as specialized service providers and investors to impart the various training sessions. TechBA also promotes participation in local networking events to encourage entrepreneurs to interact with local actors.

During this induction week TechBA pairs each participating company with a consultant who works with the entrepreneur leading the global expansion effort in assessing the potential for that company to become global and in defining its global expansion strategy. These consultants are hired on a project basis and for twelve weeks after the induction week, they work remotely with the entrepreneurs at their home location in Mexico in developing their strategy and gearing up for its implementation. This is when companies develop the four goals mentioned above. They “explore” the market opportunity and conduct a SWOT (Strengths-Weaknesses-Opportunities-Threats) analysis and a competitive analysis. They “define” a value proposition, a set of business goals, and a budget and financial strategy. Then they “develop” marketing materials, a sales plan, and a go-to-market strategy. Finally, they “validate” their value proposition seeking and interviewing first customers and evaluating the results.⁴³

After those twelve weeks, companies participate in the “closing week” of the pre-acceleration stage. During this week Mexican entrepreneurs return to their selected TechBA location abroad to receive

⁴¹ Inicia 5a Convocatoria TechBA. <http://www.sg.com.mx/content/view/659> Accessed on November 2011.

⁴² Reglas de Operación 2008, Programa TechBA. FUMEC-Secretaría de Economía. México 2008.

⁴³ Official slide presentation. TechBA program. Presented by Jorge Zavala, CEO of TechBA-Silicon Valley.

additional workshops and to make a 7-minute pitch of their company to a panel of experts integrated by business and technology consultants and other local actors such as investors. Only the best companies are then selected to move into the “acceleration” stage of the program, which lasts eight to ten months. The companies that are not selected do not maintain a connection with the TechBA program although they can re-apply in subsequent years.

The “acceleration” stage, also called “commercial acceleration” is focused on helping companies introduce their products and services to global markets and gain customer traction.^{44 45} During this stage, the entrepreneurs leading the effort are encouraged to move to the foreign location in order to implement their global expansion strategy. In practice, most entrepreneurs implement their strategy during short stays in the foreign location as they continue to be involved in their company’s operations in Mexico. The acceleration stage is also designed to guide entrepreneurs in the process of adapting their company structure and organization to support commercial operations abroad. This is done by helping them obtain international certifications, working visas, intellectual property protection, and by helping them establish a subsidiary abroad when needed.⁴⁶ During the acceleration process, entrepreneurs continue working with a TechBA consultant who plays a key role in facilitating contacts with potential customers, partners, specialized service providers, and sources of capital.

After completing the commercial acceleration, companies can extend their participation in the program for an additional twelve months into a stage focused on “financial acceleration.” This stage, known internally as “re-loaded,” is designed for companies who have successfully introduced their products and services to global markets and intend to raise capital to further expand their operations abroad.

4.3 TechBA, the universe of actors supporting the global expansion of Mexican companies in global markets

This section takes a closer look at the dynamics of the Silicon Valley office of the TechBA program in order to understand how TechBA mobilizes resources across borders to support the global expansion of Mexican companies. It looks beyond the organizational structure of the TechBA program in order to understand the formal partnerships and informal collaborations this program has developed with actors both in Mexico and in foreign regions in order to advance its mission. It also explores the kind of resources TechBA is mobilizing through those partnerships and collaborations in support of Mexican companies.

⁴⁴ Official slide presentation. TechBA program. Presented by Jorge Zavala, CEO of TechBA-Silicon Valley.

⁴⁵ TechBA official website: <http://www.techba.org> Accessed on May 2011.

⁴⁶ TechBA official website: <http://www.techba.org> Accessed on May 2011.

4.3.1 Local partners in foreign regions

As discussed above, FUMEC constitutes the organizational core of the TechBA program and its staff articulates TechBA's business support programs across different locations around the world. But in order to strengthen its operational capabilities abroad, FUMEC has established alliances with local organizations in each of the eight foreign regions where it has representations.

When it opened its first representation in Silicon Valley, TechBA began operating with the support of The Enterprise Network (TEN), an existing local incubator. Back in 2005 when TechBA began operations, TEN had 12 years of experience launching successful companies in Silicon Valley with graduates including companies like eBay, Credence Technologies, and Redcreek Communications. FUMEC signed a five-year contract with TEN to support TechBA's operations in Silicon Valley that included hosting facilities as well as access to TEN's network of consultants and specialized service providers. Under this agreement, TechBA still had to hire consultants and service providers separately, but TEN facilitated introductions and provided guidance to support the TechBA's acceleration activities.^{47 48} But three years into this partnership, TEN faced financial difficulties and decided to sell the building where TechBA was located. Since then, TechBA Silicon Valley has been operating independently with the support of external consultants and service providers and in collaboration with local organizations.

In a similar model to what was initially intended in Silicon Valley, TechBA Montreal is operated with the support of Inno-Centre, an independent incubator dedicated to support high technology start-ups. But FUMEC has established partnerships with other types of actors in other regions. For instance, the TechBAs located in Austin and Madrid have formed alliances with top universities in their respective regions in order to support the operation of the program. Both the University of Texas at Austin and Madrid's Universidad Complutense have programs to foster the development of high-tech start-ups in their regions, and TechBA runs under their established support models in those locations.⁴⁹

These formal partnerships have enabled TechBA to quickly get plugged into each foreign region's professional networks and identify other key actors to support its operations. It has also enabled TechBA staff to access local know-how on models and best practices to support technology companies. In the case of TechBA-Silicon Valley, even its short-lived partnership with TEN provided key contacts with local companies, service providers, consultants and mentors who became key assets in supporting TechBA's mission. As the CEO of TechBA-Silicon Valley recalls about their relationship with TEN when he and his staff arrived at Silicon Valley:

“When we got here, they gave us a full package that included space and access to consulting services. Those consulting services included topics such as legal issues, marketing, business

⁴⁷ TechBA official promotional brochure.

⁴⁸ Personal interview with the CEO of TechBA-Silicon Valley, February 2012.

⁴⁹ Personal interview with the CEO of TechBA-Silicon Valley, March 2008.

development, how to get venture investment, all those elements. And we said, OK, help us with that and help us meet local actors. That is important, because that is the main barrier when arriving to a place for the first time. And they did a great job. We said, we want to meet people, and they introduced us to big companies, law firms, etc. And that for me was the most valuable thing. So the value of networking on the one hand and the guidelines they gave us on how to operate on the other. In the end, we ask them, who are the ones who developed this model (TEN's business support model), and that's the people we brought in to work with us. So these people went from being TEN consultants to being TechBA consultants, and we integrated them into the program.”⁵⁰

4.3.2 Consultants, advisors, and mentors.

In order to assist Mexican companies through the process of introducing innovative products or services to global markets the TechBA program has developed an extended network of individuals who can act as consultants, advisors, and mentors. These individuals typically have deep knowledge of a particular industry sector, extensive operational experience in the local context, and a large network of contacts. Some of these individuals are entrepreneurs themselves with successful track records of launching new technology companies. Others come from the corporate world with wide experience in executive positions at leading companies in their sector. In both cases, these individuals bring a deep understanding of the trends and dynamics in their industry sector, from how an industry is organized to the latest technological and commercial trends. Their long operational experience also provides them with a nuanced understanding of local business practices. Finally, they know who the key actors in their industry are and often know them personally. Even when they do not, their wide network of contacts allows them to easily identify relevant actors and get access to them.⁵¹

Most typically TechBA hires these individuals as consultants on a project basis, matching them with one company in their same industry or area of technological expertise. In that way, each company that joins the TechBA program gets access to a certain number of consulting hours funded with resources proceeding from the Mexican Ministry of the Economy. Consultants, in coordination with FUMEC staff, guide the companies through the pre-acceleration and acceleration stages of the program. In this process, consultants work very closely with client companies, advising them on the definition of their overall strategy, doing research and analyzing information, as well as identifying potential customers, partners, service providers, and funding sources.

TechBA hires consultants for a fixed number of hours in order to achieve specific goals within a certain time. During the pre-acceleration stage, consultants work with companies in developing the “TechBA worksheet,” a document detailing a company's value proposition and global expansion strategy. Afterwards, during the acceleration stage of the program, TechBA staff set specific goals

⁵⁰ Personal interview with the CEO of TechBA-Silicon Valley, March 2008.

⁵¹ Personal interviews with consultants of TechBA-Silicon Valley, March 2009, November 2009, June 2010.

for consultants based on the particular needs of each company. Once companies have exhausted all the consulting hours included with their participation in the TechBA program, they can hire consultants independently or continue working without additional support.⁵²

Occasionally consultants develop a good rapport with TechBA companies and their relationship evolves into what the CEO of TechBA-Silicon Valley calls “advisors.” This transformation usually takes place when a consultant sees a lot of potential in its client company and decides to participate actively in achieving its success. Under these situations, these individuals usually negotiate a deal where they work for a reduced rate, or even work for free, in exchange of equity participation in the company. Contrary to their role as consultants, when these individuals work as advisors they share knowledge and resources with TechBA companies in the pursuit of a common goal. Rather than working for a specific number of hours and with specific deliverables, these individuals develop a direct stake in the success of the company. Sometimes these individuals take executive positions within the company but more often serve in the advisory board.⁵³ The CEO of TechBA-Silicon Valley recalls a case when one consultant became so interested in a company that together with some friends decided to invest \$100k to support its global expansion effort. Even when this company did not succeed, and eventually the consultant lost its investment, this case exemplifies the range of roles that these individuals can develop with client companies.

In addition to working with individuals as consultants and advisors, TechBA has also developed relationships with individuals who assist Mexican companies as mentors. For the CEO of TechBA-Silicon Valley, the key difference with consultants and advisors lies in that mentors do not expect anything in return for their support. These are very experienced and successful individuals who are willing to contribute to the success of Mexican companies with their knowledge, expertise, and contacts without any compensation. These individuals combine financial stability with a strong sense of community service and support Mexican companies simply because they sympathize with TechBA’s mission. According to the CEO of TechBA-Silicon Valley these individuals are very hard to find and when available are usually very busy and can offer just a few sessions to work with Mexican entrepreneurs. Still, their support is very valuable and often has a very positive impact in the dynamics of Mexican companies.⁵⁴

4.3.3 Collaborators

In its effort to support the global expansion of Mexican companies, TechBA has also established numerous collaborations with local organizations in foreign regions. TechBA was conceived with the intention of helping Mexican technology companies “penetrate high competitive ecosystems” and provide them with a full integration into the financial, market, business, and technological

⁵² Personal interview with the CEO of TechBA-Silicon Valley, February 2012.

⁵³ Personal interview with the CEO of TechBA-Silicon Valley, November 2010.

⁵⁴ Personal interview with the CEO of TechBA-Silicon Valley, February 2012.

resources of the most innovative regions in the world.⁵⁵ To that end, TechBA has established numerous collaborations with specialized service providers, universities and research centers, venture investment organizations, technology companies, local incubators, and business and professional associations.

As I will discuss below TechBA has established a few formal collaborations at the institutional level, mediated by a contract or a memorandum of understanding, but for the most part these are informal collaborations among individuals working at these organizations and either TechBA staff or Mexican entrepreneurs. The knowledge and contacts that TechBA has developed in global markets has enabled it to perform the role of a facilitator, engaging Mexican entrepreneurs with relevant actors in foreign regions. Each of these collaborations provide Mexican companies with access to key resources such as technology, intellectual property, talent, market intelligence, specialized services, capital, and other key contacts to support their global expansion efforts. Usually, these collaborations are ad-hoc and sustained only for the duration of a specific project. Overtime, TechBA has developed numerous collaborations and in some cases has developed long-term relationships with key actors in foreign regions. In what follows I introduce some of the main collaborations that TechBA-Silicon Valley has promoted and exemplify the ways it has worked together with key actors in the region to support the global expansion of Mexican companies.

4.3.3.1 Specialized service providers

In introducing new products and services to global markets, Mexican companies need to deal with various legal and fiscal issues related to obtaining work visas, establishing a foreign subsidiary, and initiating commercial operations across borders. They also require specialized services to support their commercial activities in various fields, from product development or advanced marketing to lead generation or go-to-market. Having a very small staff in each of its eight foreign representation, TechBA relies heavily in external service providers to support the various technological, legal, and commercial activities of Mexican companies. To that end, TechBA has developed synergistic relationships with several specialized service providers who participate at different stages in the global acceleration process. Service providers play a particularly key role during the training sessions that TechBA impart during the pre-acceleration stage of the program, when companies need to learn a whole range of topics involved in commercializing new products and services in a new market. But they also collaborate actively with companies as they move through the acceleration process and implement their global expansion strategy.⁵⁶

In the case of TechBA-Silicon Valley, its staff has been actively building relationships with service providers since 2005, when it started operations with the support of the local business incubator TEN. According to their agreement, TEN helped TechBA staff identify service providers and facilitated introductions. In the beginning, many service providers would willingly offer a free

⁵⁵ TechBA official website: <http://www.techba.org>, accessed on November 23, 2011

⁵⁶ Personal interview with the CEO of TechBA-Silicon Valley, March 2008.

presentation on a topic of interest to TechBA companies as part of their business development activities. In that way, TechBA staff was able not only to offer client companies training sessions on a wide range of topics, but also they were able to validate the quality of service providers without making a big investment. For service providers, having an audience of thirty or more companies looking to begin operations in the U.S. market represented a great opportunity to get exposure and capture new customers.

Eventually, the relationship between TechBA-Silicon Valley and service providers evolved. On the one hand service providers that had already made free presentations began charging TechBA even for introductory training sessions. On the other, TechBA staff identified quality service providers and began requesting richer and more targeted presentations to address the specific concerns of Mexican companies. Still, TechBA benefited in different ways from collaborating with specialized service providers in the region. Even when TechBA had to hire service providers for training sessions, it was able to develop scale economies to benefit Mexican companies. By offering introductory sessions to a whole group of companies, TechBA helps Mexican entrepreneurs learn the basics on a particular topic and prepares them for their one-on-one meetings with service providers, reducing in that way the number of consulting hours they need to pay on their own. According to the CEO of TechBA-Silicon Valley,

If you as (Mexican) entrepreneur want to come here and learn all that, you would have to hire a consultant in each topic to do so. Instead, we bring a consultant to teach a group of thirty companies enrolled in the program. And then, if you still need consulting, is not the same to hire a consultant for twelve hours than just hiring him for two hours to finalize something. That's how we abate costs. We develop scale economies.⁵⁷

Over time, TechBA-Silicon Valley developed a close relationship with a number of service providers. These collaborations provided TechBA with resources beyond the actual services it received. In particular, TechBA has benefited from the extensive professional networks these service providers have in the region and from their exposure to business opportunities. Service providers constantly interact with a large number of firms and other organizations related to the same industries in which Mexican companies operate. They are aware of general trends in technology markets and they know about specific market needs from interacting with other clients. As such, they are in a great position to connect newcomers like TechBA companies with other actors in the region who might benefit from the products and services they bring in. The CEO of TechBA-Silicon Valley explains,

We have a good relationship with five law firms. And you might ask, what about law firms? Well, lawyers are very important in this ecosystem as they are at the vortex of new firm creation.

⁵⁷ Personal interview with the CEO of TechBA-Silicon Valley, March 2008.

We talk to them and tell them about what our (TechBA) companies are doing and they would say, hey, you should talk to this or that company; they are looking for something of that sort.⁵⁸

In that way, specialized service providers have helped TechBA advance its mission while also benefiting from exposure to a large number of potential customers and to the new ideas and projects that Mexican companies bring with them. And as service providers have continued to work with TechBA companies, they have adapted their practice to better serve the needs of Mexican companies. For instance, some law and accounting firms have established partnerships with their counterparts in Mexico to facilitate the flow of information in cross-border activities. The CEO of TechBA-Silicon Valley recalls,

The first time we tried to do something like establishing a subsidiary, or when we first had to deal with taxes or transfer costs (between Mexico and the U.S.) we talked to lawyers and accountants and we all looked at each other and said, how do you do this? Now turns out that a law firm works with another law firm in Mexico, and accounting firm here also works with a firm in Mexico and they have created a mesh.⁵⁹

But while some service providers have collaborated with TechBA companies over the years, TechBA-Silicon Valley does not work with a fixed set of service providers. TechBA staff is always on the lookout for new service providers and has a policy of not recommending Mexican companies to work with specific people or companies. Instead, they help Mexican companies identify the option that best fits their needs and it is up to the company to make the final decision. According to the CEO of TechBA-Silicon Valley,

Our value lies in our capacity to put things together. But I am not in favor of saying, let's build a list of people to work with. It's not like picking a box office at the theater where each one would give you the same service. You need to look at it case by case. The freedom to choose is much more valuable than having a fixed pool. You need to have a sense of your options, of course. But at any given moment we have the ability to scan the landscape and identify the relevant contacts. This is highly dynamic and multidimensional.⁶⁰

According to the CEO of TechBA-Silicon Valley, collaborations with service providers arise and fall according to new needs of Mexican companies or to adaptations to TechBA's business support model.

4.3.3.2 Universities and research centers

TechBA-Silicon Valley has also worked with local universities and research centers in a variety of ways. In exploring ways to connect Mexican companies with local talent and knowledge resources,

⁵⁸ Personal interview with the CEO of TechBA-Silicon Valley, March 2008.

⁵⁹ Personal interview with the CEO of TechBA-Silicon Valley, February 2012.

⁶⁰ Personal interview with the CEO of TechBA-Silicon Valley, February 2012.

the CEO of TechBA Silicon Valley has promoted both formal partnerships with universities and informal collaborations with individual researchers at various organizations. As an example of the former is an exchange program that TechBA-Silicon Valley developed with the University of San Francisco's (USF) School of Management. This program enabled MBA students to gain practical experience by working as interns at TechBA companies while Mexican entrepreneurs received help in developing their business plans, conducting market research, and with other activities related to their global expansion efforts.⁶¹ This partnership also gave Mexican entrepreneurs access to USF's libraries, events, as well as to some classes in the business management program. However, Mexican companies did not find much value in this kind of support and after two years TechBA ended this collaboration. According to the CEO of TechBA-Silicon Valley, the motivations and work rhythm of students were not compatible with the fast-paced dynamics of Mexican companies and collaborations rarely produced high-impact results.^{62 63}

But while formal partnerships like the one developed between TechBA and USF did not work as expected, the staff at TechBA-Silicon Valley has continued to develop informal collaborations with various individuals working at universities and research centers in the region. When asked about interactions between TechBA companies and universities the CEO of TechBA-Silicon Valley explains,

There have been a few very good interactions with professors at universities. Entrepreneurs would meet with professors, they would discuss their projects, and professors would open their eyes and direct them to other people. It's not that these interactions happen all the time. They are punctuated. I mean, trying to fit the whole university within the business dynamics of companies doesn't work. But these isolated interactions are pure gold.⁶⁴

Since the experience with USF, the staff at TechBA-Silicon Valley learned that rather than trying to make formal collaborations at the institutional level, it is easier to foster informal collaborations between Mexican entrepreneurs and individuals working at those universities. The CEO of TechBA-Silicon Valley elaborates,

If you talk to people at Stanford they will be very clear about it. With Stanford it is much easier to reach an agreement with a professor than to reach an agreement with the whole university.⁶⁵

These informal collaborations have proved very valuable in helping Mexican companies with technical validations of their products, in developing their IP strategy, identifying talent, and even

⁶¹ *Diasporas as Catalytic Agents for Accelerating Mexican Companies into the Global Market*. Unpublished document. Adolfo Nemirovsky, TechBA Silicon Valley Consultant and Jorge Zavala, CEO TechBA Silicon Valley. June 2007.

⁶² Personal interview with the CEO of TechBA-Silicon Valley, August 2008.

⁶³ Personal interview with the CEO of TechBA-Silicon Valley, February 2012.

⁶⁴ Personal interview with the CEO of TechBA-Silicon Valley, February 2012.

⁶⁵ Personal interview with the CEO of TechBA-Silicon Valley, February 2012.

connecting with potential investors.^{66 67} An example of this type of collaborations are the joint activities conducted between a TechBA company developing a 3-D visualization solution in the health sector and two researchers at the University of California, San Francisco (UCSF) and at the University of Minnesota (UMN). These universities are, respectively, leaders in gastroenterology research and in 3D visualization for medical applications. After the TechBA team put these researchers in touch with the Mexican company they became very interested in its solution and decided to collaborate with it doing technical validation of its technology. One of these researchers later became member of the scientific advisory board of the company and also helped it identify talent at the University to become part of its research and development team.⁶⁸

Rather than following formal agreements, these collaborations have been driven by shared interests and the potential for mutual benefit between Mexican entrepreneurs and researchers. For researchers, these collaborations have resulted attractive only when a Mexican company brings in a research problem that helps them advance their own research agenda. This is exemplified in an exchange between a top-level researcher at Stanford and a Mexican entrepreneur that wanted to get him involved in solving a technological problem for his company. The CEO of TechBA-Silicon Valley recalls the response of the Stanford researcher to the Mexican entrepreneur,

The way I work is the following: Come tell me about your problem. If the problem is in my area of interest, I will listen to you. If the problem is in my area of interest, is a really interesting problem, and I have an interest in solving it, you won't have to worry about me. I will get a grant and Ph.D. students to work on it. Just don't come telling me you want to pay me to solve a problem I am not interested in.⁶⁹

While these collaborations have not been frequent, according to the CEO of TechBA-Silicon Valley they have been very valuable, as they have enabled Mexican entrepreneurs to tap into the talent and R&D capabilities of universities and research centers in order to support their technological development and commercialization activities.

4.3.3.3 Venture investment organizations

In helping Mexican companies reach the global markets, TechBA has also developed ties with the international venture investment community. In the case of TechBA-Silicon Valley, TechBA staff has established different kinds of collaborations with angel networks and individual investors to help Mexican companies gain access to capital as well as to expertise to support their global expansion efforts.

⁶⁶ Diasporas as Catalytic Agents for Accelerating Mexican Companies into the Global Market. Unpublished document. Adolfo Nemirovsky, TechBA Silicon Valley Consultant and Jorge Zavala, CEO TechBA Silicon Valley. June 2007.

⁶⁷ Personal interview with the CEO of TechBA-Silicon Valley, March 2008.

⁶⁸ Diasporas as Catalytic Agents for Accelerating Mexican Companies into the Global Market. Unpublished document. Adolfo Nemirovsky, TechBA Silicon Valley Consultant and Jorge Zavala, CEO TechBA Silicon Valley. June 2007.

⁶⁹ Personal interview with the CEO of TechBA-Silicon Valley, February 2012.

TechBA-Silicon Valley first developed a partnership with a venture investment organization in 2005, when it was looking for a local ally to organize a public event aimed at introducing Mexican companies to the investment community in the region. For this event, called the “Mexico Technology Showcase” TechBA established a partnership with Silicom Ventures, one of the largest investor networks in the United States comprised of venture capital and angel investors who are high tech executives in leading companies in the San Francisco Bay Area⁷⁰. Silicom Ventures provided organizational support and contacts to organize this event where TechBA companies pitched their projects to an audience of 300 people including leading investors, Fortune 500 executives, and managers of start-ups and corporations.^{71 72}

Since then, TechBA-Silicon Valley has developed informal collaborations with members of Silicom Ventures and other investment organizations in the region. TechBA gets investors involved at different stages during its business support process. During the induction week of the pre-acceleration stage of the TechBA program, TechBA staff brings investors to give presentations on how to raise venture investment. Investors also participate during the closing week of the pre-acceleration stage and at the end of the acceleration stage of the program when TechBA organizes pitch sessions for Mexican companies to present their projects and receive feedback from the larger investment and business community in Silicon Valley. These pitch sessions have also triggered further collaborations between Mexican entrepreneurs and investors. Occasionally, Mexican entrepreneurs have identified investors with expertise in their same field and have sustained interactions with them in order to obtain feedback and identify key contacts, even when investors do not invest in their companies.

Very few TechBA companies have looked to raise capital with foreign investors and even less have actually obtained any venture funding. According to the CEO of TechBA-Silicon Valley, from the nearly 500 companies that have passed through that office since 2005 less than ten companies have actively looked for investment and probably six have raised money. But these collaborations seem to result in mutual benefits for both TechBA and investors. Venture investors benefit from the exposure to fresh investment opportunities. Having access to a large pool of companies seeking to expand operations to global markets facilitates their process of identifying investment opportunities. According to the CEO of TechBA-Silicon Valley,

An investor is always looking to expand its pipeline (of investment opportunities). They come with us the same way they go to many other places. You need to consider that an angel investor might do only a few investments in his life. And he knows he needs to invest a lot of time to

⁷⁰ <http://www.silicomventures.com/about.php>. Accessed on February 27, 2012

⁷¹ Diasporas as Catalytic Agents for Accelerating Mexican Companies into the Global Market. Unpublished document. Adolfo Nemirovsky, TechBA Silicon Valley Consultant and Jorge Zavala, CEO TechBA Silicon Valley. June 2007.

⁷² Personal interview with the CEO of TechBA-Silicon Valley, February 2012.

find the right ones. One of these investors probably looks through five hundred opportunities to choose one or two.⁷³

Collaborating with TechBA-Silicon Valley has exposed investors to new investment opportunities beyond the companies participating in the TechBA program. In its attempt to promote an entrepreneurial culture in Mexico and expand its own pipeline of client companies, TechBA has brought Silicon Valley investors to Mexico in order to give presentations on venture investment and to participate in other pitch sessions.

For TechBA, interactions with the investment community provide valuable outcomes despite the low number of Mexican companies that have actually looked to raise capital from foreign investors. Not only do Mexican entrepreneurs gain access to expertise and contacts that are useful in defining and implementing their global expansion strategy, but also these interactions provide hands-on experience that is invaluable in expanding the views and skills of Mexican entrepreneurs.

We need entrepreneurs that come here to expand their vision, to be more ambitious, and to increase their execution capabilities. And there is no way of learning that than interacting with people that know how to build technology companies, as is the case of investors.⁷⁴

The collaborations that TechBA-Silicon Valley has developed with investors are usually informal and are not mediated by contracts or official agreements. Only when TechBA organized the Mexico Technology Showcase in 2005 it signed a contract with Silicom Ventures to clarify the roles of each party and specify the resources that each would contribute. And TechBA-Silicon Valley is constantly developing new collaborations according to the specific needs of Mexican companies.

You are not going to look for an investor in the biotech field if you have a software solution for consumers. If you are looking for “smart money” you need to find what’s the “smart” side of these guys, which kind of businesses they have invested in, what is their profile. Based on that you define a strategy to reach them.⁷⁵

As discussed above by the CEO of TechBA-Silicon Valley, the collaborations that TechBA develops with investors are ad-hoc, devised according to the particular circumstances and goals of each Mexican company seeking capital.

4.3.3.4 Technology companies in global markets

Technology companies in global markets are another key actor affecting the activities of TechBA. Technology companies play various roles in supporting the global expansion of Mexican companies. Naturally, they are potential customers and Mexican companies work closely with them in

⁷³ Personal interview with the CEO of TechBA-Silicon Valley, February 2012.

⁷⁴ Personal interview with the CEO of TechBA-Silicon Valley, February 2012.

⁷⁵ Personal interview with the CEO of TechBA-Silicon Valley, February 2012.

identifying their particular needs and validating their value proposition. In that process, Mexican companies often develop a closer relationship with a company who plays the role of a “friendly customer.” In those situations a Mexican company would offer its technological solution for free or at a reduced cost in exchange for feedback from a company. Finally, technology companies can play the role of technological or commercial partners in situations where their resources and capabilities complement those of Mexican companies. In either situation, Mexican companies collaborate closely with technology companies in the process of introducing new products and services to global markets.

To facilitate the activities of Mexican companies, TechBA staff and consultants continuously mobilize their professional networks in identifying and approaching relevant companies to establish collaborations. TechBA has established a few formal collaborations with large technology companies but according to the CEO of TechBA-Silicon Valley these are not the most efficient mechanism to support Mexican companies.

For instance, in Mexico we have now a partnership with Microsoft. But if I don’t have companies doing anything with Microsoft, what’s the point of having a partnership with them? You have to look at what our (TechBA) companies are doing.

Establishing a formal relationship is something that can consume a lot of time and doesn’t guarantee good results. If I try to develop a formal partnership with a big company in the field of mobile technologies, let’s say, I will go back and forth for two months signing a contract and then who knows if anything is going to happen. If I need to find somebody in the field of mobile technologies it is more likely that I will find the lead to the right person by assisting to five networking events in the Valley.⁷⁶

Accordingly, most collaborations TechBA has established with technology companies in global markets are informal and ad-hoc. When asked about the collaborations that TechBA has developed with technology companies, the CEO of TechBA-Silicon Valley comments,

We have done a lot with companies. But again, if you ask me, do we work with a specific set of companies? The answer is no. It depends on each case. ... We facilitate the initial engagement. The (Mexican) entrepreneurs would tell us, I want to get in touch with such company. Then we do a search with our contacts and tell them, we found all these different channels to reach that company. We go to those channels, reach the company, and establish a connection. But it is not a connection between us (TechBA) and the company, but a business relationship between a Mexican company and them.⁷⁷

⁷⁶ Personal interview with the CEO of TechBA-Silicon Valley, February 2012.

⁷⁷ Personal interview with the CEO of TechBA-Silicon Valley, February 2012.

In developing collaborations with technology companies TechBA-Silicon Valley has acted as a facilitator and resulting interactions are usually informal and guided by the interests of the companies involved.

4.3.3.5 Local incubators and accelerators

TechBA has also developed collaborations with local incubators and accelerators. One case is the relationship that TechBA-Silicon Valley developed with U.S. Market Access Center (US MAC), a specialized business incubator and accelerator located in San Jose, California. US MAC is a joint project between the City of San Jose's Redevelopment Agency and the San Jose State University Research Foundation and focuses on providing soft-landing services to emerging foreign technology companies who are interested in entering the United States market⁷⁸.

With a similar mission to that of TechBA, US MAC had an established set of resources and capabilities to support the global expansion of foreign companies when TechBA initiated operations in 2005. Back then, TechBA was working with its local partner TEN to develop its own network of consultants and service providers and TEN put them in touch with some of US MAC's consultants. Soon, the CEO of TechBA-Silicon Valley signed a contract with US MAC for a package of consulting services. Rather than identifying and hiring consultants one by one, this agreement enabled TechBA-Silicon Valley to access US MAC's network of consultants and obtain support for all of its companies at once. For one year, US MAC's consultants would help Mexican companies with their market research, doing business plans, and directly supporting their sales activities.

After that year, the relationship between TechBA-Silicon Valley and US MAC began to evolve as a result of the expertise that TechBA staff developed in supporting Mexican companies.

As we moved forward, one of the things we learned to do very well is market research and in fact we started to do it in-house. But we also had deeper insights. When we got here we thought that market research analysis and a business plan were absolutely indispensable and the first thing you needed to put together. And in the beginning we did that with a lot of companies. Today, the "lean start-up" methodology tells you exactly the opposite. First, find out who wants to buy what you have. Then imagine a business model around your solution, test it, and eventually, you might need a formal market research analysis and a business plan. So we stopped using them (US MAC) as our support base when we had that learning. There were companies that had beautiful business plans and when it was time to implement they didn't work. That is one of the greatest insights we've had.⁷⁹

After its first year of operations, TechBA continued hiring US MAC consultants for two more years in order to support some Mexican companies. But these interactions were sporadic and informal,

⁷⁸ <http://www.usmarketaccess.com/about-us/overview> Accessed on February 28, 2012

⁷⁹ Personal interview with the CEO of TechBA-Silicon Valley, February 2012.

without a contract between the two organizations. Since then, TechBA taps into the resources of US MAC on-demand, only when needed by a Mexican company. The CEO of TechBA-Silicon Valley develops,

The relationship with US MAC evolved into an alliance that we use on that second stage. We consider them only when a company is scaling up and needs a thorough market analysis to understand its distribution channels, to define a growth strategy, and all those things.⁸⁰

Today, the CEO of TechBA Silicon Valley also shares information with US MAC, invites them to TechBA events, and invites Mexican companies to networking events organized by US MAC.

4.3.3.6 Business and professional organizations

In helping Mexican companies establish connections with the wider business community in foreign markets, TechBA has developed several collaborations with business and professional organizations. In Silicon Valley, the TechBA staff has developed collaborations with organizations like SV Forum, The Indus Entrepreneurs (TiE), Hispanic Net, the MIT-Stanford Venture Lab (VLAB), among many others.

These organizations provide networking and professional development opportunities through their conferences, workshops, and networking events that attract the whole entrepreneurial community in Silicon Valley. The staff and consultants at TechBA-Silicon Valley are always on the look for interesting events and constantly encourage Mexican entrepreneurs to participate in them as a way to expose them to the Silicon Valley culture, to learn about the latest market and technological trends and to expand their professional networks. For the most part, TechBA-Silicon Valley maintains informal collaborations with the leadership at these organizations, exchanging and distributing information about events.

But TechBA-Silicon Valley has also developed closer collaborations with some local organizations. With TiE it has developed a particularly close relationship. TiE is one of the largest Diaspora organizations in Silicon Valley and worldwide. Its annual conference, TiECon, is considered the largest entrepreneurial conference in the world. This event is attended by more than 5,000 participants including entrepreneurs, venture capitalists, industry executives and thought leaders. Since 2010, TechBA-Silicon Valley has participated as sponsor of TiECon. This collaboration has enabled Mexican entrepreneurs to have a more active role during the conference with a booth at the Conference Expo where they are able to showcase their solutions and interact with potential customers, partners and investors. TechBA has also organized panels where TechBA-Silicon Valley's CEO and entrepreneurs present next to leaders and entrepreneurs from other countries on topics related to global entrepreneurship. In this way, TechBA leverages the TiE network to promote its

⁸⁰ Personal interview with the CEO of TechBA-Silicon Valley, February 2012.

portfolio companies, extend its professional networks, and gain exposure in the Silicon Valley business community.

4.4 TechBA, mobilizing knowledge, technology, talent and capital across borders

In the section above I showed how TechBA has developed formal partnerships and informal collaborations with a variety of actors in some of the most dynamic regions of innovation around the world. By tapping on the professional networks of its staff and consultants, as well as through its partners and collaborators, TechBA has enabled Mexican companies to tap into a variety of technological, commercial, and financial resources to support their global expansion efforts. But how does TechBA mobilize resources in Mexico to create and sustain a flow of knowledge, technology, talent and capital across borders?

With the institutional support of the Mexican Ministry of the Economy, FUMEC works in Mexico with local governments, business incubators and accelerators, universities, consultants, and business associations in the process of identifying, selecting, and preparing companies to participate in the acceleration process. FUMEC has staff in Mexico City dedicated to develop ties with state-level actors throughout Mexico. In addition, FUMEC has posted some staff members in the main states in Mexico to represent the TechBA program and develop synergies with local actors. “There are people assigned to linkage activities, as we call them, on a continuous basis,” asserts the CEO of TechBA-Silicon Valley.⁸¹

But as TechBA has expanded its operations to several regions around the world, so did FUMEC have to deepen its relationships with various organizations in Mexico in order to secure a pipeline of companies moving towards their global expansion. Accordingly, FUMEC has been working to develop a wide network of consultants in Mexico to support TechBA operations throughout Mexico. The CEO of TechBA-Silicon Valley explains during an interview in 2008:

We trained instructors and consultants. We ran a pilot program to train thirty consultants in Mexico to help us with that task. Because in scaling-up we are going to need very strong capabilities in Mexico as well as in the U.S. But all of them need to operate with the same framework. A consultant in Mexico that only knows how to advise a company to succeed in its own neighborhood, that consultant is not going to be able to advise a company to go global. So we need to change the mentality of the entrepreneurs in Mexico but also the ecosystem around the entrepreneur. And that’s where we have a lot of work to do.⁸²

Through its staff and its network of consultants located around Mexico, FUMEC works with state governments and other local organizations in the process of identifying, recruiting, and preparing

⁸¹ Personal interview with the CEO of TechBA-Silicon Valley, March 2008.

⁸² Personal interview with the CEO of TechBA-Silicon Valley, March 2008.

companies to participate in the TechBA program.⁸³ One key asset in support of FUMEC activities has been the wide network of local incubators and accelerators that the Mexican Ministry of the Economy has helped establish to support the formation and expansion of new businesses. These local incubators and accelerators are often operated by a university but in some cases are run by an independent, for-profit organization.⁸⁴ FUMEC staff and consultants in Mexico work closely with local incubators and accelerators in identifying companies with the greatest potential to become a global player. FUMEC also works closely with state-level economic development agencies and local business associations in identifying and recruiting companies to participate in the TechBA program.

Since its conception, the TechBA program has had the goal of “linking ecosystems” by creating connections between its foreign representations and “regions of innovation” in Mexico.⁸⁵ FUMEC’s biannual report 2008-2009 states:

Our TechBA program has benefited from the close relationship that FUMEC maintains with the State Ministries of Economic Development, the State Science and Technology Councils and other regional organizations, which allowed focusing high potential business detection efforts and to generate supplementary services.⁸⁶

The ties that FUMEC has developed in Mexico with local governments, universities and research centers, incubators and accelerators, as well as with the business community has enabled the TechBA program to initiate and sustain a flow of knowledge, technology, talent and capital across borders. Together with the partnerships and collaborations that the TechBA program has developed in foreign representations, the relationships that FUMEC has promoted in Mexico allow the identification of innovative Mexican companies and provide a channel to connect them with a variety of resources in foreign regions to facilitate their expansion to global markets.

But FUMEC activities in Mexico go beyond recruiting and preparing companies that are ready to participate in global markets. Instead, it works actively with local organizations in designing economic development programs that in the medium term would result in the creation of new technology, talent, and companies to feed the global expansion pipeline. In that process, TechBA sustains interactions across borders, channeling the market knowledge that its staff in foreign locations has developed in order to support economic development initiatives in Mexico.

One example of this kind of cross-national collaborations is the work that the CEO of TechBA-Silicon Valley has been doing to promote the formation of call centers in Mexico. As a result of his exposure to the U.S. market, the needs of American companies, as well as to current trends in communication technologies the CEO of TechBA-Silicon Valley realized that Mexico was not fully

⁸³ Personal interview with the CEO of TechBA-Silicon Valley, March 2008.

⁸⁴ Official slide presentation. TechBA program. Presented by Jorge Zavala, CEO of TechBA-Silicon Valley.

⁸⁵ TechBA official promotional brochure.

⁸⁶ Mexico-US Foundation for Science (FUMEC). Biennial Activities Report 2008-2009, p. 18.

taking advantage of the opportunities in the call center business. That encouraged him to work directly with organizations in Mexico to establish initiatives aimed at supporting the formation and development of companies in the call center business. The CEO of TechBA Silicon Valley comments during an interview,

Call centers, that is an area of opportunity that I have been promoting a lot. There are great opportunities for Mexico in that space, in all its variations. There is a whole spectrum, from labor-intensive to technology-intensive call centers. So, for instance, the State of Mexico is now discussing how to create a cluster of call centers. Mexico City as well. We participate in the discussion, work together a strategy, we help them build a plan. Those programs that are operated by local governments and universities will benefit local companies. That results in a pool of companies that are susceptible to come here (the TechBA program). It is about creating a value chain.⁸⁷

The TechBA program channels knowledge about business opportunities in global markets as well as expertise on how to promote global technology companies, creating synergies with local organizations in Mexico. When discussing the interactions between the TechBA program and local initiatives in Mexico, the CEO of TechBA-Silicon Valley states,

A clear example is Guadalajara. Guadalajara has a Software Development Center, it is trying to promote a cluster, and they are doing an excellent job. So what we do at TechBA is to link to the work that group is doing and say, we see these areas of opportunity, which is the business intelligence that we have developed. They can then decide what to do with that opportunity.⁸⁸

The CEO of TechBA-Silicon Valley develops, “what we are doing is to work closely with those groups. With Universities, what do they need? With local governments, where should they be pushing? We focus on some concrete actions with governments, academia, as well as with the local business community, who in the end have the drive to execute things.”⁸⁹

Other examples where FUMEC has collaborated with local actors in Mexico to support economic development programs include:⁹⁰

- A program to assist the Interactive Media Cluster in the State of Nuevo Leon, together with the National Chamber for the Electronics and Information Technologies Industry (CANIETI) and the Ministry of Economic Development.
- The creation of the Prosoftware Cluster in Mexico’s Federal District, the CLAUT automotive cluster in the State of Nuevo Leon, the CAREM automotive cluster in State of Mexico, and the creation of an information technologies cluster in Zacatecas.

⁸⁷ Personal interview with the CEO of TechBA-Silicon Valley, March 2008.

⁸⁸ Personal interview with the CEO of TechBA-Silicon Valley, March 2008.

⁸⁹ Personal interview with the CEO of TechBA-Silicon Valley, March 2008.

⁹⁰ Mexico-US Foundation for Science (FUMEC). Biennial Activities Report 2008-2009, p. 21.

- In the State of Michoacán, the creation of a program to promote the migration of businesses towards software as a service together with the State Government.

The partnerships and collaborations that the TechBA program has established not only have created a flow of knowledge, talent, and technology back and forth between Mexico and TechBA representations abroad. Occasionally TechBA mobilizes resources across foreign regions, even beyond the locations where it has representations abroad. The partners, consultants, and collaborators that are closely involved in the operation of the TechBA program have professional networks that span multiple regions and occasionally mobilize their contacts in other foreign locations in support of Mexican companies.

That is the case of one TechBA consultant in Silicon Valley who has strong connections with the entrepreneurial community of San Diego, California. Prior to his involvement in TechBA, this consultant participated as entrepreneur in residence in CONNECT San Diego, a regional program that spun out of UC San Diego. This program leverages the research infrastructure in the region to support the formation of innovative and life sciences companies. Born and raised in Mexico before developing his professional career as researcher and entrepreneur in the U.S., this consultant had previously been working with CONNECT to create synergies with Mexico and convinced them to accept Mexican companies to its support programs.

At that point he was advising a TechBA company in the food industry whose products were based on a new method to grow seaweed. Aware of the strong research infrastructure on biotechnology and marine technology of the San Diego region, this consultant mobilized his contacts at CONNECT to get this company accepted to its Springboard program. This world renowned program is focused on getting companies “investment-ready” by providing hands-on mentoring by industry veterans, technologists, investors, and professional service providers. In that way the entrepreneur leading the global expansion effort at this Mexican company gained access to experts in technological development and commercialization with a strong focus on his company’s industry sector.⁹¹

During his participation in the Springboard program this Mexican entrepreneur was able to develop a business plan and an investment strategy with the support of three entrepreneurs in residence with deep knowledge of the biotechnology and marine-based food sectors. He was also able to gain access to specialized services providers like law firms that provided advice on a strategy to raise investment and to structure the capital in the company. After his graduation from the Springboard program, this entrepreneur was also able to pitch his company to a group of investors in the San Diego region and through his mentors was put in touch with an investment fund focused in the biotech sector. By participating in the TechBA program, this Mexican company was able not only to get access to resources in the Silicon Valley region, but also was able to get involved with a

⁹¹ Personal interview with Mexican entrepreneur. February 2010.

community of specialists in technology development and commercialization in the San Diego region.

Mobilizing the professional networks of its partners, consultants, and immediate collaborators, TechBA has been able to articulate a universe of individuals and organizations in both Mexico and foreign markets that transcends the regions where it has a physical presence. In that way, the TechBA program sustains a flow of knowledge, talent, and capital not only between Mexico and the foreign regions where it has a representation, but also across regions in foreign markets.

4.5 Discussion: TechBA, a cross-national community of practice?

In the previous sections I showed how the TechBA program of the Mexican Government has established partnerships and collaborations both in Mexico and abroad in its efforts to support the global expansion of Mexican companies. In this way, TechBA has enabled interactions among Mexican entrepreneurs and actors located in distant regions working on the various technological, commercial, financial, and legal aspects involved in the process of introducing innovative products and services to global markets. But does this constellation of individuals and organizations constitute a “community of practice” as defined in the academic literature? And how does the TechBA program inform our understanding of communities of practice?

In this section I will link my observations of the TechBA program with the literature on communities of practice in order to answer the following analytical questions:

- Does the constellation of actors surrounding the TechBA program constitute a community of practice?
- If so, how is the TechBA community of practice defined? What are its limits? Who are its members?
- Does TechBA operate as a “distributed” community of practice?

In the conclusion I will discuss the advantages and limitations of using the communities of practice framework to analyze the dynamics of the TechBA program.

4.5.1 Does the constellation of actors surrounding the TechBA program constitute a community of practice?

Lave and Wenger (1991) introduced the concept of “communities of practice” in their efforts to develop a theory of learning as social participation. They introduced this concept to focus our attention on the learning processes that take place as people with common interests and with a shared experience and expertise engage with each other in the pursuit of a joint enterprise. But how are such communities of practice defined?

According to Wenger (1998), it is the practice itself what binds individuals into a community and what defines its limits. He distinguishes three dimensions through which practice is the source of coherence of a community:

1. Mutual engagement
2. A joint enterprise
3. A shared repertoire

Next, I briefly examine these three dimensions as discussed by Wenger (1998, Chapter 2). Practice binds individuals into a community first through the interactions among its members. Individuals form a community of practice because they engage in joint activities and discussions, help each other, and share information. In this sense, a community of practice is not just an aggregate of people defined by some characteristic. The term is not synonym for group, team, or network. Membership is not a matter of social category, declaring allegiance, belonging to an organization, having a title, or having personal relations with some people. A community of practice is not defined merely by who knows whom or who talks with who in a network of interpersonal relations through which information flows⁹². Neither is geographical proximity sufficient to develop a practice.

The second characteristic of practice as a source of community coherence is the negotiation of a joint enterprise. In this sense, a community of practice is not merely a community of interest – people who share a particular interest, like movies. Even if members of a community of practice do not necessarily work together on a daily basis, they interact with one another in the pursuit of a common project. And as individuals engage with each other in the pursuit of a joint enterprise they develop a shared repertoire of resources, the third characteristic of practice as a source of community coherence. Over time, the joint pursuit of an enterprise creates resources for negotiating meaning. The repertoire of a community of practice includes documents, routines, words, tools, ways of doing things, stories, gestures, symbols, genres, actions or concepts that the community has produced or adapted in the course of its existence, and which have become part of its practice.

In sum, it is the nature and quality of social relations and interaction among individuals and their links to practice what defines a community of practice. For Wenger, then, the difference between a community of practice and any social network is that social relations are formed, negotiated and sustained around the activity that has brought people together (Fuller 2007, 21). For the purpose of this dissertation I adopt the following definition based on the three definitional criteria proposed by Wenger:

A community of practice is a group of individuals who engage with each other in order to develop a joint enterprise and who develop a repertoire of resources to sustain their practice.

⁹² In this sense, it is related to the idea of a node of “strong ties” in network theory, but with a focus on the practice that is created in the process rather than on the network of relations and the flow of information (Wellman and Berkowitz 1988).

Based on this definition, can we claim that the TechBA program articulates a community of practice?

As discussed above, TechBA brings together a universe of individuals, both in Mexico and abroad, that support the global expansion of Mexican companies. These actors engage with each other in pursuit of a joint enterprise and have developed a repertoire of resources to sustain their practice. In Mexico, TechBA staff continually interacts with individuals working in universities and research centers, business incubators, business associations, local governments, or working as independent consultants. They all play a role in the process of identifying companies susceptible of participating in the TechBA program or in supporting them during their global expansion venture.

In foreign locations, TechBA staff has developed relations with different actors that play a role in helping Mexican companies introduce their innovative products and services to global markets: talented and experienced individuals who advise companies during their participation in the program; researchers at universities who help companies with their technical validations and in identifying talent; specialized service providers that assist companies in the various legal, fiscal, financial, and commercial issues they face in their global expansion efforts; executives and professionals working for other companies that become potential partners or customers; investors who provide guidance and capital.

All these individuals, both in Mexico and abroad, work for organizations pursuing their own mission and with their own professional practice. Still, my observations reveal that they all contribute, in one way or another, to advance TechBA's mission of helping Mexican innovative companies reach the global markets. This is not to say that all actors work with the explicit goal of helping Mexican companies reach the global markets, or that they would identify themselves as members of a community working to achieve that goal. However, these actors engage with each other, contribute to a joint enterprise, and develop a repertoire of resources, in the form of documents, workshops, events, plans, routines, concepts and stories that support their practice.

As shown above, in some cases these interactions result from formal partnerships mediated by a contract, like in the case of the exchange program between TechBA-Silicon Valley and University of San Francisco. But for the most part the relationships between TechBA staff and Mexican companies with the universe of actors surrounding the TechBA program are informal and respond to their changing needs and interests. Like in the case of researchers working with TechBA companies to validate their technologies or when investors attend the pitch sessions organized by TechBA-Silicon Valley, these interactions are driven by common interests and shared benefits.

4.5.2 How is the TechBA community of practice defined? What are its limits? Who are its members?

But what are the limits of the TechBA community of practice? As Wenger (1998; 2000) discusses, the very notion of community of practice implies the existence of boundary. But community of practice scholars also recognize that the boundaries of communities of practice are usually rather fluid, unlike the boundaries of organizational units, which are well defined because affiliation is officially sanctioned (Wenger 1998; 2000; Brown and Duguid 1991). They arise from a joint enterprise in as much as it is understood and continually renegotiated by its members.

In the case of TechBA we can see that membership in the community is not officially sanctioned by a central organizing body at the top. While FUMEC has laid down the foundations of this community of practice through a staff distributed in various locations across the world, a business support process and through formal partnerships with various organizations, members of this community are linked by their joint activities as they work to support the global expansion of Mexican companies. As discussed by community of practice scholars, membership is defined by the practice itself, as members engage in joint activities and discussions, help each other, or share information.

In this sense, the TechBA community of practice is an organic community, it evolves according to the needs of the program and as Mexican companies face new challenges and require specific resources. The limits of the TechBA community of practice expands as a consultant gets hired to advise a company or as TechBA staff develops new collaborations with other external actors to support its efforts: a university researcher to provide access to intellectual property or talent; a legal firm to help Mexican companies constitute their subsidiaries abroad; an investor to advise companies in their financial strategies, etc. The limits of the TechBA community of practice are in continuous flux and are defined by the practice of its members.

But TechBA is not a spontaneous community in the sense of developing without apparent external influence or force. The TechBA community of practice is structured by the organizational and financial resources provided the Mexican Government through FUMEC and by formal agreements with foreign organizations that provide an institutional platform to sustain interactions among its members. The TechBA community of practice clearly transcends organizational boundaries and its size and shape is not determined centrally by an organizing body. But even when the Mexican Government or FUMEC do not have full control over its development, the emergence of the TechBA community of practice is clearly the result of their direct intervention. TechBA staff and the business support activities implemented with the support of the Mexican Government and FUMEC provided the stimulus to sustain interactions among various actors whose work contribute, in one way or another, to the global expansion of Mexican companies.

In that respect, the TechBA community of practice challenges some of the assumptions that scholars have developed about the character and dynamics of such communities. According to Brown and Duguid (1991, 49) communities of practice are *emergent*: “That is to say their shape and membership emerges in the process of activity, as opposed to being created to carry out a task”. From Brown and Duguid’s viewpoint, “the central questions more involve the *detection* and *support* of emergent or existing communities” (emphasis in original). Clearly, the TechBA community of practice is not the result of an explicit effort to create such a community. But the TechBA case shows that communities of practice can be formed out of direct intervention to carry out a new task. In this case, the TechBA community of practice emerged out of an explicit effort to support the global expansion of Mexican companies.

4.5.3 Does TechBA operate as a “distributed” community of practice?

As presented in the analysis of the TechBA program above, this initiative of the Mexican Government operates in several regions around the world and connects Mexican companies with actors and resources located in distant locations. “Distributed” communities of practice, or communities operating across long distances, have attracted a lot of attention in recent years (see for instance, P. Hildreth, Kimble, and Wright 2000). The growing internationalization of business means that many organizations now work in a geographically and temporally distributed international environment. This raises the question: can communities of practice continue to operate in such an environment?

Scholars have claimed that co-location is not a pre-condition for the functioning of a community of practice (Wenger, McDermott, and Snyder 2002). But sharing a practice requires regular interaction and as defined by Wenger (1998), mutual engagement is one key dimension through which practice is the source of coherence of a community. In that sense, does the TechBA community of practice operates as a single, distributed community? Can we safely claim that members located in distant locations engage with each other on a regular basis?

My observations in the field reveal a complex picture. On the one hand TechBA staff and the mentors closely involved in the acceleration of Mexican companies do in fact interact with actors in distant locations. The CEO of TechBA-Silicon Valley, for instance, interacts with organizations both in Mexico and the United States. In Mexico, he is actively involved in promoting the TechBA program and in the process of identifying and selecting client companies. For that purpose, he interacts and brings together individuals working in local governments, universities, business incubators, business associations as well as in Mexican companies. And as discussed above, he also participates in the design of other business support programs for which he interacts with local governments and other entities in Mexico. In the United States he develops partnerships and collaborations with universities and research centers, technology companies, diaspora organizations, investment groups, law firms, and other specialized service providers. Similarly, consultants working at TechBA’s foreign representations often interact remotely with Mexican companies while

interacting with various actors in foreign markets. Finally, the companies participating in the TechBA program themselves sustain interactions with actors located in both Mexico and distant regions. These three actors, TechBA staff members, TechBA consultants and Mexican companies do interact frequently with actors in distant locations, articulating a distributed community of practice.

However, not all actors of the TechBA community of practice sustain regular interactions with each other. Based on my observations, individuals working in a university in the United States, for instance, would not interact with actors in Mexico other than the Mexican company with which it develops a specific collaboration. And while there have been some interactions between members of the community in different foreign regions, as exemplified in the case of the TechBA consultant in Silicon Valley that connected a Mexican company with a support program in San Diego, these have been exceptional. Even interactions across the different TechBA representations abroad are not frequent. This was recognized by one member of FUMEC's Board of Governors as he talked about the importance of developing a "network architecture" to increase the level of interactions across different TechBA locations.⁹³

This is beginning to change. As exemplified in the case of the law and accounting firms in Silicon Valley that have developed collaborations with their Mexican counterparts, there are some signs that other members of the TechBA community of practice are interacting and developing a joint practice with individuals and organizations in distant locations. But for the most part TechBA operates as a constellation of communities linked by the staff, consultants and by the companies themselves participating in the program. While distributed across long distances, TechBA does not operate as a unified community of practice. Rather, the staff and consultants mediate among members of different communities of practice, what Wenger (2000) calls "brokers," or individuals working to introduce elements of one practice into another. Wenger recognize that linking different communities can require so much sustained work that it might become a practice on its own, what he calls "boundary practices." In this view, the TechBA program can be understood as a sustained effort of the Mexican government to link the entrepreneurial communities in Mexico with those communities located in distant regions that have access to the technological, commercial, and financial resources to sustain global innovation processes.

4.6 Conclusion

As mentioned earlier, TechBA's approach to supporting the global expansion of Mexican companies has been to facilitate their direct interaction with "international ecosystems" as the mechanism to "generate sales, strategic partnerships and attract investment."⁹⁴ To that end, TechBA has developed "strategic alliances" with a number of organizations in the eight foreign regions where it

⁹³ Personal interview with a member of FUMEC's Board of Governors. January 2011.

⁹⁴ Mexico-US Foundation for Science (FUMEC). Biennial Activities Report 2008-2009, p. 16.

has representations abroad. Taking the Silicon Valley office as an example, the official website of the TechBA program mentions the following regarding its strategic alliances:

To date, TechBA-Silicon Valley maintains strategic alliances with organizations like Silicom Ventures, Software Development Forum, US Market Access Center (US MAC), TIE and SVASE, Hispanic Business Chamber, the Universities of Santa Clara, San Francisco, Stanford and San Jose State, which gives it access to a wide network of consultants and contacts and enable it to penetrate market and investment networks.⁹⁵

But my analysis above reveals that the relationships that TechBA maintains with foreign actors are more complex than what TechBA's official website suggests. First, while TechBA-Silicon Valley initially developed a series of alliances with organizations like Silicom Ventures, the University of San Francisco and US MAC, these have evolved substantially and to date they are much more tenuous and sporadic than the website suggests. Second, TechBA-Silicon Valley has developed a wide set of relationships with actors that are not captured by the characterization of the official website. TechBA-Silicon Valley has developed collaborations with numerous specialized service providers, from law firms specializing in migratory issues or intellectual property, to firms specializing in innovation games, lead generation, go-to-market strategies, advanced on-line marketing, to name a few. TechBA-Silicon Valley has also collaborated with individuals in other universities, professional organizations and venture investment organizations than the ones mentioned in the official website. And third, the relationships that TechBA-Silicon Valley maintains with all the actors surrounding its operations are for the most part informal and established between individuals, and not between organizations. Most relationships are not mediated by an official agreement at the institutional level. As the CEO of TechBA-Silicon Valley recognized in a recent interview, "I would say that the weight of formal relationships is minimum, it's not even 10% of what we do."⁹⁶

All of the above reveals the inadequacy of using the organization as the unit of analysis to understand the workings of the TechBA program. Conceptualizing the TechBA program as a series of strategic alliances between various organizations in different regions around the world conceals the complexity and diversity of the interactions among all actors surrounding the TechBA program.

Using the communities of practice framework to analyze the TechBA program we get a more complex and dynamic picture. By focusing our attention on the actual practices that link actors together we can see how the collaborations that TechBA-Silicon Valley has developed rise and fall according to the particular needs of Mexican companies and to adaptations to TechBA's business support model. What binds together the different actors surrounding the TechBA program are not formal alliances, but shared interests and a practice aimed at developing a joint enterprise. This is best exemplified by the partnership that TechBA-Silicon Valley first established with University of

⁹⁵ <http://www.techba.org/esp/sedes/silicon-valley> Accessed on March 1, 2012

⁹⁶ Personal interview with the CEO of TechBA-Silicon Valley, February 2012.

San Francisco (USF) to get MBA students to work as interns for Mexican companies. Despite having established an institutional framework to support collaborations between Mexican companies and faculty and students at USF, the different outlooks and work dynamics of these actors caused the relationship to dwindle. In turn, Mexican companies have been able to establish various collaborations with individual researchers at top universities when their interests converge in the solution of a specific problem. These collaborations are often informal, not mediated by a contract or official agreement at the level of the organization.

The communities of practice framework allow us to understand the TechBA program as a dynamic and organic entity that involves individuals located at various organizations, in various locations, and whose size and form is dictated only by the practice of its members itself. Rather than a government program with a fixed set of formal alliances with other organizations, the communities of practice framework reveals TechBA as a community that is always in flux. As the CEO of TechBA-Silicon Valley put it, “our value lies in our capacity to put things together.”⁹⁷ Certainly TechBA staff has played an important role in “putting things together.” But while structured around a government program, this community transcends the boundaries of any one organization.

When applied to the analysis of global innovation processes, the communities of practice framework also allow us to break away from spatial units of analysis, so prevalent in innovation studies. Since the concept of innovation systems was introduced to understand the interactive and collective character of innovation processes, the literature has been caught in spatial units of analysis at either the national (B.-Å. Lundvall 1992; Nelson 1993) or regional levels (Braczyk, Cooke, and Heidenreich 1998; Philip Cooke, Heidenreich, and Braczyk 2004). Scholars have already pointed at the limitations of work which focuses on particular scales as the locus for innovation (see for instance, Bunnell and Coe 2001). But while scholars have argued for the need to look at relationships operating between and across different scales, up to date there is no coherent framework to help us understand relationships at different scales and locations while still maintaining a focus on innovation as a collective and interactive process. By conceptualizing the TechBA program and all the actors surrounding it as a community of practice we can see that global innovation processes involve interactions with actors both in proximate and distant locations. At the same time, the case of the TechBA community of practice suggests that “brokers” or intermediate organizations can play an important role in fostering interactions at different scales, expanding the reach of innovation systems to include actors at all the regional, national, and global levels.

Conceptualizing TechBA, as well as other GIBs, as communities of practice can have other practical implications. Up to now, GIBs have gone under the radar of both scholars and policy makers and are commonly mistaken as business incubators. From the vantage point of actors located at the regions where GIBs have established a presence outside their home countries, these initiatives certainly resemble an incubator. Both provide facilities and business support services to innovative

⁹⁷ Personal interview with the CEO of TechBA-Silicon Valley, February 2012.

companies. But when conceptualized as communities of practice a key difference emerge between the two. Unlike a business incubator that operates primarily with actors and resources in a single location, GIBs mobilize knowledge, technology, talent and capital from distant locations. In this way, GIBs stand out as a new kind of policy initiative that by sustaining communities of practice across borders enable global innovation processes, rather than the formation of new innovative businesses. By characterizing GIBs as communities of practice and revealing the complexity behind these initiatives, my research aims at stimulating work from both scholars and policy-makers to better understand and support GIBs.

The communities of practice framework is not free of limitations. As discussed by Hughes, Jewson and Unwin (2007) and Fuller (2007), the community of practice framework remains underdeveloped in crucial respects. Indeed, the concept has been applied so widely that, on occasion, it has seemed in danger of losing specificity and analytical edge, sliding into a catch-all descriptive term. Since the concept was first introduced by Lave and Wenger (1991), scholars have attempted to refine concepts and provide more coherence to the whole framework. Indeed, the definition of communities of practice I use in this chapter is the result of Wenger's efforts to achieve that goal (Wenger 1998). However, analytical propositions have not always been systematically backed by empirical data and the framework is still at risk of losing its analytical power.

A strand of the literature that is particularly underdeveloped is that of "distributed" communities of practice. While scholars remain optimistic about the potential of communities of practice to operate across long distances there is a lack of empirical studies that show how such distributed communities actually work. With my research on the TechBA community of practice I aim at filling that gap. In this chapter I showed how the efforts of the Mexican government to support the global expansion of innovative Mexican companies has resulted in a community of practice that transcends organizational boundaries and operates across borders. I also showed how this 'distributed' community of practice in fact operates as a constellation of communities with TechBA staff and consultants mediating among members of distant communities.

This is in line with Wenger's views on the role of "brokers", or individuals introducing elements of one practice into another (Wenger 2000). Wenger points out that linking different communities can require so much sustained work that it might become a practice on its own, what he calls 'boundary practices.' These concepts help us characterize the dynamics within and among different communities of practice but still, they are the result of abstract theorizing. While Wenger recognize that some individuals can act as brokers between communities, he does not address the question of how brokers enable effective interactions among members of different communities. This question is even more salient when the two actors involved are located in distant locations and have developed different practices with particular worldviews, tacit norms, and codes of communication.

We cannot safely assume that effective interactions between two individuals located in distant locations will be automatic, even if a “broker” facilitates their encounter. As Lam (1998; 2000) has pointed out, “the skills required for effective knowledge transfer within collective learning processes are highly time- and space-specific. Interactive, collective learning is based on compatible intra- or inter-organizational routines, tacit norms and conventions regulating collective action as well as tacit mechanisms for the absorption of codified knowledge. This requires that the actors in question have a shared understanding of “local codes,” on which collective tacit as well as disembodied codified knowledge is based” (Asheim 1999; Lundvall 1996; Asheim and Gertler 2005). As communities of practice scholars themselves recognize, the knowledge and skills enabling effective interactions between different actors can only be developed in practice through immersion in the relevant social context.

If a shared practice in the relevant context is a pre-condition to sustain effective interactions among individuals, how can two individuals operating in two different social contexts and with different practices interact effectively, even if their interactions are mediated by a broker. And what is the role of the broker in that process. Those are empirical questions that communities of practice scholars have not resolved yet and which I will address in the next chapter.

5. TechBA and “legitimate peripheral participation:” a social context for learning and identity formation

5.1 Introduction

In Chapter 4 I showed how the TechBA program articulates a cross-national community of practice supporting the global expansion of Mexican firms. Through some formal partnerships and numerous informal collaborations the TechBA program has enabled Mexican entrepreneurs to access key actors in foreign regions to support the various technological, commercial, legal, and financial activities involved in introducing their new products and services to global markets. I also showed how TechBA staff and the consultants closely involved in supporting Mexican companies operate as ‘brokers,’ facilitating interactions across distant business communities.

But how is TechBA facilitating effective interactions among Mexican entrepreneurs and actors in global markets? Even when TechBA staff and consultants might help Mexican entrepreneurs identify actors in distant locations and connect with them, we cannot simply assume that effective interactions among those actors will be immediate or straightforward. The theory suggests that simply bridging the geographical distance between two distant actors would be insufficient to sustain the collective learning required to support global innovation processes. As Lam (1998; 2000) has pointed out, the skills required for effective knowledge transfer within collective learning processes are highly time- and space-specific. Interactive, collective learning is based on compatible intra- or inter-organizational routines, tacit norms and conventions regulating collective action as well as tacit mechanisms for the absorption of codified knowledge. This requires that actors in question have a shared understanding of “local codes,” on which collective tacit as well as disembodied codified knowledge is based (Lundvall 1996; Asheim 1999; Asheim and Gertler 2005). Scholars further argue that the knowledge and skills necessary to sustain effective interactions among innovating actors can only be acquired through practical experience in the relevant context, i.e. ‘learning-by-doing’ (Lundvall and Johnson 1994; Jensen et al. 2007). Moreover, as Nonaka observed (1994, 21–22), the ‘variety’ of experience and the individual’s involvement in the ‘context’ are critical factors determining its generation and accumulation. This results from the tacit character of the knowledge and skills mediating effective interactions among innovating actors, which cannot be easily articulated or communicated in codified forms and transmitted over long distances (Polanyi 1966; Von Hippel 1988).

This suggests that for two actors to develop the same language, common codes of communication, and shared conventions and norms, previous exposure to a shared social and institutional context would be required. This view is reinforced by recent work on the role of technically skilled immigrants establishing cross-regional collaborations between Silicon Valley and peripheral technology regions around the world. According to Saxenian (2006), foreign-born, technically skilled entrepreneurs from China, India, Taiwan, Israel and other countries were able to establish a two-way flow of skills, technology, and capital between Silicon Valley and their home countries only after

studying and working for an extended period of time in the U.S. Their experience studying at top American universities and working in technology companies in Silicon Valley and related American technology centers enabled these new Argonauts, as Saxenian calls them, to develop the cultural and institutional know-how, as well as the professional networks, required to navigate the complexities of establishing technology ventures far from established centers of skill and technology. The experience of these new Argonauts suggests that long immersion in a particular context is necessary to get acquainted with its local codes and institutions, as well as to develop the personal and professional connections required to sustain effective collaborations with actors in that context.

So how is the TechBA program, and similar GIB initiatives, facilitating the development of the knowledge and skills required for entrepreneurs to interact effectively with actors located in distant regions? In this chapter I turn at the learning processes that take place within the TechBA community of practice to address this question. Looking at the dynamics within TechBA-Silicon Valley, I explore the mechanism through which TechBA enables Mexican entrepreneurs develop the views, language, codes of communication, routines and practices, as well as the professional networks to interact effectively with Silicon Valley actors as they introduce their innovative products and services to global markets. Applying insights from the communities of practice literature I will argue that TechBA provides a social context for learning and identity formation whereby Mexican entrepreneurs develop a new identity as global entrepreneurs. While the TechBA program is conceptualized as a series of business support processes and activities aimed at transforming firm-level dynamics, TechBA also facilitates a parallel transformation in the individuals leading the global expansion effort. In that way, TechBA-Silicon Valley socializes Mexican newcomers into the norms and practices of the Silicon Valley business community and enables them to be recognized as legitimate members of that community.

This chapter is organized as follows. In section 5.2 I introduce key concepts from the communities of practice framework. I will argue that this theoretical framework offers valuable insights to understanding the learning dynamics taking place in the TechBA community of practice as it focuses our attention in the social dimension of learning and on informal processes of knowledge generation and transmission such as observation, repetition, learning-by-doing, and story-telling. Section 5.3 applies those concepts to the analysis of the empirical data I collected through interviews and participant observation in TechBA-Silicon Valley. Section 4.4 introduces the conclusions of this chapter.

5.2 Learning as social participation: the perspective of the communities of practice framework

The concept of “communities of practice” was introduced by a group of learning theorists working to understand the social dimension of learning processes (Lave and Wenger 1991; Brown and Duguid 1991; Wenger 1998; Brown and Duguid 2001). The concept was coined by Jean Lave and Etienne Wenger in their book *Situated Learning* (1991), which explores the situated character of

human understanding and communication. *Situated Learning* takes as its focus the relationship between learning and the social situations in which it occurs.

Communities of practice scholars built their analytical framework on observations of actual practice, of how people actually work and learn, which are very different from formal descriptions of work and of learning (see Lave 1988; Lave and Wenger 1991; Brown and Duguid 1991). It is a reaction to common views of learning as the *transmission* of explicit, abstract knowledge from the head of someone who knows to the head of someone who does not in surroundings that specifically exclude the complexities of practice and the communities of practitioners. In those common views, the setting for learning is simply assumed not to matter. Communities of practice scholars have rejected transfer models, which isolate knowledge from practice, and developed a view of learning as social construction, putting knowledge back into the contexts in which it has meaning. From this perspective, learners can in one way or another be seen to construct their understanding out of a wide range of materials that include ambient social and physical circumstances and the histories and social relations of the people involved. Like a magpie with a nest, Brown and Duguid (1991) assert, learning is built out of the materials at hand and in relation to the structuring resources of local conditions. In the view of communities of practice scholars, what is learned is profoundly connected to the conditions in which it is learned.

But how does learning actually take place in a community of practice? According to Lave (1991) learning is neither wholly subjective nor fully encompassed in social interaction, and it is not constituted separately from the social world of which is part. Consequently, communities of practice scholars argue for a decentered view of the locus and meaning of learning, in which learning is recognized as a social phenomenon constituted in the experienced, lived-in world. The communities of practice approach makes the conditions of learning, rather than just abstract subject matter, central to understanding what is learned.

In this view of learning, the acquisition of knowledge goes hand-in-hand with the development of an identity as a member of a sustained community of practice. According to Brown and Duguid (2001) “people do not simply learn about; they also learn, as the psychologist Jerome Bruner (1996) suggests, to be. Learning, that is, does not just involve the acquisition of facts about the world, it also involves acquiring the ability to act in the world in socially recognized ways.” Learning, Brown and Duguid contend, involves acquiring identities that reflect both how a learner sees the world and how the world sees the learner. Learning any but the most simple job, then, is a complex social process, one that cannot simply be captured in the notion that “all learning takes place inside individual human heads” (Simon 1991, 125). Rather, as Teece et al. (1994, 15) suggest, “learning processes are intrinsically social and collective phenomena”.

In their seminal book *Situated Learning*, Lave and Wenger (1991) introduced the concept of “legitimate peripheral participation” (LPP) to outline this dual process of learning and identity formation. LPP refers to a social process of increasingly centripetal participation in a community of

practice in which 'newcomers' become 'old-timers' first by gaining legitimate access to the periphery of that community and then by moving progressively to more central roles as their knowledge and expertise develops. In this process newcomers develop a changing understanding of practice over time from improvised opportunities to participate peripherally in ongoing activities of the community. Knowledgeable skill is encompassed in the process of assuming an identity as a practitioner, of becoming a full participant, an old-timer. According to Hildreth et al. (2000, 28) "In these communities, newcomers learn from old-timers by being allowed to participate in certain tasks relating to the practice of the community. Over time newcomers move from peripheral to full participation in the community."

Communities of practice offer a particularly helpful level of analysis for looking at work, learning, knowledge, and work identity formation. According to Brown and Duguid (2001) these groups of interdependent participants provide the work context within which members construct both shared identities and the social context that helps those identities to be shared. Members of such groups collectively develop an outlook on work and the world that may reflect the organization as a whole, but will most intensely reflect the local community. Within this, because of the shared perspective, knowledge can be readily shared. Thus, joining a community of practice, through the process of LPP, gives access to that community's identity and through that to its collective knowledge. As Brown and Duguid (1991) put it, "learners need legitimate access to the periphery of communication—to computer mail, to formal and informal meetings, to telephone conversations, etc., and, of course, to war stories. They pick up invaluable "know how"—not just information but also manner and technique—from being on the periphery of competent practitioners going about their business." For Brown and Duguid, the composite concept of "learning-in-working" best represents the fluid evolution of learning through practice. For Wenger et al. (2002) sharing tacit knowledge requires interaction and informal learning processes such as storytelling, conversation, coaching, and apprenticeship of the kind that communities of practice provide. As Wenger (2006) puts it, the community of practice acts as a living curriculum for the apprentice.

According to Hildreth and Kimble (2004) LPP is both complex and composite and although Lave and Wenger saw LPP as an inseparable whole, it is helpful to consider the three aspects, legitimation, peripherality and participation separately. Legitimation refers to the power and the authority relations in the community. Peripherality refers to the individual's social rather than physical peripherality in relation to the community. This in turn is dependent on their history of participation in the group and the expectation of their future participation in and interaction with the community.

But the key to understanding communities of practice, according to Lave and Wenger (1991) is participation. "Communities of practice do not necessarily imply co-presence, a well-defined or identifiable group, or socially visible boundaries. However, communities of practice do imply participation in an activity about which all participants have a common understanding about what it

is and what it means for their lives and community. The community and the degree of participation in it are in some senses inseparable from their practice” (P. Hildreth, Kimble, and Wright 2000, 29).

It is important to stress that peripherality is not a physical concept as in core and periphery, nor a simple measure of the amount of knowledge that has been acquired. Lave and Wenger (1991) use the terms peripheral and full participation to denote the degree of engagement with and participation in the community but note that peripherality “must be connected to issues of legitimacy of the social organization and control over resources if it is to gain its full analytical potential” (P. Hildreth, Kimble, and Wright 2000, 29). Thus, a new member of the community moves from peripheral to full participation in the community. Initially their activities may be restricted to simply gathering domain knowledge. Later the newcomer may become involved with gaining knowledge associated with the specific work practices of the community. Gradually, as the newcomer learns, the tasks will become more complicated and the newcomer becomes an old-timer and is recognized as a source of authority by its members. And according to Brown and Duguid (1991), legitimacy and peripherality are intertwined in a complex way. Occasionally, learners are granted legitimacy but are denied peripherality. Conversely, they can be granted peripherality but denied legitimacy. If either legitimacy or peripherality is denied, learning will be significantly more difficult. For learners, then, a position on the periphery of practice is important.

Learning, from the viewpoint of LPP, essentially involves becoming an “insider.” According to Brown and Duguid (1991), “learners do not receive or even construct abstract, “objective,” individual knowledge; rather, they learn to function in a community, be it a community of nuclear physicists, cabinet makers, high school classmates, street-corner society, service technicians, etc. They acquire that particular community’s subjective viewpoint and learn to speak its language. In short, they are enculturated (Brown, Collins, and Duguid 1989). Learners are acquiring not explicit, formal “expert knowledge,” but the embodied ability to behave as community members.”

5.3 TechBA as a site for learning and identity formation

This section explores how TechBA is helping Mexican entrepreneurs sustain effective interactions with potential customers, partners, service providers, investors, researchers and other key actors in foreign markets supporting global innovation processes. Based on empirical observations of the dynamics around the Silicon Valley office of the TechBA program, this section will address the following questions:

- How does the process of “legitimate peripheral participation” take place in the TechBA-Silicon Valley community of practice?
- What are the mechanisms through which TechBA helps Mexican entrepreneurs become “insiders” in the Silicon Valley business community?

Applying the communities of practice framework, I will argue that TechBA-Silicon Valley enables a dual process of learning and identity formation through which Mexican entrepreneurs acquire the

ability to behave as members of the wider Silicon Valley business community. While TechBA is conceptualized as a business support program sustaining a series of firm-level transformations, the activities organized around its pre-acceleration and acceleration stages enable a parallel transformation in the outlook, attitudes, and practices of the entrepreneurs leading the global expansion effort. In that way, the TechBA-Silicon Valley community of practice constitutes a “living curriculum” for Mexican entrepreneurs to develop a new identity as global entrepreneurs.

My fieldwork revealed that the dual process of learning and identity formation that TechBA sustains and which enable Mexican entrepreneurs become “insiders” in a new business community involves four main aspects:

- Developing a new language and codes of communication
- Developing new *know-how* in the form of foreign business practices
- Developing *know-who*, or the knowledge to participate in professional networks in global markets
- Developing a new outlook and aspirations as a global entrepreneur

In Section 5.3.1 I will first discuss the firm-level transformations that TechBA-Silicon Valley facilitates in order for Mexican companies to obtain legitimate participation in global markets. In Section 5.3.2 I will then turn at the process of legitimate peripheral participation from the point of view of the entrepreneurs participating in the TechBA program. I will analyze the various mechanisms through which TechBA-Silicon Valley helps Mexican entrepreneurs go through a dual process of learning and identity formation and become “insiders” in a new business community.

5.3.1 Firm-level transformations and legitimate peripheral participation

The TechBA program is conceptualized as a business support program sustaining firm-level transformations aimed at getting a Mexican company from a stage where it operates exclusively in the domestic market to one where it competes in foreign markets. To that end, the TechBA program guides Mexican entrepreneurs in developing and implementing a commercial strategy which involves exploring foreign market opportunities, defining and validating a value proposition, developing a go-to-market strategy and marketing campaigns, and implementing a sales plan⁹⁸. But in addition to the commercial activities involved in implementing a global expansion strategy, initiating and sustaining operations in foreign markets requires a series of adaptations in the structure and organization of a company in response to the legal, fiscal, and regulatory requirements in target foreign markets. In its efforts to accelerate the global expansion of Mexican companies, the TechBA program offers guidance and access to specialized service providers to help Mexican companies navigate efficiently through these adaptations.

TechBA first helps Mexican entrepreneurs understand the fiscal requirements to initiate operations in a foreign market and facilitates access to legal and accounting service providers to implement the

⁹⁸ Official slide presentation of the TechBA program.

necessary changes in the structure and organization of the firm. When the company is ready to initiate operations in a foreign market, TechBA also guides entrepreneurs through the process of establishing a subsidiary in a foreign market. TechBA offers workshops to explain the different ways of constituting a subsidiary abroad, the advantages and disadvantages of each mode of incorporation, and also facilitates access to legal firms specialized in these services. TechBA also helps Mexican entrepreneurs understand the regulations and standards that apply to their particular products or services and guides them through the process of complying with them. It also helps entrepreneurs obtain intellectual property in a foreign market for their inventions and provides support in implementing an IP strategy. Finally, TechBA helps Mexican entrepreneurs obtain temporary work visas and comply with all the migratory requirements to operate in a foreign market.⁹⁹

The adaptations in structure and organization that TechBA facilitates are not only guided by the need to comply with local laws and regulations in a new market. Companies have various choices when it comes to deciding an entry mode that would allow them to operate legally in a foreign market, including: exporting, a wholly-owned subsidiary, a joint venture (in which the entrant could majority, equal, or minority partner), or a non-equity arrangement such as licensing or a contractual joint venture (Anderson and Gatignon 1986; Root 1994). The question of how to decide the best entry mode has riddled both scholars and managers for years and much work has been devoted to weighing tradeoffs and with maximizing an economic criterion: long-term efficiency (Anderson and Gatignon 1986; Root 1994; Datta et al. 2002; Canabal and White 2008).

But my fieldwork revealed that decisions on entry mode and other aspects regarding the operations of a Mexican company in foreign markets are primarily guided by the need to turn Mexican companies into “insiders” in a foreign market. A primary concern of TechBA staff when advising entrepreneurs is the perception that actors in global markets have of the Mexican companies trying to access that market. Accordingly, decisions were guided primarily by the need to develop a new identity for a company, from being a “foreign company” to being a “global company with a local presence.” For instance, when discussing the activities involved in helping Mexican companies set-up operations in the U.S., the CEO of TechBA Silicon Valley comments,

We help them constitute a legal model to operate their business in the U.S. And this is something we learned along the way. When we started the TechBA program we thought, let’s have Mexican companies selling to U.S. customers from Mexico, in fiscal terms. But soon we realized that this mode of operation was a big barrier. Signing an international contract or placing an international sale order implies much more work for a U.S. company than if they are dealing with a local company. So now we ask Mexican companies to establish a subsidiary in the U.S. so that they can sign contracts, submit invoices, and all that as any local company. They still

⁹⁹ Personal interview with the CEO of TechBA-Silicon Valley, March 2008. Official slide presentation of the TechBA program.

need to do all the paperwork to make the transaction between their company in Mexico and their subsidiary in the U.S., but U.S. customers don't see it, they don't have to deal with that.¹⁰⁰

How potential customers and other actors in foreign markets perceive Mexican companies and how to help them develop a new identity as a “global company with a local presence” is at the core of many decisions and activities implemented by TechBA. Even before going through the whole process of establishing a subsidiary abroad, TechBA helps Mexican companies operate as insiders in a foreign market through various mechanisms. By participating in the TechBA program Mexican entrepreneurs have access to TechBA office space abroad and can use the TechBA mailing address in foreign locations for their own communications with local organizations. In this way they can introduce their company as a global company with offices in Mexico and in the target foreign market from the first day they participate in the program, as they begin interacting with potential customers, partners, and investors.

Another example of how TechBA helps Mexican companies operate as insiders and develop a new identity is a program that TechBA-Silicon Valley implemented in 2009 called “Sales Now”. This program helped Mexican companies obtain a basic sales force in Silicon Valley at an affordable cost by having one telemarketer and one business development professional working both part-time for two TechBA companies at a time. In addition of this arrangement that splits the cost of hiring these professional between two companies, TechBA subsidized the cost of the Sales Now program, reducing significantly the cost for a Mexican company to have a local sales force that can speak the language of U.S. customers and with the know-how of local sales practices. When asked about his motivations to implement the “Sales Now” program the CEO of TechBA-Silicon Valley explained,

What we are looking for is to have one person from the Mexican company working together with a local salesperson. A local salesperson buys you time, it is an important factor. Since they know the local actors they can move more easily. When you don't know anybody it takes you a long time to find out where to go, who are your customers, how to interact with them, how to introduce yourself. That's why we look for a combination of a Mexican manager with a local salesperson.¹⁰¹

And to help Mexican companies approach potential customers in global markets on an equal footing with competitors TechBA also helps Mexican entrepreneurs develop a new image for their companies, assisting them in redesigning their company's websites and implementing marketing campaigns. According to my own observations and to my interviews with TechBA staff and consultants, most companies that join the TechBA program not only have poorly designed websites exclusively focused on the Mexican market, but also are not taking advantage of their website and other digital and social network tools to market and sell their products and services on-line. TechBA consultants advise Mexican companies on how to redesign their websites in order to develop an

¹⁰⁰ Personal interview with the CEO of TechBA-Silicon Valley, March 04, 2008.

¹⁰¹ Personal interview with the CEO of TechBA-Silicon Valley, March 02, 2010.

image as a global company. They also advice companies on how to establish an on-line presence in social and professional networks, and how to implement an on-line marketing strategy on par with global competitors.

From the communities of practice perspective, all these firm-level adaptations grant a Mexican company “legitimate peripheral participation” in a foreign market. By complying with all the legal, fiscal, and regulatory requirements to operate in a foreign market, and by developing a local sales force and a new website and marketing materials, Mexican companies develop a new identity as a global company. That new identity gives Mexican entrepreneurs legitimate access to a new business community and enables them to sustain interactions with potential customers, partners, investors and other key actors. In turn, these interactions are key to the learning process that enables Mexican entrepreneurs develop, validate and implement a new value proposition that responds to the needs and opportunities in global markets.

TechBA also enables a gradual process of involvement in a new community of practice. Mexican companies can interact with potential customers and other actors in global markets from the day they join the program, using TechBA’s office space and mailing address to present themselves as a global company with local presence. And they consolidate their identity as a global company as they advance through the program, developing a website and marketing campaigns, establishing a local sales force, and finally establishing a local subsidiary. In that sense, they move from “peripheral” to “central” participation in a new community of practice as they define and implement their global expansion strategy, learning and gathering information by interacting with other members of the business community. In accordance with the communities of practice framework, the capacity of TechBA companies to learn through interaction with other actors in foreign markets goes hand-in-hand with the development of a new identity as a global company, which enable them to operate as insiders in that business community.

But beyond the firm-level adaptations that TechBA facilitates, my field work revealed that the activities organized around the pre-acceleration and acceleration stages of the program enable a parallel transformation in the outlook, attitudes, and practices of the entrepreneurs leading the global expansion effort. The next section turns at the different formal and informal mechanisms through which TechBA-Silicon Valley helps Mexican entrepreneurs become “insiders” in the Silicon Valley business community.

5.3.2 TechBA as a “living curriculum:” sustaining a dual process of learning and identity formation

This section explores how TechBA enables a process of “legitimate peripheral participation” of Mexican entrepreneurs in a new business community. I will discuss different mechanisms through which the TechBA community of practice in Silicon Valley enables Mexican entrepreneurs become “insiders” in a new business community.

I will argue that the TechBA-Silicon Valley community of practice sustains a dual process of learning and identity formation through which Mexican entrepreneurs develop a new outlook, attitudes, and practices. In this way, Mexican entrepreneurs develop a new identity as “global entrepreneurs,” with the ambition to grow a global company and with the knowledge and skills required to interact effectively with actors in global markets. Accordingly, the community of practice around the TechBA program should be understood as a “living curriculum,” a social context that sustains the practices that enable Mexican entrepreneurs learn “how to be” a global entrepreneur.

The remaining of this section is organized in four parts, each addressing a key aspect involved in the dual process of learning and identity formation:

- Developing a new language and codes of communication
- Developing new “know-how” on foreign business practices
- Developing “know-who,” or an understanding of the key players in global markets
- Developing a new outlook and aspirations as a global entrepreneur

5.3.2.1 Developing a new language and codes of communication

Most entrepreneurs who join the TechBA program are fluent in English. In fact, language itself serves as a filter in the process of selecting the companies participating in TechBA. After participating in the immersion week of the pre-acceleration stage of the program in Silicon Valley, in which all presentations are in English, and where entrepreneurs have to interact directly with Silicon Valley actors, many realize they do not have the sufficient level of fluency to commit to the whole program.

But for those who remain in the program, the challenge of introducing a new product or service in the Silicon Valley market, through direct interaction with local actors, confronts Mexican entrepreneurs with a new level of complexity in the use of the language and with new codes of communication. This requires them to get acquainted with a whole new set of terms related to the particular Silicon Valley business culture and practices as well as understand the appropriate forms and settings to communicate with other actors effectively. My observations in the field revealed that concepts like “lead generation,” “term sheet,” “due diligence,” “round A investment,” “exit strategy,” and many others are new to many Mexican entrepreneurs coming to Silicon Valley for the first time. But more importantly, they are also not familiar with the particular codes of communication of the Silicon Valley community, like using an elevator pitch, interacting in a networking event, or with the certain aspects of making cold calls, communicating by email and the use of digital networking tools for business interactions that are particular to the Silicon Valley business culture. But the activities and events organized during both the pre-acceleration and acceleration stages of the TechBA program offer Mexican entrepreneurs both formal training and numerous experience-based learning opportunities to get acquainted with a new business language and to develop new codes of communication in a variety of ways.

When participating in the induction week of the pre-acceleration stage of the program Mexican entrepreneurs are asked to define and put into practice their elevator pitch. An elevator pitch is a 60-second summary used to quickly and simply define a product, service, or organization and its value proposition. This form of communication is a hallmark of the Silicon Valley business culture and is used for first encounters in situations where an entrepreneur might meet a potential customer, partner, or investor. In the context of fast-paced business relations of Silicon Valley, where business opportunities and information on new technologies run through social and professional networks, entrepreneurs, executives and professionals are accustomed to this form of communication as a way of maximizing their chances of meeting a valuable business contact. But an elevator pitch is new for most Mexican entrepreneurs as the business culture in Mexico does not demand such fast-paced communication strategies. According to my interviews with Mexican entrepreneurs participating in the program, new business contacts in Mexico are usually the result of a formal introduction in settings where business opportunities can be explored over longer conversations, usually at lunch time.

When participating in the induction week of the pre-acceleration stage of the program Mexican entrepreneurs at the Silicon Valley office receive a document titled “Doing Business in Silicon Valley,” which mentions the following about the elevator pitch:

Americans were the inventors of the 60-second sales pitch (elevator pitch). The level of marketing noise bombarding buyers and the number of competitors makes it a necessity. You need to be sure you can move a US buyer from passive disinterest to curious engagement as quickly and effectively as possible – ideally in 60 seconds.¹⁰²

This guide discusses the elements that should be included in a good elevator pitch and offers the following template to help Mexican entrepreneurs develop their own pitch:

To start writing your sales pitch, try completing this phrase:

“_____ companies call us when they want _____, _____, and _____.”

Next, build your sales pitch by including the following:

- What your company & product do
- For whom (the customer)
- The results or value you deliver
- For example, our customers include ____, ____, and ____.

Finally, remember to keep it short and to the point.

Also during the induction week, TechBA offers a workshop on defining a value proposition and an elevator pitch. This workshop, offered by a Silicon Valley business consultant, asks Mexican entrepreneurs to work in groups, sharing their elevator pitch and discussing it with each other. The

¹⁰² Doing Business in Silicon Valley, TechBA, 2009, p. 30.

consultant guiding the exercise prompts Mexican entrepreneurs, “test your elevator pitch, can your grandmother understand it?” He concludes the exercise by encouraging Mexican entrepreneurs, “rehearse, rehearse, and rehearse again.”¹⁰³ During the rest of the induction week, and throughout the whole program, TechBA offers numerous opportunities for Mexican entrepreneurs to put into practice their elevator pitch. TechBA first organizes an elevator pitch competition, having all the entrepreneurs presenting in front of the group and getting feedback from their peers and from TechBA consultants. The activities organized during the pre-acceleration stage of the program also include participation in local networking events, where Mexican entrepreneurs are encouraged to put into practice their elevator pitch in interaction with locals. In this way, TechBA provides a context for Mexican entrepreneurs to learn new codes of communication through actual experience, interacting first with members of the TechBA-Silicon Valley community of practice and then moving to full participation in the Silicon Valley business community.

Another example of how TechBA-Silicon Valley helps Mexican entrepreneurs learn the local codes of communication is the guidance it offers on how to interact in local networking events. Networking events are another hallmark of the Silicon Valley business culture and typically feature a presentation or a panel discussion by business experts and industry leaders who discuss the latest technology or commercial trends in a particular sector. At any given week there are dozens of networking events organized throughout the Valley and entrepreneurs, executives and professionals attend these events regularly. But besides learning about an interesting topic or staying updated with the latest technology and commercial trends, the goal of people attending these events is to meet valuable business contacts and expand their professional network. The presentations at these events are typically preceded and followed by networking time where people mingle around, engaging in conversations with strangers which aim at finding out quickly if another person shares particular interests or offers complementary skills and resources that might lead to new business opportunities. Conversations are casual but to the point, and after interacting for a few minutes people typically end the conversation to move on to the next engagement. If there is a mutual interest in further exploring business opportunities people exchange business cards to continue the conversation at a later time. But people avoid having very long conversations with any one person to maximize the number of encounters and therefore the chances of meeting a valuable contact.

TechBA encourages Mexican entrepreneurs to attend these events regularly as a way to get leads and find business opportunities. But the social dynamics at Silicon Valley events are very different from the ones at professional and social settings in Mexico, where people typically do not talk to strangers unless they are introduced by a common acquaintance. People in Mexico are also not used to having very straightforward conversations and professional encounters typically begin with small talk before addressing any substantive issues. In addition to the challenge of communicating in English, these simple cultural differences make networking events very intimidating for many Mexican entrepreneurs when they first arrive to Silicon Valley. But TechBA staff and consultants offer

¹⁰³ Slide presentation “Value Proposition & Your Elevator Speech,” by Michelle E. Messina, Explora International LLC.

guidance on how to behave at these events and frequently join Mexican entrepreneurs to demonstrate through example. During the induction week of the pre-acceleration stage of the program, the CEO of TechBA-Silicon Valley tells the following to Mexican entrepreneurs before the first networking event scheduled in the program:

When you go to a social event in Mexico, what do you do? You walk in and the first thing you do is to look around the room for a familiar face. As soon as you find someone you know you go straight to that person to talk to. You feel safe in company of someone you know and you can probably spend the whole event talking to that same person. And the last thing you would do is to talk to a stranger!

In a networking event you want to do the opposite. The last thing you want to do is to talk to somebody you already know. What you want is to meet new people, to find leads you can use for your business. And you want to meet as many people as possible. So when you go to the networking event tonight, I don't want to see you talking to each other. You should just approach somebody you don't know and introduce yourself. Find out what that person does and don't just talk about yourself. You should be asking questions to find if that person is of any interest to you. And once you find out, move on to the next person. People in Silicon Valley won't find it rude if you say, "Hey, it was nice meeting you, I will let you meet more people."

So have fun at the event and let's see who can get more business cards tonight!¹⁰⁴

Another TechBA manager encourages Mexican entrepreneurs to interact with people at networking events by saying, "don't be afraid of your French accent," alluding to a common fear among Mexican entrepreneurs of being noticed as outsiders or not having the appropriate level of fluency in English. "Everybody in Silicon Valley has an accent," he remarks. During the five days of activities of the induction week that took place in 2009 TechBA-Silicon Valley scheduled three networking events for Mexican entrepreneurs to start interacting with local actors. Together with the exercise they previously had where they had to practice their elevator pitch with their peers, participation in networking events offer experience-based learning opportunities for Mexican entrepreneurs to get acquainted with the particular forms of communication of the Silicon Valley business culture. TechBA encourages Mexican entrepreneurs to make networking a regular practice, suggesting to network at least 3-5 times per month for the first six months. A TechBA consultant remarks during one of the introductory presentations of the induction week, "Be seen all around Silicon Valley. A network of contacts is essential to participating in the Silicon Valley ecosystem."¹⁰⁵

TechBA-Silicon Valley also provides Mexican entrepreneurs guidance and numerous experience-based learning opportunities to synchronize them with the local standards in other forms of communication. The "Doing Business in Silicon Valley" that TechBA distributes to all entrepreneurs joining the program explains key differences between the Mexican and Silicon Valley

¹⁰⁴ Personal notes, observations at TechBA-Silicon Valley's induction week, January 2009.

¹⁰⁵ Slide presentation "Value Proposition & Your Elevator Speech," by Michelle E. Messina, Explora International LLC.

business culture and offers practical guidelines on how to effectively communicate by email, make cold calls, or use LinkedIn and other communication technologies to interact effectively with local actors. But more importantly, TechBA offers entrepreneurs learning-by-doing opportunities with the support of the TechBA consultants who work with each entrepreneur throughout the pre-acceleration and acceleration stages of the program. My observation in the field revealed that TechBA consultants offer advice on how to draft emails according to local standards and even revise entrepreneur's emails before sending them to key actors. Consultants also offer advice on the proper ways of making a sales presentation and have Mexican entrepreneurs rehearsing with them before facing a customer. Mexican entrepreneur also receive advice on how to make cold calls and can learn from observation and repetition from the local salespersons that TechBA hired through the Sales Now program discussed before. Finally, TechBA staff and consultants encourage Mexican entrepreneurs to use LinkedIn to identify and communicate with potential customers or partners. This popular on-line professional network is widely used in Silicon Valley but is not common as way to support business interactions in the Mexican business culture.

Through all these different mechanisms, including formal training but primarily through numerous experience-based learning opportunities, TechBA helps Mexican entrepreneurs develop a new language and codes of communication to effectively interact with the Silicon Valley business community. As put by a Mexican entrepreneur when explaining the value of participating in the TechBA program,

Now I can go to an event here and I know exactly what they are talking about. I mean, it is not a new language to me.¹⁰⁶

5.3.2.2 Developing new “know-how” on foreign business practices

Effectively interacting with actors in global markets also requires Mexican entrepreneurs to develop new business practices. Participation in the TechBA program offers guidance and numerous experience-based opportunities to develop this know-how. My observations of TechBA-Silicon Valley revealed that entrepreneurs can learn new business practices not only from formal training and guidelines but by interacting with the practitioners that surround the TechBA program. First, they can learn from interacting with the staff and consultants more closely involved in the operation of the program and who are familiar with the local business practices. Those interactions provide learning opportunities in the form of narration and story-telling, demonstration, as well as from practical exercises designed to recreate the conditions in which entrepreneurs would have to perform new business practices in real life. Subsequently, Mexican entrepreneurs learn new business practices by gradually interacting with the larger Silicon Valley business community, initially with the support of their TechBA consultant and through interaction with friendly customers, to the point where they face customers and other actors on their own.

¹⁰⁶ Personal interview with a Mexican entrepreneur participating in the TechBA program, August 2009.

One of the new business practices Mexican entrepreneurs need to learn is the five-minute sales presentation. These short presentations enable sales persons and entrepreneurs to quickly introduce their company and their value proposition to potential customers in order to help them decide if the opportunity is worth exploring in detail. Five-minute presentations are a common practice in the U.S. business culture but are rarely used in Mexico. According to my interviews with TechBA consultants and Mexican entrepreneurs, business opportunities in Mexico are usually explored at lunch or extended meetings. For businesspersons in Mexico, the decision to start a new business relationship depends not only on economic considerations, but on other intangible aspects like a sense of personal affinity. Longer and less structured business meetings enable the actors in question to explore shared interests, learn about their personal and professional background, and communicate their views and aspirations on aspects beyond the deal under consideration.

In their attempts to introduce new products and services in the Silicon Valley market, Mexican entrepreneurs need to quickly get acquainted with five-minute presentations as they need to make frequent use of them when developing and testing their value proposition in interaction with potential customers. TechBA helps entrepreneurs develop this know-how from the very beginning of the program. During the induction week of the 2009 pre-acceleration program at Silicon Valley, TechBA included one workshop on effective sales presentations. For this workshop TechBA brought in a Silicon Valley consultant who provided Mexican entrepreneurs with guidelines on both form and content of effective sales presentations, including recommendations on how to tailor a presentation to a particular audience, how to establish credibility, how to craft key messages in a clear and compelling way, and how to respond to questions and concerns from the audience.¹⁰⁷ This session aimed at getting Mexican entrepreneurs the tools to prepare their own five-minute sales presentation which they got to practice at the end of the pre-acceleration stage of the program.

During the closing-week of the pre-acceleration, Mexican entrepreneurs were asked to make a five-minute presentation in front of a panel of TechBA consultants. In this way, Mexican entrepreneurs had the opportunity to develop new skills through learning by doing and from observing their peers, as well as to receive feedback from practitioners with ample operational experience in Silicon Valley. At this session TechBA managers and consultants aimed at recreating the conditions that entrepreneurs would face in a standard business meeting. All presentations were in English, entrepreneurs were selected randomly to present, and they were stopped after the established time, whether they were finished with their presentation or not. In setting the stage for the presentations a manager at TechBA-Silicon Valley told the following anecdote to the audience:

Let me tell you a story about a guy from Monterrey who participated in the program last year. At some point he got an appointment to make a sales presentation to one of the largest software companies in the world. He was told he would have fifteen minutes to make a presentation. So he prepared his presentations for two weeks, rehearsing and rehearsing with the support of his

¹⁰⁷ Slide presentation, “Effective Sales Presentations & Brochure,” Paul Hamel, COO Pier 2 Marketing.

TechBA consultant. The day before of his presentation he practiced with yet another TechBA consultant. This consultant was very harsh on him but the entrepreneur was encouraged.

When he arrived to his appointment, the executives at this software company were holding a meeting. They told him they could only receive him during a break, and that he would have only five minutes to make his case. When the time came, this entrepreneur walked into the room and opened his laptop. The decision maker closed it and told him “you have only five minutes, tell us what you have.”¹⁰⁸

The TechBA manager then told the audience: “If you think we are being tough here, think twice. This is real life.” Other TechBA consultants would also encourage Mexican entrepreneurs to make their presentation as if they were doing it for a real customer.

At the end of the session, TechBA consultants selected the best ten companies which then presented again to a panel of Silicon Valley investors and executives at the end of the closing week. And throughout the closing week of the pre-acceleration stage of the program entrepreneurs would also be asked to meet real customers to validate their value proposition. During this week they had the opportunity to validate the value proposition they developed throughout the twelve weeks of the pre-acceleration program, working from Mexico with the aid of their consultant in Silicon Valley. TechBA consultants would help them identify friendly customers who would provide feedback to the entrepreneurs. Often, TechBA consultants would join Mexican entrepreneurs to their first business meetings to provide support and give them feedback on their execution. In this way, TechBA-Silicon Valley provides experience-based learning opportunities where entrepreneurs can develop new business practices through a process of increasing participation in the Silicon Valley business community.

The five-minute sales presentation is just one example of the many business practices that entrepreneurs learn throughout their participation in TechBA. My observations in the field revealed that TechBA sustains a learning process that helps entrepreneurs develop various business practices, including new practices related to the sales process in foreign markets, the use of technology in marketing and other operations within the firm, and new product development among others. Through both formal training and experience-based learning opportunities Mexican entrepreneurs develop the know-how that allows them to effectively interact with actors in global markets.

5.3.2.3 Developing *know-who*, or the knowledge to participate in professional networks in global markets

The challenge of introducing their innovative products and services to global markets confronts Mexican entrepreneurs with a whole new landscape of actors who might be involved in their global expansion efforts. They need to understand who their potential customers and competitors in global

¹⁰⁸ Personal notes, observations at the closing week of TechBA-Silicon Valley’s pre-acceleration program, May 2009.

markets are and who they might partner with in order to support all the activities involved in introducing new products and services to a new market. My interviews with TechBA-Silicon Valley consultants revealed that before joining the program Mexican entrepreneurs have a very general understanding of their competitors and other key actors in global markets. Coming from a much smaller market Mexican entrepreneurs have less competition and are not used at looking at the competitive landscape in global markets with a high level of detail. As explained by a TechBA-Silicon Valley consultant,

When they come here all of the sudden the competition explodes. And just to give you an example. This company I am working with now, in Mexico they have one major competitor and there are two other local ones. And when I asked, OK, what about the U.S.? They said, well, in the U.S. this is our competitor, one major one. But that company didn't have exactly the same products. They also found a couple of major ones, but again, they didn't quite have exactly the same products. And then I said, are you sure? OK. Then I did a quick search and I found twenty! One of them identical to them! All right? And twenty other ones that provided something similar. And they hadn't come across them. I gave them a couple of names and definitely they had never heard of them. So again, there is much more competition here. Bigger market, more competitors. And that is something they may lack in their local markets.¹⁰⁹

TechBA helps Mexican entrepreneurs understand who-is-who in their particular industry and facilitates connections with key actors through a variety of mechanisms. First, TechBA makes use of business information services to assist Mexican entrepreneurs in obtaining information about potential customers and competitors. For instance, TechBA-Silicon Valley is subscribed to the services provided by Hoover's, a company that offers proprietary business information through the Internet and other mobile devices. Using this database, entrepreneurs can filter companies by industry, size, location, and other indicators as well as obtain detailed information on the performance of the company and a profile of its key executives. TechBA also helps Mexican entrepreneurs understand the key actors in global markets through workshops aimed at familiarizing them with the local ecosystem in each of the foreign regions where TechBA has representations. During the 2009 pre-acceleration program in Silicon Valley, entrepreneurs received a training session on the Silicon Valley business culture in which a TechBA consultant explained who the main actors in the region are and their role in supporting the development of new technology companies. His presentation included an overview of the main business and professional organizations, angel and venture capital investment organizations, universities and research centers, and major technology companies.¹¹⁰

But as pointed by Lundvall and Johnson (1994, 28), *know-who* is not just a question of knowing that person A is the director of firm B. They would categorize this type of knowledge as *know-what*, or facts that can be easily codified and stored in a database like Hoover's. *Know-who* refers to specific

¹⁰⁹ Personal interview with a TechBA-Silicon Valley consultant, June 2010.

¹¹⁰ Slide presentation, The Silicon Valley Business Culture, by Adolfo Nemirovsky, Ph.D, TechBA-Silicon Valley 2009.

and selective social relations and implies knowing “who knows what and can do what.” Furthermore, in order to implement their global expansion strategy, Mexican entrepreneurs not only need to know “who knows what and can do what,” but also they need to find a way to get access to a person once identified as a key player. As a TechBA-Silicon Valley consultant puts it when describing the work he does with Mexican entrepreneurs,

So now that you know who your competitors are, and what markets you are targeting, we need to find out who are, within those segments, your potential customers. And how are we going to talk to those potential customers, right?¹¹¹

But identifying key actors in global markets and finding out ways to get access to them is not a linear or straightforward process. This process is interrelated with the strategic decisions entrepreneurs need to take in order to position their companies in global markets. My interviews with TechBA-Silicon Valley consultants revealed that when accessing the U.S. market Mexican entrepreneurs need to find a very specific market niche to compete in. While in Mexico entrepreneurs are used to targeting much broader market segments, the size and sophistication of the U.S. market often requires them to focus in a very specific market niche, at least initially, and define their competitive advantage against competitors in that niche. In this way, questions about who their competitors and customers are, and how to access them, go hand-in-hand with questions about which market niche they want to focus on. As exemplified by a TechBA-Silicon Valley consultant,

I asked a Mexican company, who are your competitors? And they mentioned the three major ones, global competitors. I said, not really, those are not your competitors! And they looked at me kind of puzzled. And they go, why? Because you cannot compete with companies that are doing ten billion dollars a year, all right? Those are huge companies. Those are not your competitors. You need to specialize on something. Pick your specialization.

So they picked a little niche, all right? And they found ninety companies! Ninety companies that provide some sort of similar thing! Now, we need to break it down a little further. That is a niche, right? But it is a niche that could easily be worth two or three times their entire market in Mexico. So now their competitors are not the big, major one, two, three players, right? Because they cover eighty percent of the market. Their competitors are those little localized regional companies that have a very “nichi” product.¹¹²

Accordingly, TechBA enables Mexican entrepreneurs to develop their *know-who* as they work with their assigned TechBA consultant in defining their global expansion strategy. As discussed in Chapter 5, TechBA matches each company with a local consultant with long operational experience in the target foreign market. These consultants not only have a nuanced understanding of the landscape of actors involved in specific industries in global markets, but also have deep ties to social

¹¹¹ Personal interview with a TechBA-Silicon Valley consultant, June 2010.

¹¹² Personal interview with a TechBA-Silicon Valley consultant, June 2010.

and professional networks in those markets and often mobilize their contacts to support Mexican companies. As explained by a TechBA-Silicon Valley consultant,

Even before I started working more directly with TechBA companies, people would call me and say, do you know somebody in this industry or even in a specific company? Because they wanted to verify that their product was right for the market. So again, if I don't know necessarily someone in that company or in that industry, I would know someone who would. So that's how I would make the connection.¹¹³

Throughout their participation in the TechBA program, Mexican entrepreneurs can tap into their consultant's *know-who* as they define and implement their global expansion strategy. TechBA consultants not only help Mexican entrepreneurs in identifying potential customers and other key actors and finding ways to access them. My observations in the field revealed that they also assist entrepreneurs in their first meetings, mobilizing the trust they have built within the business community in favor of Mexican entrepreneurs. This represents a key asset for Mexican entrepreneurs when defining and validating their value propositions in global markets, as explained by a TechBA consultant when discussing the process of introducing a product or service to a new market,

Well, in my personal opinion, the better you know the person, the easier it is to do a validation. When first introducing a product or service you don't want to be doing a "hard sale". You want to have a "warm contact." With a "warm contact" it's easier to ask questions and also is easier for them to answer you. Because, let's say it is not the right product, if they don't know you, they wouldn't tell you why is not the right product. Or they wouldn't give you more market information. If it's a person that you know, or knows somebody who knows you very well and knows what you are trying to do, they are more open to give you information regarding your product, good or bad. If they know you, they are more likely to give you a meeting in the first place, than if you didn't know them. So to me, that relationship is very, very important for you to help these companies.¹¹⁴

Working together with a TechBA consultant offers Mexican entrepreneurs the opportunity to develop their own *know-who*, as they can understand the decisions a consultant makes when defining and implementing a global expansion strategy. This, however, is not an immediate process and is only achieved through sustained interactions with their TechBA consultant throughout the year-long acceleration program. When explaining the way he helps entrepreneurs understand the market as they define a commercialization strategy, a TechBA-Silicon Valley consultant explains,

¹¹³ Personal interview with a TechBA-Silicon Valley consultant, June 2010.

¹¹⁴ Personal interview with a TechBA-Silicon Valley consultant, June 2010.

Every action that I take with them I explain the reasons why I did it. But I understand this is a long term process, right? In other words, they are not going to understand the market in one meeting that I have with them. It is over a period of time, it is a long term process.¹¹⁵

In addition to providing learning opportunities through sustained interactions with their consultants, TechBA helps Mexican entrepreneurs develop their *know-who* through other mechanisms. Mexican entrepreneurs get exposure to the local business community in foreign markets through the numerous events and activities organized by each of TechBA's foreign representations. These include the panels where Mexican entrepreneurs present their projects to investors and industry experts and workshops and training sessions offered by local business consultants and specialized service providers. As discussed in Chapter 5, TechBA has also organized events expressly to introduce Mexican companies to the wider business community like the event that TechBA Silicon Valley organized with Silicom Ventures in 2009 or the panels and activities that TechBA has organized at TiE Con since 2009 as Silver Sponsor of the event. Furthermore, Mexican entrepreneurs obtain valuable contacts through their own peers, as explained by the CEO of TechBA Silicon Valley,

Sometimes an entrepreneur goes to a meeting with a potential customer just to find out that his company cannot offer what that customer is looking for. But after understanding what that customer needs, he realizes that another TechBA company can actually meet that need and facilitates an introduction. That creates a series of connections that have a tremendous value.¹¹⁶

In this way, the community of practitioners that surround the TechBA program provide numerous opportunities for Mexican entrepreneurs to develop the knowledge needed to participate in the professional networks in global markets. Platforms like Hoover's and other business information services offered by TechBA certainly help Mexican entrepreneurs get a general understanding of the competitive landscape in global markets and facilitates the process of obtaining detailed information about a company, once it has been identified as a key actor. But those databases do not offer the knowledge needed to effectively interact with actors in global markets. Tapping on the *know-who* of their TechBA consultant Mexican entrepreneurs can effectively identify and connect with key actors in global markets as they go through the process of positioning their companies to compete in global markets. And working closely with an experienced consultant with a long professional trajectory in a foreign market also enables Mexican entrepreneurs to operate as "insiders" in a new business community while they develop their own *know-who*. In this way, the TechBA community of practice provides the social context for Mexican entrepreneurs to gradually develop their own understanding of "who knows what and can do what," as well as the personal connections needed to implement a global expansion strategy.

¹¹⁵ Personal interview with a TechBA-Silicon Valley consultant, June 2010.

¹¹⁶ Personal interview with the CEO of TechBA-Silicon Valley, March 2008.

5.3.2.4 Developing a new outlook and aspirations as a global entrepreneur

In addition to helping Mexican entrepreneurs develop a new language and codes of communication, new *know-how* in the form of new business practices, and *know-who* to effectively participate in professional networks in global markets, my fieldwork revealed that TechBA also plays an important role in inciting them to develop a new outlook and aspirations about their role as entrepreneurs. TechBA staff and consultants frequently make use of narration and storytelling to assimilate Mexican entrepreneurs into the views and values of the local business community. And by participating in the TechBA community of practice, newcomers also develop a new outlook and aspirations by interacting with more experienced entrepreneurs who act as role models.

Fostering the development of new views and values about the role of entrepreneurs

In his efforts to promote the TechBA program, the CEO of TechBA-Silicon Valley frequently travels around Mexico to make public presentations at various forums on entrepreneurship and innovation. During his presentations he often uses a slide with a quote from Paul Graham, an influential essayist and commentator on technology and innovation and author of a book titled *Hackers & Painters: big ideas from the computer age*. The slide is titled “Entrepreneurial Mentality” and reads:

- The innovative entrepreneur seeks to create in 5 years enough wealth to live the rest of his life by developing a company:
 - Of high growth
 - In new markets
 - Scalable to global markets
 - Capable of reaching a liquidity event to capitalize the effort

Paul Graham
Hackers and Painters
Creator of Yahoo Stores¹¹⁷

During his public presentations, as well as during informal conversations, the CEO of TechBA-Silicon Valley is constantly challenging Mexican entrepreneurs to have the ambition to grow a global technology company. He often uses provocative quotes and stories like the one above to question their assumptions about their potential and role as entrepreneurs. According to him, one of the biggest tasks he and the TechBA program face is to change the mentality of Mexican entrepreneurs and open their eyes to the possibilities in global markets. In my first interview with him, when telling me about the evolution of the TechBA program and the lessons they had learned along the process, he mentioned the following:

Soon after we started the program we realized, as part of that learning process, that expanding to global markets is something that is simply not in the perspective of Mexican companies. What

¹¹⁷ Official slide presentation: TechBA, Technology Business Accelerator, by Jorge Zavala.

we do (at TechBA) goes against an idea they have and we decided to implement a process to sensitize them. That's when we introduced the pre-acceleration program. And what is the pre-acceleration program all about? There is a phrase I like to use to describe it: you have to explain a Mexican company that the world is larger than the neighborhood they live in. So during the induction week of the pre-acceleration they come to Silicon Valley and we bring in entrepreneurs, lawyers, and other people from this market to tell them about what it means to grow a global technology company. We create a shock! I like to say that we create a moment of crisis where a company realizes that selling outside their own neighborhood is very different and we give them the elements to do so.¹¹⁸

This view is shared by the TechBA consultants working with Mexican companies. When asked about the barriers that Mexican entrepreneurs face when entering the U.S. market, a TechBA consultant responds,

Well, I think it's very easy to tell the barriers, and it has nothing to do with the market or even with the U.S. itself. I think it's really how ambitious some of these people are. What I could say is, really, the only barrier is what they put themselves in their own minds or their focus in the market, period. It's nothing external. They put their own barriers. Because like any other business is going to take some time. Some take a little longer than others, to grow, but it can grow. You'll have some failures as well. But in my opinion, from what I've seen so far, I think is the hesitancy that I see on some of these people to get in the U.S. market. Whether they are afraid or whatever. They make their own barriers.¹¹⁹

Accordingly, the CEO of TechBA-Silicon Valley thinks that his role, and that of the program as a whole, is to take Mexican entrepreneurs out of their "comfort zone." For him, the problem is that most businessmen and entrepreneurs in Mexico only aspire to having a company that produces enough wealth to offer them a comfortable life. He elaborates,

We want to produce that change, from the entrepreneur that has a lifestyle company to one that has the ambition to grow a global company. And my position is very clear here, a Mexican company must be a global company from day one. Why? Many people tell me, I don't want to sell abroad. You should worry! Because even if you don't sell abroad foreign companies are coming to your territory and you have to compete with them. So, you better have that global vision.¹²⁰

The CEO of TechBA-Silicon Valley, as well as the consultants advising Mexican companies, makes frequent use of storytelling to exemplify the values they attempt to instill in Mexican entrepreneurs. One of the stories they commonly use to exemplify values like risk-taking, ambition, and determination is that of the Google founders, Larry Page and Sergei Brin, and how they grew their

¹¹⁸ Personal interview with the CEO of TechBA-Silicon Valley, March 2008.

¹¹⁹ Personal interview with a TechBA-Silicon Valley consultant, June 2010.

¹²⁰ Personal interview with the CEO of TechBA-Silicon Valley, March 2008.

company from an idea that started at Stanford to be one of the largest and most influential companies in the world. In one of my interviews with the CEO of TechBA-Silicon Valley he used that story when I questioned him if other structural factors were not responsible for hindering the participation of Mexican entrepreneurs in global markets, rather than their own mentality.

I don't buy it! And I am firm on this! It's a cultural problem. 15 years ago Page and Brin were two guys like you and me who were discussing an idea in a dorm-room and today they are worth \$13 billion. And they arrived late to the industry. Even worse, Yahoo already existed. In fact, the best thing that happened to them is that Yahoo disregarded them¹²¹. If Yahoo had been nice to them, Google would not exist today. Microsoft MSN was already in the market, Yahoo was the leader. And they (Page and Brin) got in and turned things around. Two young guys sitting at a desk, advised by a Mexican. Their advisor at Stanford was Hector Garcia Molina¹²², a Mexican. So I don't buy it! Those two guys had no money. Hector Garcia Molina gave them some money until he could. Then they went to Bechtolsheim, one of SUN's founders, who gave them \$100,000 and were able to get where they are today.

That is the cultural aspect I am talking about. That is the persistence, the drive! When you have the drive you don't desist just because the other one is bigger. No! (You say) How do I get in? That is where the entrepreneurial culture plays in.¹²³

Another example of the efforts of TechBA staff to transform the mentality of Mexican entrepreneurs can be found in a story shared by the CEO of TechBA-Silicon Valley in his personal blog, where he narrates a presentation he made to a group of Mexican businesspersons who visited Silicon Valley. This group was enrolled in an executive MBA at one of the leading business schools in Mexico and their visit to TechBA concluded a one-week stay where they took a short course at UC Berkeley and visited various companies in the region. The CEO of TechBA-Silicon Valley recalls this meeting,

I began my presentation with an informal conversation on the profile of companies like Apple that generate great value, which are the archetypical Silicon Valley companies. Apple has today an unbelievable growth thanks to products like the iPhone and the new iPad. With my conversation I wanted the audience to see the importance of creating companies that are not just a "modus vivendi", or companies with just enough cash flow to sustain their jobs but with slow growth. I wanted them to see the importance of creating companies that now have billions of dollars in savings to promote new projects but which only a few years ago started from an idea. I showed them that the common denominator of these companies is that they are led by

¹²¹ Page and Brin initially attempted to commercialize their technology through Stanford's Office of Technology Licensing, by selling their IP to Yahoo. But as Yahoo disregarded their technology they decided to start their own company to commercialize it.

¹²² Hector Garcia Molina, born in Monterrey, Nuevo Leon, Mexico, is a Professor in the Department of Computer Science and Electrical Engineering at Stanford University. During 1994-1998 he was the Principal Investigator for the Stanford Digital Library Project and the Google search engine emerged from that project.

¹²³ Personal interview with the CEO of TechBA-Silicon Valley, March 2008.

visionaries who have created new product or service categories that are highly scalable. By the end of the presentation, I thought about many actions that I need to implement in order to achieve my goal of stimulating participants in the TechBA program to create large companies that generate thousands of jobs and produce wealth.

The title of this blog entry is “Will we ever give us permission to succeed?”, and he concludes his post by saying,

These reflections just open the door for more discussion and analysis. I want to invite you to be critical in your way of acting, to evaluate what you have to do in order to achieve the success you are looking for, and to take the risk to transform the conditions surrounding you and improve your life.¹²⁴

In their attempts to develop the confidence of Mexican entrepreneurs and to instill a more ambitious mentality, TechBA staff and consultants frequently challenge entrepreneurs to question their own assumptions about their potential in global markets. At the end of the closing week of the pre-acceleration program 2009, one TechBA manager approached the whole audience and said the following:

The main goal of the entire TechBA program is to make your company sell in the U.S. The main goal of all the pre-acceleration, acceleration, and reloaded. At the beginning of the program I asked some companies how much they wanted to sell, and they said 40,000, 75,000. That is too comfortable! Go for the first million!

Congratulations to all of you, because you decided to be here today, and you are making history! Small businesses are the driver of the economy in our country. Unfortunately, most of these companies are competing for a small market. You are here for the big market!¹²⁵

Then, he explained how companies would be selected to go into the acceleration stage of the program and he said, “Some of you will be chosen to go to the acceleration program. Some of you won’t. But don’t let that stop you.” To that, an entrepreneur in the audience responded, “I am going to continue, whether you choose me or not for the acceleration process.”

Participating in TechBA also exposes Mexican entrepreneurs to new views and values through the interactions between “newcomers” and “old-timers” who act as role models. Each year, a new cohort of entrepreneurs joins the program and gets to interact with their peers from previous generations who are still involved with TechBA. These “old-timers” are entrepreneurs who went successfully through the first year of the program, commonly known as “commercial acceleration,” and are going through the stage known as “financial acceleration” or “reloaded,” seeking to raise investment or take the next step in expanding their companies to global markets. Having gone

¹²⁴ Personal blog of the CEO of TechBA-Silicon Valley, publicly available at <http://techbacrunch.com/crunch/%C2%BF-nos-daremos-algun-dia-el-permiso-de-triunfar>

¹²⁵ Personal notes, participant observation during the pre-acceleration program 2009 in TechBA Silicon Valley.

through the experience of taking their companies to a new market these experienced entrepreneurs can share their views and experiences with newcomers as they interact at TechBA's offices abroad.

In the case of TechBA-Silicon Valley, the staff fosters these interactions by inviting more experienced entrepreneurs to share their experiences through presentations and panel discussions at the induction week of the pre-acceleration stage of the program. One entrepreneur who is frequently used as a role model at the Silicon Valley office is Ralph Aceves, a Mexican-American who had over 20 years of experience managing high-tech companies in Silicon Valley by the time he joined the program with a new start-up. While Ralph did not follow the same path to global markets as the rest of the Mexican entrepreneurs, he embodies all the values that TechBA attempts to instill among participants in the program. His three previous start-ups had had successful exits, one IPO and two acquisitions, and he knows from experience the challenges involved in leading technology companies from start-up stage to exit.

Ralph has become a motivational speaker for the program and during his presentations he usually contrasts the values of the Mexican and Silicon Valley business culture, telling newcomers to forget the paternalistic style of doing business in Mexico, which puts a premium on personal and family relationships, political connections and drawn-out negotiations. Instead, he promotes values like self-determination, risk-taking, agility, and team-building.¹²⁶ Ralph is now leading a new start-up with the development team in Guadalajara, Mexico, and a small marketing and sales team in Silicon Valley. And while he has an impressive track record as serial entrepreneur, he is once again facing the challenges of growing a successful company in global markets. As such, he gets to interact with other Mexican entrepreneurs on equal footing, acting as a living testament of the potential of Mexican entrepreneurs in global markets.

My interviews with Mexican entrepreneurs revealed that participating in TechBA did have a transformational effect in their outlook and aspirations, helping them develop the conviction they can succeed in the most competitive global markets. The comments of a Mexican entrepreneur participating in the acceleration process during 2009 exemplify this change in mentality. When I asked him about how the TechBA program affected his decision to expand to global markets he responded:

I already had the intention of expanding my company to international markets. But I always thought about expanding to South America. When I met the CEO of TechBA-Silicon Valley he told me, forget about South America! You will spend the same time and effort in expanding to South America than to the U.S. And if you are struggling to grow your company in Mexico, in South America you'll have a harder time, they are very small (markets).

Intrigued by his response, I asked why he has thinking about expanding to South America. He replied:

¹²⁶ Personal notes, participant observation at TechBA-Silicon Valley, 2009-2011.

It was probably a question of confidence in my own company. As a Mexican you feel confident of going to a smaller market and being competitive there. I had done some projects in South America; they had looked for us to do some work there. But I always thought, if I go up there (to the U.S.) I am going to be very small, and they are going to crush me!

TechBA opens your eyes and infuses you with confidence, the confidence to know that it is possible. I mean, if you do certain things correctly and put all the pieces together there is no reason not to reach the U.S. market. And the size of the market is much more attractive. If I only get the .001% of the American market y can triple my sales in Mexico! Now, I still feel I have a long way to go, but now I feel is doable.

Finally, I asked him if he attributed that confidence to the TechBA program. The entrepreneur replied:

Yes, absolutely. The TechBA program opened my eyes. It confronted me with everything I am lacking and everything I still need to do. But it also made me realize everything I have. I realized there are many things I do very well. And there are many things I do as well as others in the U.S. I realized companies here have a lot of infrastructure, which I am lacking. But it also infuses you with confidence.¹²⁷

Despite their new outlook and aspirations, Mexican entrepreneurs still face many challenges to align the operation of their company with the values of the Silicon Valley business culture. The same entrepreneur commented about the difficulties in transforming the mentality of his employees in Mexico and the challenges to effectively compete in the U.S. market:

Now I have the challenge of changing the mental chip of my people in Mexico, to make them understand they are now competing in a much more demanding market. That is a big part of what I need to do back there. And that is a process that is going to come with a lot of pain. I am foreseeing that I will have to let go some of my people. Because I won't be able to wait for those who don't jump in the train to provide the level of service that the American market demands.

My fieldwork could not assess the overall impact of the TechBA program on the outlook and aspirations of all the Mexican entrepreneurs participating in the program. But my observations in the field clearly revealed that fostering values associated with high-impact entrepreneurs, like self-determination, risk-taking, agility, and team-building, is an important part of the activities undertaken by TechBA-Silicon Valley staff and consultants. Whether through story-telling, by directly confronting the assumptions of Mexican entrepreneurs, or by facilitating interactions with role models, the community of practitioners surrounding the TechBA program works actively to transform the views and values of Mexican entrepreneurs in line with those of the business community in target foreign markets.

¹²⁷ Personal interview with a Mexican entrepreneur participating in the TechBA program, August 2009.

5.4 Conclusion

The TechBA program is usually conceptualized as a support infrastructure guiding Mexican companies through a series of business-related activities conducive to their global expansion. Official documentation usually emphasize the firm-level processes and adaptations that Mexican companies face as they design and implement a global expansion strategy with the support of the TechBA program. TechBA's official website describes the acceleration stage of the program in the following way:

The Acceleration process lasts 8 to 10 months and consists of guidance for companies to move through the following phases in their internationalization process: Executing a Business Plan; Adapting the structure of the company to the new international strategy; Obtaining international certifications; Complying with migratory requirements; Protecting their intellectual property; Adapting the product/service to foreign market needs; Establishing connections with strategic international organizations; Implementing commercialization support mechanisms.¹²⁸

But my fieldwork revealed that parallel to the activities to support firm-level adaptations, TechBA facilitates a process of enculturation in which Mexican entrepreneurs develop the values and practices of a foreign business community. Through formal training, but primarily through numerous experience-based learning opportunities, Mexican entrepreneurs develop a new language and codes of communication, new *know-how* in the form of foreign business practices, new *know-who* or the knowledge to participate in professional networks in foreign markets, as well as new values and views in line with those of a foreign business community. My analysis of the TechBA program reveals that supporting the global expansion of innovative companies involves a transformation in the views and practices of the entrepreneurs leading the global expansion effort as much as it involves adaptations in the strategy, structure, and organization of a firm.

Participating in the TechBA program enables Mexican entrepreneurs to learn in practice from a variety of situations and actors, including formal lectures and workshops, interaction with TechBA consultants and service providers, interaction with other TechBA entrepreneurs, from local actors at networking events and conferences, and ultimately from customers, partners, and investors. As communities of practice scholars assert, "learners can in one way or another be seen to construct their understanding out of a wide range of materials that include ambient social and physical circumstances and the histories and social relations of the people involved" (Brown and Duguid 1991). In that sense, the TechBA community of practice works as a "living curriculum" (Wenger 2006) for Mexican entrepreneurs going through a learning process conducive to the global expansion of their companies.

Using the communities of practice framework to analyze the TechBA program we can also see that the acquisition of knowledge goes hand-in-hand with the development of an identity as a member of

¹²⁸ TechBA's official website, <http://www.techba.org/>, accessed on May 26, 2011.

a sustained community of practice. As Brown and Duguid (2001) put it, learning does not just involve the acquisition of facts about the world, it also involves acquiring the ability to act in the world in socially recognized ways. Learning, Brown and Duguid contend, involves acquiring identities that reflect both how a learner sees the world and how the world sees the learner. As Mexican entrepreneurs develop a new language and codes of communication, new *know-how* and *know-who*, as well as new values and views, they acquire the ability to interact with local actors in foreign regions as “insiders” and be recognized as legitimate members of their business community. In that way, TechBA provides a social context for learning and identity formation whereby Mexican entrepreneurs not only gather facts about new markets, business practices, codes of communication, etc., but learn *how to be* a global entrepreneur.

And in line with the communities of practice literature, my analysis revealed that TechBA-Silicon Valley facilitates this process of learning and identity formation through what scholars call a process of “legitimate peripheral participation.” Through the TechBA program, Mexican entrepreneurs gain access to the periphery of the Silicon Valley business community and gradually move to more central roles as their knowledge and expertise develops. This social process of increasingly centripetal participation initiates when Mexican entrepreneurs join the program and begin interacting with TechBA staff and consultants, who are themselves part of the Silicon Valley business community. With long operational experience in the Silicon Valley region, consultants can share with Mexican entrepreneurs their knowledge of local codes of communication and business practices, mobilize their professional networks in support of their global expansion efforts, and expose them to the views and values of the Silicon Valley business community. Mexican entrepreneurs then move gradually into more central roles in that business community as they interact first with specialized service providers, friendly customers, investors and other Silicon Valley actors who are closely related to the TechBA community of practice. And as their knowledge, skills, practices, contacts, and views develop, they can interact directly with the rest of the Silicon Valley community as they search for customers, partners or investors to support their global expansion strategy.

In this way, the TechBA community of practice can be understood as a mechanism to facilitate effective interactions between Mexican entrepreneurs and actors in global markets. Rather than simply bridging the geographical distance to markets, the cross-national community of practice built around the TechBA program provides the social context for developing the knowledge, skills, practices, and views that are time- and context-specific and difficult to transmit over long distances. As argued by innovation scholars, the TechBA-Silicon Valley case shows that the knowledge and skills necessary to sustain effective interactions among innovating actors can only be acquired through practical experience in the relevant context, i.e. ‘learning-by-doing’ (Lundvall and Johnson 1994; Jensen et al. 2007). My analysis reinforces what Nonaka observed (1994: 21-22), the ‘variety’ of experience and the individual’s involvement in the ‘context’ are critical factors determining the generation and accumulation of such knowledge and skills.

However, the TechBA-Silicon Valley case challenges the extant academic literature in three significant ways. First, it challenges common notions that *equate* context with a particular place. While innovation processes are certainly influenced by the particular institutional arrangements and culture of specific places, scholars have too easily assumed that the relevant context enabling collective learning processes is bounded to a specific place or region. That has led scholars to overemphasize the importance of clustering and the region as the appropriate unit of analysis when analyzing collective innovation processes, overlooking the importance of cross-regional interactions (Asheim 1996; Asheim 2001; Florida 1995; Cooke and Morgan 1998; Braczyk, Cooke, and Heidenreich 1998; Philip Cooke, Heidenreich, and Braczyk 2004). The TechBA-Silicon Valley case points at the importance of differentiating between the *social* and the *physical* context when analyzing collective innovation processes. While physical proximity resulted crucial for Mexican entrepreneurs to develop the knowledge, skills, practices and views enabling effective interactions with Silicon Valley actors, my analysis also demonstrates that the TechBA community of practice was able to extend the social context for learning beyond the Silicon Valley region. Acting as a broker among various communities of practice, TechBA effectively extended the social context for learning to include actors in distant locations. With the aid of TechBA staff and consultants in Silicon Valley, as well as through numerous formal and informal collaborations with Silicon Valley actors, Mexican entrepreneurs can travel back and forth between Silicon Valley and their home location in Mexico while designing and implementing their global expansion strategy.

Second, it challenges the notion that communities of practice can *mobilize* tacit knowledge across long distances. In defying the idea that geographical proximity is key to the generation and transmission of tacit knowledge, some scholars have turned overly optimistic about the potential of communities of practice for mobilizing tacit knowledge among actors located in distant locations. According to these scholars, organizational or relational proximity and occupational similarity are more important than geographical proximity in supporting the production, identification, appropriation and flow of tacit knowledge (Allen 2000; Amin 2000; Amin and Cohendet 2004). Some communities of practice scholars also assert that tacit knowledge may flow across regional and national boundaries if organizational or ‘virtual community’ proximity is strong enough – a phenomenon that Bunnell and Coe (2001) refer to as the ‘de-territorialization of closeness’. In other words, learning (and the sharing of tacit knowledge) need not be subject to the ‘friction of distance’ if relational proximity is present. As stated by Amin (2000, p. 14):

Is it not relational proximity – more specifically, ongoing organizational routines and the social practices of collectives implicated in a common venture – rather than geographical proximity, that constitutes the ‘soft’ architecture of learning? Such relational proximity might, of course, draw on face-to-face contact, but it can also be achieved at a distance (isn’t this what the communications revolution and global business travel are all about?). More importantly, relational proximity does not in any way implicate, a priori, local clustering or any of the other properties of place that economic geographers and geographical economists have come to stress in recent years.

But my analysis suggests that organizational proximity does not completely overturn the need for face-to-face interactions. The fact that the TechBA program has established a physical presence in distant regions and facilitates a learning process involving experienced-based activities in direct interaction with foreign actors suggests that geographical proximity is a crucial component in generating the knowledge supporting global innovation processes. Knowledge per se is not *mobilized* across long distances. My analysis suggests that what communities of practice can do is to enable learning processes among actors located in distant regions and facilitate access to highly localized knowledge.

And third, my analysis of TechBA-Silicon Valley reveals a contrasting model to the one exposed in the literature on Diasporas of skilled immigrants for the establishment of cross-regional collaborations between Silicon Valley and peripheral technology regions around the world. The work of Saxenian (2006) and others (Kuznetsov 2006; Kuznetsov and Sabel 2006) has shown how skilled immigrants from China, India, Taiwan, and Israel were able to establish a two-way flow of skills, technology, and capital between Silicon Valley and their home countries only after studying and working for an extended period of time in the U.S. In this model, long exposure to actors and organizations in Silicon Valley was needed to develop the cultural and institutional know-how, as well as the professional networks, required to navigate the complexities of establishing technology ventures far from established centers of skill and technology. But the TechBA-Silicon Valley case demonstrates that institutional interventions sustaining cross-national communities of practice are an alternative model to develop the knowledge, skills, practices and views required to sustain a two-way flow of skills, technology, and capital between Silicon Valley and peripheral technology regions around the world. This is not to say that all the entrepreneurs participating in the TechBA program were able to initiate a two-way flow of skills, technology, and capital between Silicon Valley and their home region. With my analysis of the TechBA program I simply want to point out that an alternative model has emerged for sustaining a learning process conducive to such a flow, one that was assumed to result from a long, organic, and informal social process and therefore difficult to replicate.

6. Conclusion

This dissertation is the result of exploratory and explanatory research conducted to understand a new phenomenon: a new set of policy instruments that various national and regional governments began implementing in the early 2000s to support the global expansion of their innovative home-grown firms. These policy instruments, which in this dissertation are called Global Innovation Bridges (GIBs), have been completely ignored in the academic literature and are commonly confused by both scholars and policy makers with other initiatives such as business incubators, diaspora organizations or traditional export promotion programs. Accordingly, the goal of this project is to expand our knowledge of this novel policy instrument and contribute to the literature on international entrepreneurship and entrepreneurship policies.

Simply stated, this dissertation achieves two complementary objectives. First, it develops a basic characterization of GIBs, describing their goals as well as their main functional and organizational features. This characterization provides a framework to contrast GIBs against similar initiatives supporting global entrepreneurship, identifying them as a new and distinct policy instrument. Second, it provides an explanation of how GIBs work, revealing the complexity of interactions involved in their operations and the diversity of actors supporting their mission. In doing so, it uncovers the learning processes involved in turning home-grown innovative companies into global players.

In this concluding chapter, I first introduce the main findings of the research. Then I discuss the academic contribution of this work as well as the implications for policy makers and for future research.

6.1. Research findings

Chapter 3 of this dissertation presents the results of a multiple-case study of six GIBs with operations in Silicon Valley, California. In this chapter I showed how GIBs result from recent efforts from national and regional governments seeking to create economic development opportunities by supporting the global expansion of home-grown innovative firms. The premise behind these efforts is that helping innovative companies reach larger markets abroad will accelerate their growth, generating income and jobs in their home location. But in addition to a quantitative increase in economic activity, governments are using GIBs in an attempt to foster a transition towards high-growth, high value-added economic activities.

GIBs represent a drastic departure from previous policies to promote economic and technological development by creating a favorable environment and providing incentives to attract foreign companies. For the first time, governments are playing a very active role in supporting the global expansion of small and medium innovative companies through a comprehensive business support structure. But GIBs also introduce a novel spatial approach to supporting global entrepreneurship. With a presence in the most dynamic regions of technological innovation around the world, as well

as with deep ties with organizations in their home country, GIBs have effectively established a cross-national business support structure with the capacity to mobilize knowledge, talent, technology and capital across borders.

GIBs work with entrepreneurs throughout the whole process of defining and implementing a global expansion strategy. They play an important role in incentivizing entrepreneurs to explore foreign markets and in creating awareness of business opportunities abroad. They prepare entrepreneurs to operate in a new business environment and help them define and validate a value proposition as they go through the process of interacting with potential customers to understand their particular needs. GIBs also establish contacts between entrepreneurs and key actors in global markets involved in all the legal, technological, commercial, and financial aspects of introducing new products and services abroad. In supporting client companies GIBs work closely with individuals based in target foreign regions who have deep knowledge of a particular industry sector, extensive operational experience in the local context, and a large network of contacts. Working as consultants and mentors, these individuals are able to guide entrepreneurs through the process of identifying and accessing potential customers, partners, or investors. In sum, GIBs' approach to supporting global entrepreneurship is by facilitating the full immersion of an entrepreneur in a foreign region. My analysis also showed that GIBs can be constituted through a variety of organizational configurations, often involving public-private partnerships between organizations in different countries. Rather than conceptualizing these initiatives as a single government program or a specific organization, with my analysis I argue that GIBs should be understood as a new function performed by some national and regional governments to support global innovation processes. The taxonomy developed in chapter 3 helps us differentiate the function of a Global Innovation Bridge from other functions that organizations supporting the global expansion of firms can perform. By distinguishing among the functions of Global Innovation Gateways, Springboards, Magnets, and Bridges, we can clearly differentiate among organizations that otherwise would seem to perform the same role. This taxonomy allows us to distinguish an organization performing the role of a Global Innovation Bridge from a local business incubator acting as a Global Innovation Gateway or Springboard. It also allows us to distinguish GIBs from organizations not providing structured business support services like the numerous foreign diaspora networks.

In pursuing their mission, GIBs have established strategic alliances in foreign regions with universities, business incubators, and other organizations that provide GIB managers with operational support. Official documentation usually extols those formal partnerships when describing the work performed by GIBs. But as discussed in chapter 4, this way of conceptualizing GIBs misses both the diversity of actors surrounding their operations and the nature of the relationships among them. My in-depth analysis of the Mexican GIB, the Technology Business Accelerator (TechBA) program, revealed that a key asset in supporting the global expansion of client firms is the numerous informal collaborations that GIBs sustain with a wide universe of individuals across various organizations and locations. GIBs have developed the local knowledge and the

contacts in foreign regions to rapidly connect client companies with potential customers, partners, specialized service providers, investors, and other actors who play a key role in defining and implementing a global expansion strategy. These collaborations are often informal, not mediated by a contract or official agreement at the level of the organization. What binds together the different actors surrounding the TechBA program are not formal alliances, but shared interests and a practice aimed at developing a joint enterprise.

In that sense, The TechBA program articulates a ‘community of practice’, or a group of individuals who engage with each other in order to develop a joint enterprise and who develop a repertoire of resources to sustain their practice (Wenger 1998). As I argue in chapter 4, the TechBA community of practice involves individuals in various organizations linked together by a common goal: supporting the global expansion of Mexican companies. These are individuals whose work is related to the many technological, commercial, financial, and legal aspects that enable a company to introduce innovative products and services to global markets. And while all these individuals work for organizations that have their own agendas and goals, they all contribute in one way or another to advancing the mission of the TechBA program. Furthermore, the community of practice surrounding the TechBA program transcends national borders, constituting what scholars call a ‘distributed community of practice’ (Hildreth et al., 2000). Through partnerships and collaborations with actors in both Mexico and in foreign markets, TechBA articulates a community of practice that operates across distant regions in different countries. In this community, the staff and consultants more closely involved in the operation of the TechBA program serve as a “brokers,” mediating among various technical and business communities in distant regions (Wenger 2000).

All of the above reveals the inadequacy of using the organization as the unit of analysis to understand the workings of GIBs. Conceptualizing GIBs as a series of formal strategic alliances between various organizations in different regions around the world conceals the complexity and diversity of the interactions among all actors surrounding their operations. Applying the communities of practice framework to the analysis of the TechBA program, I argue that GIBs should be understood as dynamic and organic entities that involve individuals located at various organizations, in various locations, and whose size and form is dictated only by the practice of its members itself. Rather than a government initiative with a fixed set of formal alliances with other organizations, the communities of practice framework reveals each GIB as a wide community that is always in flux.

Having explained in chapter 4 how TechBA articulates a cross-national community of practice, chapter 5 turns at the learning processes involved in helping home-grown innovative firms become global players. My analysis of the TechBA program reveals that supporting the global expansion of innovative companies involves a transformation in the views and practices of the entrepreneurs leading the global expansion effort as much as it involves adaptations in the strategy, structure, and organization of a firm. My fieldwork revealed that parallel to the activities to support firm-level

adaptations, like establishing a foreign subsidiary or developing new sales or customer service capabilities, TechBA facilitates a process of enculturation in which Mexican entrepreneurs develop the values and practices of a foreign business community. Through formal training, but primarily through numerous experience-based learning opportunities, Mexican entrepreneurs develop a new language and codes of communication, new *know-how* in the form of foreign business practices, new *know-who* or the knowledge to participate in professional networks in foreign markets, as well as new values and views in line with those of a foreign business community.

Applying concepts of the communities of practice framework to analyze the TechBA program chapter 5 shows how the acquisition of knowledge goes hand-in-hand with the development of an identity as a member of a sustained community of practice. As Brown and Duguid (2001) put it, learning does not just involve the acquisition of facts about the world, it also involves acquiring the ability to act in the world in socially recognized ways. As Mexican entrepreneurs develop a new language and codes of communication, new *know-how* and *know-who*, as well as new values and views, they acquire the ability to interact with local actors in foreign regions as “insiders” and be recognized as legitimate members of their business community.

And in line with the communities of practice literature, my analysis revealed that TechBA facilitates this process of learning and identity formation through what scholars call a process of “legitimate peripheral participation” (Lave and Wenger 1991; Brown and Duguid 1991; Wenger 1998). Analyzing the dynamics around its Silicon Valley office, chapter 5 showed how the TechBA program provides Mexican entrepreneurs access to the periphery of the Silicon Valley business community and sustains a process through which they gradually move to more central roles as their knowledge and expertise develops. This social process of increasingly centripetal participation initiates when Mexican entrepreneurs join the program and begin interacting with TechBA staff and consultants, who are themselves part of the Silicon Valley business community. With long operational experience in the Silicon Valley region, consultants can share with Mexican entrepreneurs their knowledge of local codes of communication and business practices, mobilize their professional networks in support of their global expansion efforts, and expose them to the views and values of the Silicon Valley business community. Mexican entrepreneurs then move gradually into more central roles in that business community as they interact with specialized service providers, friendly customers, investors and other Silicon Valley actors who are closely related to the TechBA community of practice. And as their knowledge, skills, practices, contacts, and views develop, they can interact directly with the rest of the Silicon Valley community as they search for customers, partners or investors to support their global expansion strategy.

In this way, the TechBA community of practice can be understood as a mechanism to facilitate effective interactions between Mexican entrepreneurs and actors in global markets. Rather than simply bridging the geographical distance to markets, the cross-national community of practice built around the TechBA program provides the social context for developing the knowledge, skills,

practices, and views that are time- and context-specific and difficult to transmit over long distances. As argued by innovation scholars, the TechBA case shows that the knowledge and skills necessary to sustain effective interactions among innovating actors can only be acquired through practical experience in the relevant context, i.e. 'learning-by-doing' (Lundvall and Johnson 1994; Jensen et al. 2007). In sum, TechBA serves as a "living curriculum" (Wenger 2006). The community of practice surrounding the TechBA program provides a social context for learning and identity formation whereby Mexican entrepreneurs not only gather facts about new markets, business practices, or codes of communication, but also learn *how to be* a global entrepreneur.

6.2. Academic and policy implications

6.2.1. Academic implications

My research contributes to the academic literature in four main ways. First, it brings to light an emerging policy instrument to support global entrepreneurship that up to now has been completely overlooked by both international entrepreneurship and entrepreneurship policy scholars. My dissertation is the first academic work to provide a basic characterization of GIBs and to develop a taxonomy that clearly differentiates these initiatives from other organizations performing similar roles. This characterization is still basic and more work is needed to further understand similarities and differences among the variety of GIBs that are currently operating around the world. But revealing the emergence of GIBs my dissertation provides a foundation for future academic work on the topic.

Second, my exposition of GIBs also challenges some basic assumptions of entrepreneurship scholars and point at new directions for the field. As discussed in the literature review presented in chapter 3, most scholars today assume that entrepreneurship policy should be aimed at individual entrepreneurs and its goal should be to encourage new firm formation. Policies aimed at existing firms are simply dismissed as part of old school SME policies and studies have omitted them completely. But GIBs point at the limitations of this conceptual scheme as they target existing companies and still are focused on supporting global entrepreneurship. The current understanding that scholars have of entrepreneurship policies ignores that much innovation can take place within existing firms and entrepreneurship can also mean launching new projects in new markets. GIBs are a reminder that scholars looking at entrepreneurship policies need to expand their analysis to understand the new roles that governments are adopting to promote entrepreneurship in existing companies.

A third academic contribution of my research is related to the literature on communities of practice. In particular, my research contributes to our understanding of "distributed" communities of practice, or communities operating across long distances. Recently, scholars have expressed optimism about the potential of such communities for mobilizing 'sticky' knowledge, or knowledge with a high tacit component that is difficult to codify and therefore to transmit over long distances.

Some scholars hold that organizational or relational proximity and occupational similarity are more important than geographical proximity in supporting the production, identification, appropriation and flow of tacit knowledge (Allen 2000; A Amin 2000; A Amin and Cohendet 2004). Accordingly, scholars hold that tacit knowledge may flow across regional and national boundaries if organizational or “virtual community” proximity is strong enough (Ash Amin and Roberts 2008; Hibbert and Rich 2006; Hildreth, Kimble, and Wright 2000). In other words, learning (and the sharing of tacit knowledge) need not be spatially constrained if relational proximity is present. But despite the optimism, there is a lack of empirical studies that show how such distributed communities of practice actually work. My dissertation fills that gap in the literature by showing how the TechBA community of practice mobilizes individuals across different organizations and locations in support of the global expansion of Mexican companies. This is the first detailed analysis of a distributed community of practice in the regional economic development field.

When it comes to the question of mobilizing ‘sticky’ knowledge across distant locations, my analysis of the TechBA community of practice reveals a more complex picture than the one currently held by scholars. The experience of the TechBA community of practice suggests that organizational proximity does not completely overturn the need for face-to-face interactions. The fact that the TechBA program has established a physical presence in distant regions and facilitates a learning process involving experienced-based activities in direct interaction with foreign actors suggests that geographical proximity is a crucial component in generating the knowledge supporting global innovation processes. Knowledge per se is not simply *mobilized* across long distances. My analysis suggests that what communities of practice can do is sustain a learning process among distant actors that still involves highly localized knowledge. What the TechBA community of practice does is to provide a social context where Mexican entrepreneurs can develop the knowledge, skills, practices, and views required to interact effectively with distant actors.

However, the TechBA case also challenges common notions that *equate* context with a particular place. While innovation processes are certainly influenced by the particular institutional arrangements and culture of specific places, scholars have too easily assumed that the relevant context enabling collective learning processes is bounded to a specific place or region. That has lead scholars to overemphasize the importance of clustering and the region as the appropriate unit of analysis when analyzing collective innovation processes, overlooking the importance of cross-regional interactions (Asheim 1996; Asheim 2001; Florida 1995; Cooke and Morgan 1998; Braczyk, Cooke, and Heidenreich 1998; Philip Cooke, Heidenreich, and Braczyk 2004). My analysis of the dynamics around TechBA-Silicon Valley points at the importance of differentiating between the *social* and the *physical* context when analyzing collective innovation processes. While physical proximity resulted crucial for Mexican entrepreneurs to develop the knowledge, skills, practices and views enabling effective interactions with Silicon Valley actors, my analysis also demonstrates that the TechBA community of practice was able to extend the social context for learning beyond the Silicon Valley region. Acting as a broker among various communities of practice, TechBA effectively

extended the social context for learning to include actors in distant locations. With the aid of TechBA staff and consultants in Silicon Valley, as well as through numerous formal and informal collaborations with Silicon Valley actors, Mexican entrepreneurs can travel back and forth between Silicon Valley and their home location in Mexico while designing and implementing their global expansion strategy.

A fourth and final contribution of my work results from linking my analysis of the TechBA community of practice to the literature on innovation systems. When applied to the analysis of global innovation processes, the communities of practice framework allow us to break away from spatial units of analysis, so prevalent in innovation studies. Since the concept of innovation systems was introduced to understand the interactive and collective character of innovation processes, the literature has been caught in spatial units of analysis at either the national (B.-Å. Lundvall 1992; Nelson 1993) or regional levels (Braczyk, Cooke, and Heidenreich 1998; Philip Cooke, Heidenreich, and Braczyk 2004). Scholars have already pointed at the limitations of work which focuses on particular scales as the locus for innovation (see for instance, Bunnell and Coe 2001). But while scholars have argued for the need to look at relationships operating between and across different scales, up to date there is no coherent framework to help us understand relationships at different scales and locations while still maintaining a focus on innovation as a collective and interactive process. By conceptualizing the TechBA program and all the actors surrounding it as a community of practice we can see that global innovation processes involve interactions with actors both in proximate and distant locations. At the same time, the case of the TechBA community of practice suggests that “brokers” or intermediate organizations can play an important role in fostering interactions at different scales, expanding the reach of innovation systems to include actors at all the regional, national, and global levels.

6.2.2. Policy implications

By bringing to light GIBs as a new policy instrument to support global innovation processes my work seeks to inform the work of policymakers from countries without such initiatives who might be looking for new ways to strengthen their innovation systems. In particular, my analysis of GIBs reveals a contrasting model to current ‘diaspora strategies’ that recently have captured the attention of policy makers and international development organizations alike (see for instance, Aikins, Sands, and White 2009). These government initiatives attempt to tap on the knowledge, skills, and connections of their skilled diaspora in order to turn a ‘brain drain’ into a ‘brain gain’ or ‘brain circulation’ and trigger new technology ventures at home. Diaspora strategies follow the work of Saxenian (2006) and others (Kuznetsov 2006; Kuznetsov and Sabel 2006) who have documented the successful experiences of skilled immigrants from China, India, Taiwan, and Israel in establishing cross-regional collaborations between their home countries and Silicon Valley and other key regions of technological innovation around the world. These communities of skilled immigrants, or new Argonauts as Saxenian calls them, were able to navigate the complexities of establishing technology ventures far from established centers of skill and technology thanks to the cultural and institutional

know-how they developed by studying at top American universities and working in technology companies in Silicon Valley and related American technology centers.

However, current institutional interventions to replicate the experiences of countries like China, India, Taiwan, and Israel ignore the fact that those successes were the result of a long, organic and largely informal process with little or no intervention from governments. Saxenian argues that this was a bottom-up, informal process that could not have been promoted from the top. She suggests that the best governments can do is to invest in higher education, R&D, and infrastructure at home, as well as to adapt the local institutional environment to lure skilled migrant entrepreneurs back to their countries of origin, bringing with them the know-how and connections required to initiate new cross-regional collaborations. But as pointed as Cervantes and Guellec (2002), the reality is that only a handful of countries have been successful in luring their talented émigrés back home. Furthermore, this model is of limited application for countries that lack a large and cohesive diaspora of skilled individuals connected to the main centers of technological innovation around the world.

The case of the TechBA program of the Mexican Government demonstrates that institutional interventions sustaining cross-national communities of practice are an alternative model to develop the knowledge, skills, practices and views required to sustain long-distance collaborations between Silicon Valley and peripheral technology regions around the world. Rather than attempting to initiate a ‘brain circulation’, countries and regions promoting GIBs have established global flows of knowledge, talent, technology and capital by helping their home-grown innovative companies get ‘plugged into’ major technology centers around the world. This is not to say that all of GIBs’ client companies are able to sustain effective collaborations with actors in the global technology markets. But GIBs reveal an alternative model for sustaining the learning processes conducive to such a global flow, opening a new mechanism for policymakers looking to expand the reach of their local innovation system.

The findings of this dissertation also have implications for policymakers in countries that have already implemented a GIB. To this date, the number of GIBs continues to grow. Since finishing my fieldwork more governments have implemented initiatives to support the global expansion of their home-grown innovative companies. One of the latest programs to launch was the Spain Tech Center (STC) that started operations in Silicon Valley in early 2012. The growing number of GIBs suggests that governments hold a positive view of these instruments. But are GIBs an effective tool to support the global expansion of innovative companies? And more importantly, are GIBs an effective instrument to create economic development opportunities in the countries and regions supporting these initiatives?

This dissertation did not have the goal of assessing the performance of GIBs and I intentionally avoided an evaluative perspective to the study of GIBs. Given the novelty of these instruments, I

considered more valuable to produce work that would allow us to understand the complexity of GIBs before attempting to assess their performance. However, the question of how to evaluate GIBs is becoming critical. Some of these initiatives have now been operating for several years and government officials are feeling the pressure to demonstrate the social and economic returns of the resources invested. Accordingly, the question of which indicators to use when assessing the performance of GIBs is a topic of frequent discussion among GIB managers and government officials. My fieldwork identified two main indicators that are frequently used to assess the economic impact of GIBs: increase in sales in foreign markets and number of jobs created at home. But government officials have been having a hard time justifying the resources invested using those two indicators. The question of how best to evaluate GIBs is still unresolved.

Even when this dissertation does not aim at evaluating GIBs, its findings can be valuable when conducting such assessment. One contribution that could be particularly relevant when designing an evaluation is the idea that becoming a global player is the result of a learning and capability building *process*. Current evaluation efforts that focus exclusively on successful outcomes, in the form of increased sales in foreign markets and jobs created in the home country, miss the point that one of the most valuable contributions of GIBs is to reduce the social and private costs of failed ventures. Innovation is an extremely uncertain process and it is widely recognized that failure rates for new ventures are very high. Venture capitalists in Silicon Valley, for instance, frequently mention that only about 10% of new ventures have successful exits. With that in mind, the key question when evaluating the performance of GIBs should not only be how many client companies succeed in entering a new market, but how efficiently a client company can navigate the uncertain process of gaining access to a new market, when compared to no public intervention. Certainly policymakers should aim at increasing the success rates of client companies. But if a GIB reduces the private and social costs associated with initiating a new global venture, the investment could be justified, even for those companies that fail. But assessing how efficiently a GIB handles the global expansion of innovative companies requires an evaluation that places the focus of analysis on the process, not the outcomes.

By bringing to light the learning and capability building processes involved in turning a local company into a global player this dissertation provides some elements to guide evaluators. As presented in this dissertation, transforming the views and practices of the entrepreneurs leading the global expansion effort is as important as the adaptations in the strategy, structure, and organization of client companies. Accordingly, evaluation efforts should also assess how efficiently a GIB facilitates that learning process at the level of individual entrepreneurs. One way of conducting such an assessment is by focusing in the four aspects discussed in chapter 5 that are involved in becoming a global entrepreneur: 1) developing a new language and codes of communication; 2) developing new *know-how* in the form of foreign business practices; 3) developing new *know-who* or the knowledge to participate in professional networks in foreign markets; and, 4) developing new values and views in line with those of a foreign business community. Following the development of

entrepreneurs along these four aspects would provide GIB managers with early signals to adjust the support offered and make more efficient use of resources throughout the whole process.

But the same way that evaluations would be enhanced by shifting their focus from firms' outcomes to individuals' development, they would also gain from assessing the role of GIB managers in articulating and nurturing the whole community of practice that sustains the global expansion of companies. As the analysis of the TechBA case shows, it is the whole community of practice surrounding the operations of a GIB that provides the social context for entrepreneurs' learning and identity formation. However, GIB managers do not conceptualize their organizations as articulators of a wide community of practice. Official documentation emphasize the formal partnerships that GIBs have established with other organizations abroad and completely overlook the numerous informal collaborations that support entrepreneurs as they implement their global expansion strategy. At the same time, we cannot assume that all communities of practice work optimally. Actors involved might not provide adequate support or key actors might be missing. As shown in the TechBA case, GIB managers can play the role of 'brokers,' enabling interactions among members of distant communities of practice. GIB managers can also fail at bringing together relevant actors as the needs of client companies evolve. How to assess the performance of a community of practice is still an open question. But placing the focus of analysis on all the individuals contributing to the global expansion of innovative companies, this dissertation helps us shift away from current evaluation approaches that focus exclusively on the outcomes of client companies. By outlining the dynamics involved in a cross-national community of practice supporting the global expansion of innovative firms this dissertation provides a foundation to design an evaluation of GIBs that accounts for the performance of the community as a whole.

6.3. Recommendations for future research

By uncovering GIBs, my dissertation provides a foundation to further explore these novel policy instruments as well as their impact in the countries promoting them. But the work presented here is still elementary and much work is needed to fully understand the dynamics and effects of GIBs. One way of moving forward in this task would be to extend the multiple case-study developed here to include initiatives from other countries. Only by contrasting a larger number of these initiatives will their differences become evident and the initial characterization presented in chapter 3 could be refined. This comparison would also benefit from contrasting GIBs to similar initiatives supporting global entrepreneurship. This would put to test the 4-way typology developed in chapter 3, adding strength and analytical power.

While expanding the breadth of the analysis, future research should also add depth to our understanding of GIBs. More detailed studies of GIBs are needed to contrast the TechBA case presented in this dissertation. This would help not only to expand our understanding of GIBs, but also to sharpen the communities of practice framework. GIBs offer a great opportunity to explore collective learning processes among individuals located in distant locations. Adding more in-depth

studies of GIBs would allow us to understand how different organizational arrangements enable these distributed learning processes. Do other GIBs sustain a cross-national community of practice as the TechBA program does? Do they work as a unified community of practice across borders or, as in the case of TechBA, they operate as a collection of various communities with GIB managers acting as brokers, mediating among actors located in distant regions? What are the mechanisms through which these communities enable a process of learning and identity formation in order to enable foreign entrepreneurs act as insiders in a foreign community? As mentioned earlier, we cannot assume that all communities of practice work optimally and we need more work to understand when they might enable learning and collective development and when they might hinder it.

There are two key aspects of GIBs that would greatly benefit from further research. The first relates to assessing their performance while the second to understanding their social and economic impacts in the countries and regions promoting them. As mentioned in the discussion of policy implications above, governments are facing increasing pressure to justify the resources invested in GIBs to support the global expansion of innovative companies. Current evaluation efforts are too narrowly focused on the outcomes of GIBs, in terms of sales of client companies in foreign markets and number of jobs created at home. But as discussed above, there is a need to assess the efficiency with which GIBs help client companies navigate the uncertain process of gaining access to foreign markets. My research provides a framework to understand the learning and capability building processes involved in turning a local company into a global player. But more research is needed to assess the efficiency with which GIBs facilitate that process and to develop indicators to monitor client company's development.

There is also a great need to understand how GIBs affect the social and economic dynamics in the regions where client companies are located. GIBs are based on the premise that helping innovative companies reach global markets will not only create jobs and generate income for the sending regions, but would also foster a transition towards high value-added economic activities. But there is a risk that GIBs might contribute to the outflow of talent, technology, and capital from peripheral regions, hampering their economic and social development. Based on the research I conducted, there are two key challenges when assessing the impacts of GIBs. First, is to account for the long-term effects that firms participating in a GIB might have in their home region. My research showed that participation in a GIB produces a transformation not only in the views and attitudes of the entrepreneurs leading the global expansion effort, but in the dynamics of the company as a whole. And while not all client companies might be able to introduce their products and services to foreign markets, and therefore create immediate income and jobs in their home location, their participation in a GIB might produce some positive effects that are only visible in the medium or long term. A second related challenge is to account for the qualitative effects that GIBs might have in the economic and social dynamics of the countries and regions promoting them. Current quantitative indicators cannot capture much of the value created by these organizations. And while we need

more research leading to more accurate quantitative indicators, we also need creative work to devise new ways of identifying and assessing the qualitative effects of GIBs. Only by understanding the qualitative transformations produced by GIBs, as well as their long-term effects, will we be able to assess the developmental power of these policy instruments for peripheral regions.

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