

# **Building an Entrepreneurial Culture in Mexico**

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# **Building an Entrepreneurial Culture in Mexico**

## **Executive Summary: Observations and Recommendations**

### **Summary of Recommendations**

This subsection contains a summary of overriding principles on which our recommendations are based and a summary of the recommendations. The principles are elaborated in Section I of the report, and the recommendations are elaborated in Section IV. The recommendations are based on our review of current practice and our inventory of Mexico, as summarized below, and elaborated in Sections II and III.

### **Overarching Principles**

Our recommendations for building an entrepreneurial culture in Mexico are developed in the context of the following principles:

1. Entrepreneurship should not be pursued for its own sake. Rather, the reason to foster entrepreneurship in Mexico is to enhance the economic growth of the Mexican economy and the standard of living of people in Mexico.
2. Efforts to foster entrepreneurship should be designed around the principle of helping entrepreneurs and investors to identify, assess, and pursue opportunities and around creating opportunities. Entrepreneurs and investors should not be enticed into acting by creation of overly optimistic expectations for success.
3. Pursuing initiatives that reduce risk and increase expected returns of entrepreneurs and investors can increase entrepreneurial activity.
4. Creating infrastructure that enables entrepreneurs and investors to identify opportunities and better assess risks and expected returns can increase entrepreneurial activity.
5. Successful efforts and initiatives to foster high-value-added entrepreneurship must be based on achievable competitive advantage.
6. Successful and economically significant efforts to foster high-value-added entrepreneurship must be broad-based, rather than focused narrowly on high technology.
7. To be effective, efforts to foster high-value-added entrepreneurship must address both entrepreneurs and investors.

## Summary of Recommendations

In the context of the above principles, our recommendations for fostering the entrepreneurial culture of Mexico are classified under nine broad headings, each of which is supported in Section IV with a brief statement of the rationale and a set of more specific recommendations for implementation. The following are the broad recommendations:

1. Efforts to foster entrepreneurship in Mexico should be refocused more on high-value-added growth opportunities of existing SMEs and less on encouraging formation of new start-up businesses.
2. Efforts to foster entrepreneurship of high-value-added start-ups should be refocused more on non-high-technology opportunities and less on high-technology innovations.
3. Publicly supported efforts to foster high-technology innovation should be refocused, at an early stage, on potential for commercialization of the innovation, offset by inability of the private sector to act without public support.
4. Government entities in Mexico need to continue to support creation of risk capital funds, but can have greater impact on private investment in risk capital by improving and focusing their investment discipline.
5. Efforts to foster entrepreneurship in Mexico should include attention to enhancing and fostering development of new exit opportunities for early-stage investors in entrepreneurial ventures.
6. Efforts to foster entrepreneurship in Mexico should include developing more effective ways for individual investors in Mexico to participate in risk capital investing.
7. Education is an important input to developing Mexico's entrepreneurial culture. Universities and other educational institutions need to be encouraged through self-interest to develop relevant educational opportunities and to pursue research that is valuable to entrepreneurship and risk capital investing.
8. Efforts to foster the entrepreneurial culture of Mexico should include assessment of the kinds of advisory services that are critical to new venture success and should determine the areas where private service providers can be relied on and the areas where public support is necessary to bring about the availability of essential advisory services.
9. Efforts to foster the entrepreneurial culture of Mexico should include a comprehensive review of the infrastructure (broadly defined) that enables and supports entrepreneurial activity and risk capital investment. Where feasible, elements of the infrastructure should be introduced or modified to be more supportive or less obstructive.

## **Summary of Observations of Current Practice in the U.S. and Mexico**

This subsection contains a summary of our observations with respect to the practice of entrepreneurship and risk capital investing in the U.S. and an inventory of the institutions and actors who are involved in entrepreneurship and risk capital investing in Mexico. The subsection is organized by key actors. Section II of the report contains a more detailed review of entrepreneurship and risk capital investing in the U.S. Section III contains a more detailed inventory of Mexico.

### **Entrepreneurs**

#### ***Summary of Observation:***

- General Principles
  - Taking personal preferences and aspirations as given, the decision to become an entrepreneur is fundamentally rational – a comparison of cost and expected benefits, which can include non-pecuniary benefits.
  - High-value-added entrepreneurship can be fostered both by encouraging new business formation and encouraging the growth of existing businesses.
  - Access to risk capital is essential for fostering high-value-added entrepreneurship.
  - Entrepreneurial activity is higher in industries and during periods where the cost of experimentation is low and expected benefits are high.
  - Expected benefits of entrepreneurial activity derive from competitive advantage.
  - Clusters give entrepreneurs a competitive information advantage about the activities of rivals.
  - Individuals who decide to pursue high value added entrepreneurship generally have low opportunity cost of experimentation.
  - Individuals whose earnings opportunities are low and opportunity cost of experimentation is high are willing to pursue low-value-added ventures that contribute little to economic growth.
  - Access to timely and high-quality market information increases expected benefits and reduces the cost of entrepreneurial experiments.
  - Fluid and well-functioning labor markets reduce the opportunity cost of experimentation with entrepreneurship.
  - Portability of retirement savings reduces the cost of entrepreneurial experiments.
  - Risk capital funding generally is not available to ventures that do not have reliable accounting systems or where significant revenues are received in cash.
- Entrepreneurship in Mexico
  - Entrepreneurship abounds in Mexico but is concentrated among low-risk, low-value-added endeavors that require minimum investments of capital.
  - The challenge in Mexico is to motivate and enable people to pursue higher-value-added entrepreneurship.
  - The high-value-added high-growth economic sectors that attract entrepreneurial effort in Mexico are likely to be different than they are in the U.S.
  - Entrepreneurial opportunities and resources with which to pursue new venture opportunities are different in Mexico than in the U.S.

- Because few people in Mexico have significant personal savings, most are compelled to find re-employment quickly, and may be forced into positions that do not fully exploit their capabilities. This problem is aggravated in Mexico by the fact that most families are one-earner families
- People in Mexico are relatively unable to leave existing employment to pursue high-value-added entrepreneurial ventures.
- Because they often lack significant retirement savings, face uncertain and volatile employment markets, and lack liquidity, prospective entrepreneurs in Mexico tend to select opportunities that can be tested quickly and that have relatively high success probabilities and only modest up-side potential.
- The dearth of risk capital in Mexico discourages entrepreneurial effort and shifts the focus of entrepreneurial effort toward low-risk ventures that can be cash-flow-positive quickly.
- The dearth of risk capital in Mexico reduces incentives of entrepreneurs to build and document performance track records and provide the transparency that is demanded by providers of risk capital.
- Opportunities to evade taxes and other regulations in Mexico motivate entrepreneurs to adopt non-transparent business practices, making them unattractive to risk-capital investors.
- Opportunities for investing risk capital in established businesses exist mainly among medium and large enterprises and some segment of small and micro businesses.
- Entrepreneurial efforts in Mexico are impeded by lack of highly disaggregated high-quality, timely information on markets, demographics, competitors, prices, and costs.
- Mexico's information disadvantage in high-technology innovation is one reason that successful research and development efforts are rarely commercialized.
- Lack of education relevant to entrepreneurship is an important cause of business failure in Mexico.
- The high levels of time and expense that are required to legally initiate a business discourage prospective entrepreneurs in Mexico.
- Attributes of Entrepreneurs that Increase Their Likelihood of Success
  - To be successful, entrepreneurs should be able to identify opportunities that can achieve competitive advantage.
  - Entrepreneurs should understand the critical assumption on which their projections of success depend.
  - Entrepreneurs who understand the benefits of structuring their experiments around critical milestones are more attractive value to investors.
  - Entrepreneurs who have a clear sense of how much cash their venture will require are more attractive to investors.
  - Entrepreneurs who understand the financial return expectations of investors and of how those expectations bear on valuation are more attractive to investors.
  - Entrepreneurs who contribute to the value of their ventures in significant ways, but recognize their own limitations are more attractive to investors.
  - Entrepreneurs are more likely to attract financing if they are aware of key financing sources at each stage, the needs of those sources for information, and the kinds of opportunities that the various sources reasonably can finance.

- Entrepreneurs who are able to demonstrate their capabilities and commitments to meeting the needs of investors are more likely to attract investors.

## Investors

### *Summary of Observations*

- General Principles
  - Financial institutions (mainly pension funds, endowments, and life insurance companies), large public corporations, high-net-worth individuals, and government are the primary suppliers of risk capital.
  - Investments of risk capital may be either direct or through investment vehicles including venture capital and private equity funds.
  - The funds are pass-through vehicles that are not subject to separate layers of taxation but where providers of capital are not subject to liability.
  - Indirect investors often rely on gatekeepers or funds-of-funds to invest.
  - Regulations play an important role in shaping and delimiting the vehicles that are used for risk capital investing.
  - Financial institutions are motivated to invest by the expectation of high returns.
  - Financial institutions invest almost exclusively through venture capital and private equity funds.
  - Corporations are focused on strategically investing in projects that are expected to enhance the corporation's overall performance.
  - The emphasis on strategic investing has led corporations to focus on proprietary funds or holding company subsidiaries.
  - In industries where R&D activity is high, such as the pharmaceuticals industry, risk capital investing may be a routine part of the corporation's capital budget.
  - High-net-worth individuals are focused on return on invested capital or on earning returns on both their risk capital and managerial expertise.
  - Some high-net-worth individuals invest in venture capital and private equity funds, others act individually, and still others are organized into informal investor groups.
  - Governments tend to emphasize small businesses and research and development and to base investments on social returns.
  - Partly because of regulations, individuals other than high-net-worth individuals generally do not participate in risk capital investing.
  - It is unclear whether venture capital holding companies that resembled closed-end mutual funds are a viable funding vehicle.
  - Funds achieve more efficient operations by syndicating investments with other funds.
- Risk Capital in Mexico
  - Risk-capital investment opportunities in Mexico place less emphasis on transformational high technology, and more on applications of technology and on transforming the economy of Mexico.
  - Risk capital investing in Mexico requires different skills and knowledge than risk capital investing in the U.S., with less emphasis on technology expertise and more on managing environmental risks.

- Venture capital structures that have worked in the U.S. may not be as effective in Mexico and may unnecessarily limit the range of investments that can be financed with venture capital.
- The kinds of institutions that are the primary suppliers of risk capital have a very limited presence in Mexico.
- Until recently, these institutions have been foreclosed by Mexican regulation from investing in risk capital. In some cases they still are foreclosed.
- Potential suppliers of risk capital are not educated about the proper role of alternative assets in their asset portfolios or on how to invest in these assets.
- Large companies and grupos promote entrepreneurial effort directly in Mexico and are able to self-fund those efforts.
- Except through their own activities as entrepreneurs, high-net worth individuals in Mexico have not invested in risk capital.
- Mexico currently lacks the kinds of pass-through investment structures that exist in the U.S.
- Legal constraints on risk capital investing are potentially a serious problem for individual investors but less of a problem for passive indirect investors.
- Mexico may not be burdened with some of the regulatory impediments that have constrained the flow of risk capital in the U.S.
- The current small size of the risk-capital industry in Mexico limits the opportunities for syndication, funds of funds, and gatekeepers.
- Attributes of Investors that Increase Their Likelihood of Success
  - The investor or fund manager needs to be perceived as having integrity and being interested in the entrepreneur's success and returns to passive investors.
  - Fund managers must have sufficient capital commitments to attract good investment opportunities, to enable the fund to invest in a reasonable number of projects, and to occupy the fund manager's time in high-value-added activities.
  - Fund managers must be able to efficiently filter business plans in search of appropriate opportunities.
  - Venture capitalists need to have knowledge of the competitive environments and market potentials of products they invest in.
  - Investors must be able to attract entrepreneurs and to evaluate the status of technological efforts, the validity and value of intellectual property, the veracity of revenue and expense claims, and the capabilities of the entrepreneur.
  - Fund managers who are best able to assess cash needs, value opportunities, and structure investments are likely to be able to deliver the highest returns.
  - To be successful, the general partner must select opportunities where the entrepreneurial team is lacking some critical capabilities and must be able to supply those capabilities.
  - Business angel investors are similar to venture capital funds in that they earn returns on both capital and effort.
  - To be effective, active investors must be closely enough involved with their ventures, able to assess reasons for adverse outcome and to evaluate responses.
  - Part of the investor's normal contribution is knowing what advisory services are important to the venture and knowing where and how to acquire the services.
  - Investors in risk capital must be able to develop opportunities to sell their ownership stakes.

## Advisors

### *Summary of Observations*

- General Principles
  - Two types, for profit risk capital oriented advisors and not-for-profit (generally government-sponsored) agencies.
  - Non-governmental advisory service providers tend to emerge and be privately supplied when the services are not central to competitive advantage, the capabilities are fungible across ventures, and when there is a sufficiently large population of potential clients.
  - The larger the client market, the more specialized the service providers can be.
  - In more rural regions of the U.S., and in regions where entrepreneurial activity is low, it is difficult for advisors and service providers to specialize on entrepreneurial firms.
  - Entrepreneurs and investors also can use advisory services to signal value and for implicit certification.
- Advisory Services in Mexico
  - Advisory services in Mexico are relatively scarce and generally are not specialized to entrepreneurial ventures or risk capital investing.
  - The lack of specialized advisory services is a competitive disadvantage of Mexican entrepreneurs who are attempting to compete internationally.

## Universities and R&D Laboratories

### *Summary of Observations*

- General Principles
  - Universities are not so much proactive change agents as reactive facilitators of the changes that their markets are seeking.
  - Rather than initiating curricula, universities seek to respond to demands for education.
  - Universities have provided entrepreneurial education and programs when students and supporters have demanded them.
  - Research universities are like federations where faculty members control their own research agendas and select research topics based on their own objectives.
  - With regard to research output, faculty members act like entrepreneurs whose risk taking is supported by the university.
  - The incentive structure created by a university in the U.S. has much to do with how faculty members allocate their research time.
  - An approach to sharing the fruits of faculty research efforts that has yielded high research output at a few schools is based on empowerment.
  - Researchers are free to pursue whatever research questions they choose and to commercialize whatever they can.
  - The university shares in commercialization by acting, much like a venture capitalist, as an investor in the commercialization effort.
- Universities in Mexico



- Academic structures and incentives in Mexico are substantially the same as they are in the U.S.
- Many universities in Mexico have entrepreneurial support programs, yet most of them are small and have had little positive impact.
- Most entrepreneur support programs in Universities are focused on business plan fairs.
- Some universities have developed the typical incubator model providing space, yet few of them if any has real contacts with risk capital providers and many have failed.
- R&D efforts in Universities have been focused on science projects rather than on commercialization of technology.
- Education at all levels in Mexico is not focused on entrepreneurship.
- Students with attractive employment opportunities have low demand for entrepreneurially oriented education.

## **Catalyst Agents**

### ***Summary of Observations***

- General Principles
  - Catalyst agents in a locality create general awareness of entrepreneurial opportunities and of the potential for high returns to investors.
  - Successful catalyst agents tend to emerge spontaneously in response to opportunities they perceive to transform a locality.
  - Attempts by local governments to transform their economies generally are not effective.
  - The focus of effort of many catalyst agents is on increasing the information flow among diverse groups.
  - Promotion of high-quality networking opportunities that can help entrepreneurs, investors, and advisors to identify opportunities and recognize their merits.
  - Catalyst agents also seek to remove barriers to transformation of an economy and to find support for the effort.
- Catalyst Agents in Mexico
  - At a basic level, catalyst agents also operate in Mexico, but many are public sector agents.
  - Agents have focused more on regional development through tourism clusters, such as Cancun and Acapulco, or real estate clusters such as Santa Fe.
  - Few catalyst agents in Mexico have focused on creating networking opportunities for entrepreneurs, and investors and providers of advisory services.

## **Government**

### ***Summary of Observations***

- General Principles
  - Government plays an important and complex role in fostering or restraining entrepreneurship and risk capital.

- At the national level, laws that assign clear and transferable property rights and enforceability of contracts are essential to entrepreneurship.
- Government in Mexico
  - NAFIN has been a major player of the risk capital industry.
  - Few government programs have supported high-value-added entrepreneurship.
  - CONACYT is refocusing its grant policies to promote high-value-added research that emphasizes commercialization.
  - There is a wide interest among government officials in the current administration to promote risk capital and entrepreneurship in Mexico.

# Building an Entrepreneurial Culture in Mexico

## I. Background

Mexico has an economy in which many business owners fight each day for economic survival. Overwhelmingly, businesses in Mexico generate low levels of income and have low potential for growth. Close to 200,000 new firms are started each year in Mexico, mounting to the 3.7 million existing establishments. While the numbers are impressive, most of the new establishments are motivated by lack of employment opportunities, are micro businesses, do not have high value added capabilities, contribute little to GDP, and are not suitable to third-party suppliers of risk capital (i.e. long-term illiquid investments in equity, high-risk debt that includes equity-like enhancements, and similar financial assets).

Commonly, the state of economic activity in Mexico is attributed to Mexico's business "culture." However, as in any country, the nature of economic activity in Mexico, in fact, the business culture, rather than being cast in stone, is an endogenous result of the institutions and infrastructure upon which the business culture has developed. Because it is endogenous, the potential exists to transform the business culture of Mexico to an entrepreneurial culture with much greater potential for economic growth and profitable commerce.

Eventual transformation of Mexican business culture probably is inevitable. Basic institutions and infrastructure already are in place or are being established, which will enable the transformation to occur. However, without active intervention to transform the business culture, the changes are likely to take place over decades rather than years. Also, without active and carefully directed intervention, Mexico is at risk of creating institutions and infrastructure that may impede the transformation. In particular, Mexico and other emerging economies, seeing the apparent success of U.S. infrastructure and institutions in fostering high-value-added entrepreneurship and risk-capital investing, may simply attempt to imitate the infrastructure and institutions that appear to be associated with success in the U.S. The pitfalls of imitation are first, the failure to recognize that the U.S. climate of high-value-added entrepreneurship and risk-capital investing has taken many decades to emerge, and even now, is a comparatively small fraction of the U.S. economy; and second, the failure to account for the different opportunities that have existed in the U.S. as compared to opportunities in emerging economies.

Our objective in this report is to contribute to a roadmap that policy makers in Mexico can follow to accelerate the rate of transformation of Mexican business culture and to enable Mexico to anticipate and avoid infrastructure and institutional choices that may retard or limit Mexico's potential. To accomplish this, we first review the culture of entrepreneurship in the U.S., identifying the critical roles of key actors and essential differences between the U.S. and Mexico. We then provide a more detailed and specific assessment of the current status of the business culture of Mexico, identifying both its strengths and limitations. Based on our examinations of the U.S. and Mexico, we offer a series of recommendations that can help accelerate the transformation in Mexico, in light of

Mexico's unique opportunities, and can help avoid the mistakes of the U.S. The focus of our analysis and recommendations is on the overall environment within a society that fosters entrepreneurs and supports entrepreneurs in gaining access to capital, specifically venture capital, private equity, and other forms of risk capital. Our recommendations address the key actors in the market and the roles each must play.

### **Legitimacy Founded on Rational Entrepreneurship and Rational Investing**

Fostering entrepreneurship, per se, is not a useful objective of public policy. Undoubtedly, it is possible, at least temporarily, to foster entrepreneurship by creating wrong impressions about the potential rewards and likely success of entrepreneurial effort. Deliberately creating the false impression that expected rewards are very high, such as by over-emphasizing a small number of great successes, can induce people to experiment with new ventures. While the experimentation occasionally may result in success, and while the entrepreneurial component of the economy may grow as a result of such efforts, the health of the economy is likely to be harmed.

The perspective of this report is based in economics, beginning from emphasis on rational entrepreneurship. Rational entrepreneurship means that entrepreneurs decide to pursue opportunities (to "experiment" with a perceived opportunity) based on unbiased assessments of risk and potential return. That is, they are not encouraged to experimenting based on any external efforts that could mislead them about the value of the opportunity. Individuals who choose to become entrepreneurs and to pursue particular ventures always are foregoing opportunities to commit time and resources to other endeavors including, among others, traditional employment in existing businesses. If their decision to becoming entrepreneurs are based on overly optimistic impressions, they are, on average, worse off than had they not experimented. The entrepreneurial successes will less than compensate for the failures. Further, false impressions can result in frustration and disaffection. If individuals with insufficient skill or insufficient commitment are induced by the potential for high returns to experiment with perceived opportunities, they are likely to fail.

The potential for individuals to form biased and overly optimistic assessments of opportunities in entrepreneurship is increased when entrepreneurs are confronted with exemplars of highly successful entrepreneurs. The complete message to prospective entrepreneurs must include the recognition that high-return opportunities are also high-risk opportunities where success depends on hard work, ability, and luck. .

Just as legitimacy depends on fostering the rational choice to experiment with an entrepreneurial opportunity, it depends on fostering rational investing in risk capital. Rational risk capital investing means that investors base their decisions on unbiased assessments of risk and expected return and are not misled into investing by overly optimistic claims about potential returns. Experienced providers of risk capital understand and provide for the optimism in the projections of the entrepreneur. Our concern is that policies intended to foster the growth of risk capital investing not rely on efforts to mislead investors into over-valuing investment opportunities.

### **Core Principles of a Policy to Foster High-Value-Added Entrepreneurship**

Rather than fostering a climate of over-optimism or irrational exuberance, we emphasize four fundamental principles as the drivers of a successful policy to foster a culture of high-value-added entrepreneurship, supported by an appropriate level of risk capital investing:

- A legitimate and effective policy must be based on creating an infrastructure that reduces the risks and/or increases the expected returns to entrepreneurial effort and/or risk capital investing.
- A legitimate and effective policy must be based on creating an infrastructure that enables entrepreneurs and investors to identify opportunities to achieve competitive advantage and to more accurately assess risks and potential returns of entrepreneurial opportunities.
- A legitimate and effective policy must be based on creating an infrastructure that reduces the cost of experimentation with entrepreneurial opportunities.
- A legitimate and effective policy must be based on finding and removing artificial barriers to pursuing or investing in entrepreneurial opportunities.

***Reducing the risks and increasing the expected returns:*** Most entrepreneurial ventures with potential for high returns are inherently risky. Nonetheless, rational entrepreneurs and investors do not bear risk unnecessarily. If, for example, an opportunity to serve a particular market can be pursued equally well in two localities that differ only in their levels of risk, the opportunity is more likely to be pursued in the less risky locality. Individuals in the riskier locality are less likely to select into pursuit of the opportunity because the greater risk both reduces the expected return and reduces the present value of the expected return to the entrepreneur. Providers of risk capital are less likely to invest in the higher-risk locality for the same reasons. Furthermore, rational entrepreneurs and risk-capital investors recognize that, for the particular opportunity, the localities are in competition with each other and that the lower risk locality has a competitive advantage in pursuing the opportunity. It follows that policies designed to reduce risks and increase expected returns in a locality will increase the competitive advantage of entrepreneurial opportunities pursued in the locality. The same reasoning applies when the risks and expected returns are not based on geography, per se, but on such factors as secure access to resources, risks of competitive reaction, etc.

***Increasing the accuracy of assessments of risks and potential returns:*** All else equal, an opportunity is likely to be pursued by the entrepreneur who can most accurately assess its risks and potential returns. This also is the entrepreneur who is most likely to be able to attract risk capital. Rational entrepreneurs recognize that, usually, they are competing with others (whom they may not be specifically aware of) to pursue an opportunity. In deciding whether to go forward, an entrepreneur needs to be able to address two questions: Why is the opportunity not already being pursued? Why am I the right person to pursue the opportunity? These same questions are critical to providers of risk capital in their decision of whether to invest. Generally, inability to answer these questions sufficiently, filters out overly optimistic entrepreneurs, or at a minimum, reduces their access to risk capital. It follows that the competitive advantages of entrepreneurial opportunities can be enhanced by policies that create an infrastructure that enables entrepreneurs and investors to more accurately assess risks and potential returns.

***Reducing the cost of experimentation:*** A key aspect of fostering rational growth of a culture of entrepreneurship is on lowering the cost of experimentation in all dimensions. Experimentation is costly for entrepreneurs if, for example, re-employment after attempting a venture that fails is time consuming, and if it takes a long time to determine whether a venture will succeed or not. Experimentation is costly for investors if the cash investment associated with the experiment is unnecessarily high. It follows that the competitive advantages of entrepreneurial opportunities are increased by policies that create an infrastructure that reduces the cost of experimentation.

***Removing artificial barriers:*** Pursuit of entrepreneurial opportunities is restrained if entrepreneurs are prevented by artificial means from experimenting or if potential providers of risk capital are prevented by artificial means from investing. Even if high-value-added opportunities exist and are recognized, they cannot be pursued if would-be entrepreneurs are prevented from experimenting or if potential suppliers of risk capital are not free to invest. Artificial barriers effectively preserve the opportunity for others who are less constrained by the barriers, such as by parties with access to their own, unrestrained sources of capital or parties who operate in localities that are not subject to the barriers. In either case, the economic value of the opportunity is diminished.

## **Limitations**

Our study does not directly address, for example, specific legal and regulatory impediments to development of entrepreneurship and venture capital (which fall generally under the fourth fundamental principle, above). However, these other areas also can be viewed from the perspective of their effects on cost of experimentation. The Partnership For Prosperity initiative already is investigating these aspects. We expect the studies to be complementary.

## **II. Key Contributors to the Entrepreneurial Culture of the United States: Differences Compared to Mexico**

In this section we review the culture of entrepreneurship in the U.S., identifying the critical roles of key actors and essential differences between the U.S. and Mexico. Our emphasis, as discussed above, is on rational entrepreneurship and rational risk-capital investing and on policies designed to create an infrastructure that enhances competitive advantage by: reducing the risk and increasing the expected returns to entrepreneurship; increasing the accuracy of risk and return assessment; lowering the cost of experimentation; and removing artificial barriers to entrepreneurship and investment.

### **Incidence of Entrepreneurship and Venture Capital in the U.S.**

***The U.S. is Not Uniformly Entrepreneurial – The Emergence of Clusters:*** While the national infrastructure of the U.S. is homogeneous, the infrastructure and institutions that support entrepreneurship and risk capital investing at the local and regional levels vary greatly. The U.S. has several well-known entrepreneurial clusters: the Silicon Valley in Northern California, Route 128 in the Boston area, the Research Triangle in Raleigh-

Durham, and Austin are among the best known. Many other localities in the U.S have attempted to foster the emergence of similar entrepreneurial clusters. In general, those efforts have consumed significant resources but have not been very successful. What causes entrepreneurial clusters in the U.S. to emerge and what determines whether they are likely to be successful? Understanding the reasons for success or failure in the U.S. is important for shaping a policy intended to foster entrepreneurship in Mexico.

***Success in the U.S. is based on Achieving Competitive Advantage:*** Generally, the success of entrepreneurial clusters is attributed to the presence of a confluence of factors that give rise to ventures in localities being able to achieve competitive advantage. Among the factors, the currently successful localities in the U.S. all are close to major well-endowed research universities and owe some of their success to effective transfer of technologies that are developed in the universities to commercialization by private businesses. In some cases, the entrepreneurial clusters have emerged around large successful high-technology businesses. Hewlett-Packard, for example, is recognized as a key contributor to growth of the Silicon Valley and Data General is linked to Route 128. In some cases, emergence of clusters is attributed partly to key individuals who have acted as catalyst agents. Frederic Terman is sometimes described as the father of Silicon Valley. George Kozmetsky has been instrumental in fostering the growth of entrepreneurship in Austin. To a large extent, grants and other government funding financed the early growth of Route 128, whereas the early growth of Silicon Valley was mainly privately funded, including by venture capital.

Partly based on the early successes, localities like the Silicon Valley and Route 128 have established technological leadership in reasonably well-defined product spaces. The growth of Route 128 was based originally on the mainframe computer industry. The growth of Silicon Valley was based originally around developing applications for computer chips. In both cases, concentration of capabilities and ventures based on related technologies has been key to maintaining a locality's competitive advantage. Concentration provides a pool of appropriately qualified workers, attracts key support services, lowers the costs of experimentation, and increases expected returns.

One reason so many efforts to foster entrepreneurship have not been successful is that the efforts, more often than not, fail to recognize that success depends on the ability of the locality to achieve sustainable competitive advantage.

***Entrepreneurship in the U.S. is Broader than High Technology:*** In this study, we define entrepreneurship broadly, to include any high-value-added industry. Rather than limiting the definition to start-up businesses, we also consider existing businesses with high-growth potential. This definition is consistent with the long-run economic history of entrepreneurship in the U.S. and is even more relevant to Mexico.

With the emphasis on Silicon Valley and Route 128 as exemplars of successful efforts to foster entrepreneurship, it is easy to reach the conclusion that the focus of entrepreneurial effort is or should be on high-technology ventures. However, such a narrow focus is myopic in at least three respects. First, it overly emphasizes the recent past, second, it overly emphasizes high technology, and third, it overly emphasizes businesses that have been financed with venture capital, per se, rather than risk capital, generally. High-value-added entrepreneurship has existed in the U.S. for a very long time. In the 1800s development of the railroads, distribution of electricity, creation of telephone

networks, and development of the petroleum industry all were carried out by entrepreneurs. In the early 1900s more than one hundred firms were competing to lead development of the automobile industry. Later, came radio broadcasting, television, distribution, branding, and others.

While the main focus of organized venture capital has been on high-technology businesses, this is partly an artifact of the recent emergence of organized venture capital as a financing vehicle. Had the same institutions of venture capital existed earlier, many of the high-value-added industries listed above could have received venture capital financing. Also, if entrepreneurship is not limited to businesses that have been the primary focus of organized venture capital, it is possible to identify a number of other clusters in the U.S. Examples include the motion picture industry in Southern California, petrochemicals in Houston, publishing in the Northeast, recorded country music in Nashville, gambling in Las Vegas, fashion in New York, and wine production in Northern California.

## **Entrepreneurs**

Often entrepreneurs in the U.S. are described as people with high tolerance for risk. That characterization suggests that there is something intrinsic to the person that causes them to select into or out of entrepreneurship. No doubt, personal preferences play a role in the choice. The Millennia Consulting report, “Best Practices in Building a Culture of Venture Capital,” addresses the qualitative characteristics of people who choose to become entrepreneurs and who are relatively likely to be successful. With that overlay, our observation is that, taking personal preferences and aspirations as given, the decision to become an entrepreneur is fundamentally rational – a comparison of cost and expected benefits, which can include non-pecuniary benefits. In the U.S. a large number of people seek to attract venture capital and other forms of risk capital. The level of activity is partly a result of perceived low cost and high potential benefits of experimentation with new venture opportunities.

In both good and bad times, the level of entrepreneurial experimentation in the U.S. is high, particularly if the focus is on high-value-added entrepreneurship that is based on perceived opportunity and not on subsistence entrepreneurship borne of unemployment and lack of alternatives. Experimentation is high in the U.S. specifically because the cost of experimenting is low and the potential benefits are high compared to in other countries. In reviewing the U.S. experience, we emphasize the qualities of entrepreneurs that are associated with low perceived cost and expected high return.

In general terms, the cost of an entrepreneurial experiment includes out-of-pocket expenses, plus foregone earnings over the expected duration of the experiment (i.e., the time until abandonment if the venture is not successful), plus foregone earnings over the expected time required to find employment if the venture fails, plus the expected loss of future earnings if the re-employment earnings rate is less than the current earnings rate.

*Mexico: Based on OECD data for the year 2000, the average production worker in Mexico earned \$9,291 annually, compared to \$33,283 in the U.S.<sup>1</sup> Though comparison data are not available for other occupations, the pattern of substantially lower earnings by occupation applies to the entire Mexican economy. Because workers in Mexico earn less*

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<sup>1</sup> Statistical Abstract of the United States: 2002, p. 839.



*than workers in the U.S., other things equal, they can be expected to be willing to pursue entrepreneurial ventures that are, on average, less valuable and contribute less to economic growth. Also, because workers in Mexico are not as wealthy and have less liquid wealth than do workers in the U.S., they are less able to undertake entrepreneurial experiments of long duration. Thus, currently, entrepreneurial effort in Mexico can be expected to be more focused on lower-value-added, shorter-duration experiments than in the U.S.*

***Most individuals who decide to pursue entrepreneurship in the U.S. have relatively low cost of experimentation:*** The cost of experimenting with an entrepreneurial venture normally includes some amount of out-of-pocket expenditures and a significant investment of time. These opportunity costs vary dramatically across the population of potential entrepreneurs. For example, for a college student, the cost of experimentation is relatively low. A student who drops out of school for a year to pursue a dot-com opportunity bears the cost of delaying employment for one year. If the venture fails, the student can easily return to school and complete the education. This was a common occurrence in the U.S. in the late 1990s. At the other extreme, if a corporate CEO in a secure position were to resign to pursue a new venture, the cost of the experiment would not only be the lost year of high salary, but also the likelihood that the individual would be unable to find similarly attractive employment if the venture were to fail. In the U.S. it is rare for a person to voluntarily leave secure attractive employment to experiment with a risky new venture. Conversely, the cost of experimentation is very low for a retired person, a person approaching retirement, or an unemployed person. It is common in the U.S. for a venture capitalist to recruit retirees to help manage their portfolio companies.

In addition to consideration of the cost of experimentation, prospective entrepreneurs must consider the present value (including the value of qualitative factors) of being successful. Experimentation is only warranted if the excess of the value of expected earnings over the duration of the entrepreneur's involvement in the successful venture, compared to the value of expected earnings in continued current employment, is high enough to off-set the cost of the experiment. Because the expected future earnings of a college-age student in the U.S. are high, a student in the U.S. generally is not motivated to experiment unless the opportunity has the potential to create substantial value. A retired individual, in contrast, may have low expected future earnings, and, therefore, be willing to pursue an opportunity with more modest potential. To induce a person to leave high-earning, secure employment, an opportunity would need to have very high potential.

*Mexico: Because expected earnings in Mexico are lower across all employment demographic groups, people in Mexico can be expected to be willing to pursue ventures with more modest potential than would people in the U.S. Additionally, important education differences exist between the countries. The OECD reports that as of 1999, 59 percent of adults in Mexico did not have more than a primary-school education, compared to only 5 percent in the U.S. At the other extreme, 12 percent of adults in Mexico had some university-level education, compared to 27 percent in the U.S. The U.S. also leads Mexico in technically oriented education intended to enable direct entry to employment, 8 percent of adults in the U.S. versus 1 percent in Mexico.<sup>2</sup> If they select into entrepreneurship,*

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<sup>2</sup> Statistical Abstract of the United States: 2002, p. 832.

*young well-educated people in technical fields (those with high opportunity costs) are more likely to initiate high-value-added, high-growth ventures than other people. However, these individuals also are the most likely than others to reject entrepreneurship to remain in current employment.*

***Entrepreneurial activity in the U.S. is higher in industries and during periods when the cost of experimentation is low and expected benefits are high:*** During the late 1990s, the average time required to determine whether a venture was going to succeed or fail was extremely short. Successful ventures, during that period, were going from launch to IPO in a matter of months. In that environment of low cost of experimentation and high potential rewards, many people decided to experiment. In the current environment, investors are more cautious and the capital market no longer is receptive to unproven ideas. The result is that the experiments now take longer. People in the U.S. have responded with renewed interest in corporate employment, greater interest in staying in school, and reduced willingness to take early retirement to pursue entrepreneurship.

The fact that interest in entrepreneurship increases during periods when the cost of experimentation is low and expected benefits are high also implies that entrepreneurial effort will tend to concentrate in sectors where the cost of experimentation is low and expected benefits are high.

*Mexico:* The interplay of expected costs and expected benefits implies that the economic sectors that attract entrepreneurial effort in Mexico are likely to be different than they are in the U.S. To an extent, the differences can be demonstrated by aggregate measures of infrastructure difference. For example, according to the U.S. Energy Information Administration, per capital energy consumption in Mexico in 2000 was 63 million BTU, compared to 351 million in the U.S., suggesting that businesses in Mexico are likely to be less capital intensive.<sup>3</sup> Also, per capital ownership of computers and telecommunications products is dramatically lower in Mexico: 0.051 computers per capital in Mexico compared to 0.585 in the U.S.; 0.125 telephone line per capita compared to 0.673 in the U.S.; 0.142 cell phone subscribers per capita compared to 0.400 in the U.S.; and 0.272 television receivers per capita compared to 0.806 in the U.S.<sup>4</sup> Expected benefits of entrepreneurial effort derive from competitive advantage. The differences suggest both that opportunities are different in Mexico than in the U.S. and that resources with which to pursue new venture opportunities are different. Even if expected benefits in a sector are substantial, individuals will not experiment with entrepreneurship unless their costs of experimenting are sufficiently low to warrant individual effort.

***Fluid and well-functioning labor markets in the U.S. reduce the cost of experimentation:*** For an individual who leaves current employment to pursue a venture, part of the cost of experimentation depends on the time and effort that must be devoted to seeking re-employment if the venture fails. In the U.S., where many prospective employers compete to hire skilled employees, the expected time to find re-employment is low. In fields like engineering, in particular, the re-employment market is very active. Individuals are able to move from one employer to another with very little sacrifice of specific human

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<sup>3</sup> Statistical Abstract of the United States: 2002, p. 847.

<sup>4</sup> Statistical Abstract of the United States: 2002, p. 852.

capital, and so are able to change positions with minimal adverse consequences on earnings. In contrast, Japan, for example, has had an economy based on lifetime corporate employment. Re-employment in that environment is difficult. Entrepreneurial activity in Japan is retarded by the rigidities of the employment market. In recent years, partly to encourage entrepreneurial activity, Japan has been trying to move away from the expectation of lifetime employment.

A well-functioning employment market is one where employment search costs are low and where individuals are not compelled by wealth constraints to accept positions for which they are not well suited. Employment markets in the U.S. work well on both accounts. The markets are rich in information about employment opportunities and individuals, either because they have adequate personal resources or because they can draw unemployment benefits from public and/or private sources, are not compelled to accept employment that does not require their skills. For those whose skills have become obsolete, public and private programs offer re-training and re-education.

*Mexico: In Mexico, employers are required to provide severance packages to terminated employees. The severance benefits are equal to a few months' earnings. There is no centrally administered program in Mexico that supplements or extends these benefits. Nor is there support for voluntary terminations. Because few people in Mexico have significant personal savings, most are compelled to find re-employment quickly, and may be forced into positions that do not fully exploit their capabilities. This problem is aggravated in Mexico by the fact that one-earner families are much more common than they are in the U.S. The OECD reports that, as of 1999, 29.3 percent of females between 15 and 19 in Mexico were neither involved in education nor the work force, compared to 8.2 percent in the U.S. In the 20 to 24 year-old category, 45.5 percent of Mexican females were in this category, compared to 19.0 percent in the U.S.<sup>5</sup>*

***Portability of retirement savings reduces the cost of experimentation:*** Retirement savings in the U.S. is an important component of the total wealth of most individuals in the U.S. Under ERISA and other U.S. regulations, retirement savings must vest with the individual fairly quickly and the balance is portable when a person's employment changes. Non-portability and long vesting periods lock individuals into relationships with current employers. The net effect is that non-portability discourages experimentation except by people with negligible wealth in retirement savings. Indirectly, non-portability also negatively impacts fluidity of the employment market.

*Mexico: In the U.S. virtually all people of retirement age can receive a base level of income from social security. A large fraction of the population has significant retirement savings in private retirement plans. Most of these savings are fully vested and portable. Under U.S. regulations, defined benefit plans are required to provide full vesting of benefits after only a few years of employment. Social security also exists in Mexico and, based on OECD data, the combined contribution rate of employer and employee is comparable to that of the U.S. in terms of percent of income.<sup>6</sup> The other portion of retirement savings in Mexico yields a smaller fraction retirement income. In part, this is*

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<sup>5</sup> Statistical Abstract of the United States: 2002, p. 840.

<sup>6</sup> Statistical Abstract of the United States: 2002, p. 839.

*because pension plans have only been used in Mexico for about eight years. In part, it is because Mexican pension plans have been required to invest only in debt securities. Further, defined benefit plans in Mexico are not required to vest quickly. The lack of portability effectively penalizes employees who resign to pursue entrepreneurial ventures. The net effect is that people in Mexico are relatively unable to leave existing employment to pursue high-value-added entrepreneurial ventures. Such ventures may be pursued by existing businesses (grupos) and research organizations such as universities, wealthy individuals, or people working on the ventures in their spare time.*

***Access to timely and high-quality market information in the U.S. increases expected benefits and reduces the cost of experimentation:*** Entrepreneurs in the U.S. and those that target U.S. markets have access to information that enables them to identify opportunities at comparatively low cost and enables them to test perceived opportunities relatively quickly. For example, to a venture that targets a U.S. consumer market, high quality demographic information can enable an entrepreneur to assess whether the target demographic group is of sufficient size to justify the experiment. Also, high quality demographic information can enable the entrepreneur to test assumptions about market receptivity quickly and at low cost. In the U.S., highly disaggregated and detailed information about both consumers and businesses enables entrepreneurs to make more accurate location and positioning decisions, to construct more useful surveys and market tests, and to quickly diagnose reasons for performance that is below or above expectations. The benefits of high-quality information include more accurate opportunity identification and shorter and less-expensive experiments.

Proximity to a market often is an important source of market knowledge. In this regard, the size of the U.S. market can be an important advantage for U.S. entrepreneurs. While entrepreneurs outside the U.S. sometimes can benefit from labor cost advantages, those advantages are mitigated by the frictions of doing business internationally and by lack of timely market information. Further, U.S. entrepreneurs may be able to duplicate the labor cost or other savings by basing some parts of their operation outside the U.S. Overall, when the target market is the U.S., entrepreneurs in the U.S. are likely to have a competitive advantage. Consequently, the size and information-richness of the U.S. market is one factor that accounts for the high level of high-value-added entrepreneurial activity in the U.S.

*Mexico: Business and demographic data on Mexico is less complete, more highly aggregated, less timely, and less accurate. Lack of better information is an impediment to opportunity identification, and significantly raises the cost of business planning and market testing.*

***Access to timely competitive information in the U.S. increases expected benefits and reduces the cost of experimentation:*** For high-technology innovations, entrepreneur in the U.S. often have an information advantage. In many cases, the merits of an innovation are clear. What is harder to assess is whether there are others who are working on similar innovations, how far along the competitors are in their efforts, and how likely they are to achieve success that will preempt the opportunity. Because of its high-technology clusters, U.S. entrepreneurs in the clusters who are focused on high-technology innovations have a competitive information advantage about the activities of rivals, relative to entrepreneurs

who are operating outside the clusters. These entrepreneurs can make more accurate decisions about whether to pursue opportunities or leave the pursuit to others.

*Mexico:* Mexico has devoted significant public and private resources to research efforts that target high-technology innovation. One implication of its information disadvantage is that while the technological aspects of research and development efforts sometimes are successful, the resulting innovations are rarely commercialized. Another is that lack of access to competitive information results in replicating the mistakes that already have been learned by others. Either the innovation is substantially duplicative of other innovations that have reached the market more quickly or serve market needs more efficiently, or the innovation, because of its isolated development, is insufficiently compatible with other technology products. The challenges that Mexico has faced in attempting to commercialize its high-technology innovations underscore the importance of basing entrepreneurial efforts on achievable competitive advantage.

**Wealth and risk aversion of entrepreneurs in the U.S.:** While they may be ambitious and optimistic, entrepreneurs in the U.S. also are risk averse. Risk aversion is one reason that the entrepreneurs are more apt to pursue ventures when the cost of experimentation is low. The lower the fraction of the entrepreneur's wealth and time that must be committed to a venture, the less risk averse the entrepreneur is likely to be in deciding whether to pursue it. Other things equal, people who have significant wealth in other assets, such as retirement savings or housing, are more likely to place a high value on the opportunity to experiment with a risky venture.

Taking account of realistic estimates of the time required to experiment with a new venture, the entrepreneur's other wealth, and earnings capacity, it is highly unlikely that an entrepreneur in the U.S. effectively is committing more than about 30 percent of total wealth to an experiment, even if the entrepreneur's commitment lasts for several years. The rest of the entrepreneur's wealth is held in relatively safe forms, including retirement savings, residential real estate, and secure earnings capacity. These other assets provide the entrepreneur with an important safety net. Even if the venture fails, the entrepreneur is left with a comfortable and secure standard of living. Secure wealth in these other forms enables entrepreneurs in the U.S. to experiment with high-risk opportunities.

*Mexico:* Most people in Mexico lack significant retirement savings, face uncertain and volatile employment markets, and lack the liquidity to be unemployed for a sustained period. This condition dictates that prospective entrepreneurs in Mexico will select opportunities that can be tested quickly with little need for investment of anything more than the entrepreneur's time, and that the selected opportunities will have relatively high success probabilities and only modest up-side potential. Because of these effects on risk tolerance and the limited upside potential, entrepreneurs in Mexico will be relatively unable to assemble the teams of committed people that are needed to pursue most high-value-added opportunities

**Attributes of successful entrepreneurs in the U.S.:** Entrepreneurs who are capable of attracting risk capital should recognize the need for and possess or have access to a variety of skills and capabilities. Entrepreneurs in the U.S. have access to an abundance of public and private data and other resources (including university education programs,

consulting firms, mentors, and networking opportunities) that can help them develop the necessary skills or can assist the entrepreneur in conducting the level of analysis that is necessary to attract risk-capital investment. Among the more important skills and capabilities that entrepreneurs can either learn or acquire are the following:

- Opportunity identification: The only opportunities that are likely to attract risk capital in the U.S. are those that are based on competitive advantage. To be successful, entrepreneurs should be able to identify such opportunities. This implies that the entrepreneur can provide satisfactory answers to questions such as: What need does the proposed venture serve? Why does the opportunity exist? Who are the key competitors who are or may be pursuing similar opportunities? Why is the entrepreneur likely to be successful against these competitors? Why is the entrepreneur the best-qualified person to pursue the opportunity?
- Risk assessment: To good choices of whether to pursue a venture, the entrepreneur should be able to recognize the need to assess the risks of the opportunity and must either engage in or provide for assessment of the risks. In deciding whether to pursue a venture, it is not sufficient to focus only on the successful outcome, where everything goes as hoped. Rather, the entrepreneur must be aware of what can go wrong and must understand the implications of wrong assumptions about the market and the opportunity.
- Structuring the experiment: Opportunities are more likely to be funded if the experiment can be pursued at low cost relative to potential return. An entrepreneur who identifies the critical success factors and structures the experiment to enable low cost testing and early opportunities to abandon or change the orientation of the venture can offer investors the potential to earn a higher return on investment. An entrepreneur who understands the benefits of structuring the experiment around critical milestones will have a more attractive value proposition to present to investors. The benefits accrue to both the entrepreneur and investors.
- Cash needs assessment: In light of the structure, the entrepreneur should have a sense of how much cash will be required to conduct the experiment. Entrepreneurs in the U.S. who fail to recognize opportunities to stage investment around achievable milestones generally will be seeking more cash than investors are willing to commit. As a result, they reduce the likelihood of being funded.
- Opportunity evaluation: The entrepreneur should have a sense of the financial return expectations of investors and of how those expectations bear on the investor's valuation of the opportunity. A entrepreneur who demonstrates lack of sensitivity to the financial return needs of the investor is unlikely to receive funding, even if the opportunity appears, otherwise, to be attractive.
- Awareness of their own contribution and capabilities: Some entrepreneurs are attractive to investors because of their technical knowledge others are attractive because of their managerial capabilities. While the entrepreneur must contribute to the value of the opportunity in a significant way, an entrepreneur who recognizes his/her own limitations is more likely to attract funding than an entrepreneur who is determined to control all aspects of the venture.
- Knowledge of financing sources: An entrepreneur who aspires to attract outside financing should have knowledge of key financing sources at each stage of business development, including the needs of these sources for information and the kinds of opportunities that the various sources reasonably can finance.

- Demonstrate their capabilities and commitment: To attract investors, an entrepreneur in the U.S. should be able to demonstrate capabilities and commitment to meeting the needs of investors. In the U.S. this is possible in several ways. Some entrepreneurs have established track records of success. Alternatively, an entrepreneur can demonstrate commitment by leaving existing employment in order to devote full-time effort to a venture, or by the entrepreneur's ability to secure commitments from key customers or suppliers.
- Awareness of and commitment to meeting the needs of investors: In addition to potential financial return, providers of risk capital need to be able to monitor their investments. Monitoring ability depends on continuing access to financial and operational information about the venture. Board membership is an aspect of investor monitoring. Transparency is, perhaps, even more important. Risk capital funding in the U.S. generally is not available to ventures that do not have reliable accounting systems or where significant revenues are received in cash.

In providing the above list, our emphasis has been on desirable qualities of entrepreneurs that can be taught or acquired. We are not suggesting that entrepreneurs in the U.S. will not be funded unless they have all of these qualities. Rather, their absence suggests to the risk-capital investors that working with the entrepreneur will be more difficult. At some threshold level, the investor is better off by foregoing the opportunity than by working with an entrepreneur who lacks or does not perceive the need for the above capabilities.

## Investors

***Types of U.S. risk-capital investors:*** Risk capital in the U.S. is provided primarily by three kinds of investors: financial institutions (mainly pension funds, endowments, and life insurance companies), large public corporations, high-net-worth individuals, and government. Financial institutions are motivated to invest in risk capital by the expectation that they can earn returns that are higher than the expected returns from investing in market securities. In some cases, large corporations have also invested in risk capital because of high potential return. However, more recently, the objective of corporate investing has shifted. The emphasis now is on strategically investing in projects that are expected to enhance the corporation's overall performance. In some cases, high-net-worth individuals, particularly those who are passive, are focused on return on invested capital. In others, high-net-worth individuals seek to supply both risk capital and managerial capabilities and to earn returns on both. The U.S. government has tended to emphasize research and development and to base investments on social returns. Government investments generally are concentrated on health, defense, environment, and research with no clear commercial value. Except for their indirect investments through stock ownership of public corporations, their contributions to pension funds, and their payments of life insurance premiums, individuals other than high-net-worth individuals generally do not participate in risk capital investing. In part, this is because U.S. regulations have made it difficult for individuals to make small investments in risk capital.

The Millennia Consulting report also identifies self-financing and friends and family as sources of risk capital. In this discussion, we concentrate on third-party sources that are motivated primarily by return on investment and that base their investment decisions primarily on the attractiveness of the opportunity. Self-financing and friends-

and-family investing are essentially bootstrap funding sources. When an entrepreneur uses credit card lines or a mortgage loan to finance a venture, the third-party funding source is relying on the integrity of the entrepreneur or on collateral unrelated to the venture as bases for repayment and is not evaluating the opportunity. For the most part, friends and family are not sufficiently sophisticated to evaluate the merits of new venture opportunities. Rather they are relying on family relationships and their long experience with the entrepreneur as bases for making their investment decisions. While self-financing and financing by friends and family may cause third-party investors to view opportunities more favorably, these financing sources are largely outside of the bounds where they can be influenced by public policy.

*Mexico: The kinds of institutions that are the primary suppliers of risk capital in the U.S. have more limited resources in Mexico. Until recently, these institutions have been foreclosed by Mexican regulation from investing in risk capital. In some cases they still are foreclosed. Partly as a consequence, professional risk capital in Mexico, to the extent that it is available, is supplied by sources outside Mexico.*

**Vehicles for risk capital investing:** Investments of risk capital in the U.S. may be either direct investment in entrepreneurial ventures or indirect, through a venture capital fund or other private equity fund. Financial institutions invest almost exclusively through venture capital and private equity funds. The funds are organized as limited partnerships where a general partner performs all investment and oversight functions for the fund. The funds are pass-through vehicles that are not subject to separate layers of taxation but where providers of capital are not subject to liability. Typically, institutional investors limit investments in venture capital and private equity to no more than 10 percent of their total assets. Some corporations also invest in venture capital funds, sometimes along side of institutional investors. More recently, the emphasis on strategic investing has led corporations to focus on proprietary funds or holding company subsidiaries. In industries where R& D activity is high, such as the pharmaceuticals industry, risk capital investing may be a routine part of the corporation's capital budget. High-net-worth individuals have three approaches to investing. Some of them participate as passive investors in venture capital and private equity funds. Others act individually, investing significant amounts directly in entrepreneurial ventures, possibly as part of an equity private placement. Still others are organized into informal investor groups, where they collaborate on screening investment opportunities but act individually when they invest. The U.S. government tends to invest through a variety of grant programs and bid solicitations.

In the late 1990s, individual investors attempted to participate in providing risk capital by purchasing shares of early-stage companies that had gone public. Those investors were essentially betting against the managers of risk-capital funds and lost substantial fractions of their investments in the year-2000 and 2001 market decline. It is unlikely that early-stage companies will again be able to access the public equity market any time soon. In addition, during the late 1990s, several groups attempted to tap the public equity market as a source of capital for investing in private equity and venture capital. These groups organized venture capital holding companies that resembled closed-end mutual funds. Because these groups all focused on e-commerce, and were negatively impacted by the market decline, it is unclear whether this approach to raising risk capital will be viable in the future.



*Mexico:* Mexico currently lacks the kinds of pass-through investment structures that exist in the U.S. However, this is less of a problem than might appear. Venue shopping for efficient legal structures is commonplace in the risk capital industry. Funds easily change jurisdictions by organizing under the laws that, at the time, are most favorable for them. Domestic legal constraints on risk capital investing are potentially a more serious problem for individual investors where shopping for favorable jurisdictions is less practical. The P4P initiative, however, is currently working to create a Mexican vehicle.

**The influence of regulations on investment vehicles:** While venture capital funds organized as limited partnerships and business angel groups organized as informal networks both have some distinct strengths, it is important to recognize the role of U.S. regulations on shaping and delimiting the vehicles that are used for risk-capital investing.

Originally, in the U.S., venture capital and private equity funds were organized as publicly traded closed-end mutual funds and were open to all investors. These mutual funds were subject to the provisions of the Investment Company Act of 1940. Following an interpretation of the Act in 1969 by the Securities and Exchange Commission, investing in non-market assets became extremely burdensome and risky for closed-end mutual funds. As a result, the closed-end mutual fund structure atrophied as a vehicle for investing in risk capital. By raising capital only from high-net-worth individuals and qualified financial institutions, the limited partnership structure that has emerged in the U.S. is not subject to the provisions of the Investment Company Act. However, the cost is that most individual investors, including many with substantial assets, are unable to invest in risk capital.

Business Angel networks is one way that high-net-worth individuals have sought to participate as suppliers of risk capital. However, in the U.S. these networks face great organizational challenges. Public security offerings in the U.S are regulated by the Securities and Exchange Acts of 1933 and 1934. Under these regulations, actions such as advertising for to investors and investing on behalf of others may be construed as public offerings and be illegal for business angel organizations. The result is that, even though angel organizations have the latent capacity to invest large amounts of risk capital, they have no effective means of committing to invest. Rather, with some variations in approach, all business angel organizations are structured to enable each investor to decide separately whether to invest or not and to require each investors to rely only on his or her own due diligence. Consequently, business angel organizations in the U.S. are highly inefficient.

*Mexico:* Relative to the U.S., Mexico may have some advantages with regard to regulatory constraints on risk capital investing and may be able to provide individual investors in Mexico with greater and more efficient access to risk capital investing than is possible in the U.S.

**Drivers of investment success:** Successful investing in risk capital depends on a number of factors: reliable access to a significant amount of capital that can be invested in illiquid assets for several years; access to a high-quality flow of investment opportunities (deal flow); expertise relevant to screening the investment opportunities; due diligence skills; skill in assessing cash needs and in valuing and structuring investments;

complementary management and monitoring skills to those of the entrepreneurs; capabilities of dealing with adverse outcomes; and access to harvesting opportunities. Implicitly, the investor or fund manager needs to be perceived as having integrity and being interested in the success of the entrepreneur and the returns to passive investors. For purpose of discussion, we consider these factors from the perspective of a venture capital fund.

- Reliable access to patient capital: To achieve the return objectives of investors, a fund manager in the U.S. must have sufficient capital commitments to attract good investment opportunities, to enable the fund to invest in a reasonable number of projects, and to occupy the fund manager's time in high-value-added activities relative to the fund and its portfolio companies. Fund returns are maximized in the U.S. calling on and deploying capital in response to opportunity identification, rather than the reverse. For this just-in-time approach to funding to work, the manager must be able to depend on investors to respond to capital calls quickly. Consequently, fund managers seek to raise funds from small number of reliable large investors rather than many smaller ones. Conversely, investors in the U.S. who can make reliable large commitments seek to invest in the funds whose managers have demonstrated success. When a fund raises capital from small investors the capital contributions often are required to be provided in advance and are held in trust until needed. However, the latter approach adversely affects the returns to the investor and raises the cost of managing the fund. In the U.S., this cost, and the difficulty of achieving a high enough commitment level to enable efficient operation are likely to be greatest for funds created by managers who lack track records of success.
- Access to high-quality deal flow: Because the risk-capital market in the U.S. is large, many entrepreneurs pursue opportunities and structure their ventures in way that can make ventures attractive to providers of risk capital. A typical venture capital fund in the U.S. receives thousands of business plans in a year, but invests in a very small number of ventures. Many can be easily rejected. Filtering business plans in search of appropriate opportunities consumes a large fraction of a venture capital fund manager's time and increases the gross return the fund must have. Entrepreneurs in the U.S. commonly seek funding from a substantial number of investors, and tend to have a pecking order in terms of the desirability of different financing types and sources. Currently, in the U.S., a fund manager without a track record of success is likely only to see plans that have already been rejected by better-established fund managers. High-net-worth individuals who invest directly or as part of an informal group face the same problem, to an even greater degree.
- Expertise relevant to screening investment opportunities: Investment selection depends on the investor's ability to recognize the potential for a venture to achieve competitive advantage. In the U.S., the recent foci of venture capital activity have been on pioneering high-technology ventures in industries including e-commerce, biotechnology, communications, and computer hardware and software. To assess the risks and potential of opportunities in these industries, venture capitalists have needed to have expertise and knowledge of the competitive environments and market potentials of products developed in the industries. Such risks have been the most important determinants of investment success and fund performance.

Filtering business plans in search of appropriate opportunities consumes a large fraction of a venture capital fund manager's time and increases the gross return the fund must have. Many of the business plans a venture capital fund receives can be easily rejected because the manager's fund is not looking for new opportunities at the time; does not have expertise in the industry that is the focus of the entrepreneur's plan; or is not located close enough to the venture to be able to monitor the investment. Others can be eliminated because the plan reveals that the opportunity has insufficient upside potential; the entrepreneur does not understand the opportunity; the entrepreneur does not have a competitive advantage in pursuing the opportunity; the entrepreneur is seeking funding from an inappropriate source; or the entrepreneur appears to be too inflexible to partner with.

- Due diligence skills: Success in new venture investing depends on extensive due diligence. In contrast to transacting with an established firm, an entrepreneurial venture leave the investor with little recourse if the entrepreneur's claims are not borne out. Litigation, for example, usually is not an effective remedy if a representation of the entrepreneur proves to be false or overstated. Hence, the investor's ability to attract good entrepreneurs and to carefully evaluate the current status of technological efforts, the validity and value of intellectual property, the veracity of revenue and expense claims, and the capabilities of the entrepreneur are critical.
- Skill in assessing cash needs and in valuing and structuring investments: Commonly, entrepreneurs produce business plans that are based on a presumption of success. Such plans tend to result in overvaluation and in underestimation of cumulative cash needs, offset by excessive proposals for initial investment amounts. While, as discussed above, entrepreneurs who are more realistic in their valuations, proposed structures, and assessments of needs are more likely to attract risk capital, third-party investors who can develop more realistic projection and assessments of cash needs are more able to invest successfully in opportunities where the entrepreneur lacks these capabilities. The main goals of investment structuring are to enable the parties to carry out the new venture experiment at low cost, to enable making timely decisions to abandon or modify the venture, to enable the investor to harvest the investment, and to produce higher value for both the investor and the entrepreneur. Those fund managers who are best able to assess cash needs, value opportunities, and structure investments are, all else equal, likely to be able to deliver the highest returns to fund investors.
- Complementary management and monitoring skills to those of the entrepreneurs: Venture capital funds and business angels are value-added investors. They do not simply provide capital. The gross return to a venture capital fund, for example, is designed to compensate for both the financial capital and the time commitment of the general partner. To be successful, the general partner must select opportunities where the entrepreneurial team is lacking some critical capabilities and must be able to supply those capabilities. Because many entrepreneurs in the U.S. are visionaries and are technology oriented, they most often are missing a range of managerial and marketing capabilities. Fund managers create value when they bring these essential resources to the venture, either directly or through hiring. In addition, by structuring the investment and monitoring the venture the fund manager can add discipline to the venture that might otherwise be lacking. Business angel investors

are similar to venture capital funds in that they earn returns on both capital and effort. The main difference is that the same person is providing both the capital and the effort. Because they tend to become involved earlier than venture capital investors, business angels often are focused on developing the internal capabilities of the entrepreneurial team that will be needed to complement what venture capital investors can contribute.

- Capabilities of dealing with adverse outcomes: An aspect of the value added by active third-party investors is that they create value partly by their ability to deal effectively with adverse outcomes. Making good decisions about what to do if a venture fails to meet a particular milestone, for example, is critical to success. To be effective in this role, the third-party investor must be closely enough involved with the venture to understand the reasons for an adverse outcome and to be able to evaluate the range of possible responses, which may include, for example, providing more funding, abandoning, changing the entrepreneurial team, or redirecting the effort.
- Access to harvesting opportunities: Third-party investors in a successful venture may earn nothing on their investments if they are unable to sell their ownership stakes. Inability to exit can be problematic for the investor because it forces the investor to continue to devote resources to monitoring the investment even after the investor's ability to create value has passed. In part, investors seek to assure the option to harvest by structuring the deal so that an IPO or private sale can be forced or used to trigger a buy-out by management of the venture. However, unless the investor can attract the interest of an investment banker who is willing to take the venture public or can attract the interest of more than one potential acquirer, the most attractive harvesting approaches in the U.S. are unlikely to be available and valuable.

***Practices and institutions that enhance the efficiency of risk capital investing:***

Venture capital and private equity fund partnership agreements allocate returns to limited partners and the fund manager. Other things equal, the fund manager's compensation diminishes the returns to limited partners. In the U.S. funds achieve more efficient operations by syndicating investments with other funds. Syndication allows funds to pool screening and due diligence efforts and to spread monitoring efforts. It also gives an individual fund access to more opportunities, the ability to invest in remote projects and projects that do not leverage its own core capabilities.

Investors in venture capital funds generally do not have the expertise or time required to evaluate the capabilities of venture capital fund managers. In addition, they are disinclined to concentrate their investments in a single fund or small number of funds. Large funds in the U.S. often rely on gatekeepers to screen and recommend funds in which to invest. Smaller institutions achieve diversification by investing in funds of funds, portfolios of limited partnership interests. Gatekeepers and fund-of-fund managers receive small percentage compensations for their roles in helping investors to deploy their capital.

*Mexico: Syndication, gatekeepers, and funds-of-funds in the U.S. developed in response to specific needs and opportunities. The current small size of the risk-capital industry in Mexico limits the opportunities.*

## Other Actors

**Advisors:** Starting a new venture or growing an existing one requires a broad range of capabilities. The Millennia Consulting report identifies an extensive list of advisors and service providers that can contribute to entrepreneurial effort. Advisors and service providers may have expertise relevant to financing, technology, product-market and marketing, employment and personnel, operations, real estate, taxes and accounting, law and regulation, information technology, and risk management. Depending on stage of development, most ventures have needs in almost all of these at some point. In discussing entrepreneurs, we emphasize the capabilities of entrepreneur in the U.S. that increase the likelihood of attracting risk capital. In discussing investors, we emphasize the need for capabilities that complement those of the entrepreneur. In many cases, an important part of the investor's contribution is knowing what advisory services are important to the venture and knowing where and how to acquire the services.

Advisory service providers tend to emerge and be privately supplied when two conditions are satisfied. First they emerge for services that are not central to the competitive advantage of the venture and where the capabilities are fungible across a broad range of ventures. It is unlikely, for example, that an entrepreneur in the U.S. can build competitive advantage on having superior accounting procedures. While accurate and timely record keeping is likely to be important, in the U.S. good record keeping is easy for others to achieve and, therefore, accounting procedures cannot distinguish a venture except negatively. Second, they emerge when there is a sufficiently large population of potential clients to support a specialist in providing the service. The larger the client market, the more specialized the service providers can be. In the U.S., because high-value-added entrepreneurial activity is substantial, service providers such as accountants, attorneys, and market researchers can specialize in providing the specific services that are most needed for new ventures that are seeking to develop and commercialize new products. Clearly, access to specialist advisors and service providers is one of the advantages of entrepreneurial clusters. In more rural regions of the U.S., and in regions where entrepreneurial activity is low, it is difficult for advisors and service providers to specialize on entrepreneurial firms.

In addition to the advice and services they provide directly to entrepreneurial ventures, advisors and service providers also can be used by entrepreneurs and investors to signal value and for implicit certification. For example, an entrepreneur who commits financial resources early to acquiring advisory service is more likely to be perceived by investors as believing in and committed to the venture. Similarly, fund managers who are able to attract syndication and to attract the interest of gatekeepers are more likely to be able to attract capital from those with less expertise in risk capital investing.

*Mexico: Because advisory services arise in response to market needs and their ability to specialize depends on the size of the market they are intended to serve, advisory services in Mexico are relatively scarce and generally are not specialized to entrepreneurial ventures or risk capital investing. The lack of specialized advisory services is a competitive disadvantage of Mexican entrepreneurs who are attempting to compete with ventures in entrepreneurial clusters.*

**Universities and R&D Laboratories:** The Millennia Consulting report describes the primary role of universities as knowledge creation and transfer that results in viable

business concepts. The report notes that universities may go beyond this to promote innovation and a climate of entrepreneurship and can nurture venture formation through mentoring and investing.

It is important to recognize that, particularly with respect to engineering, the sciences, medicine, and business, research universities in the U.S. are more like federations than hierarchies. Faculty members control their own research agendas and select research topics based on their own objectives, which may include the desire to maintain mobility in the academic employment market, the desire to attract grant funding, and the desire to generate outside income through consulting or entrepreneurship. More centrally, universities seek to be responsive to education demands. Subject to the expertise of their faculties, they endeavor to offer courses that can attract students to the school, create loyal alumni, and attract support from donors and grant providers. Some universities also seek to generate revenue through commercialization of technology, though this rarely is a material fraction of university revenues. The implication of all this is that universities are not so much proactive change agents as they are reactive facilitators of the changes that their markets are seeking. The universities in the U.S. that have developed significant programs that foster entrepreneurship have done so because the programs have been natural outgrowths of the research interests of faculty members or because the communities they serve have developed a demand for entrepreneurially oriented education. Those that have attempted to do so despite lack of faculty interest and support from the community generally have not been successful.

With regard to research output, it is reasonable to regard faculty members as entrepreneurs whose risk taking is supported by the university and who are protected on the downside by the continuing opportunity to draw a salary based on teaching and non-commercializable research. The incentive structure created by a university in the U.S. has much to do with how faculty members allocate their research time. In university environments where faculty members are not maintained at market-level salaries, an important focus of research effort is on pioneering research that is publishable at high levels and can enable the faculty member to move to a more supportive environment. In universities with effective infrastructures for securing grant support, academic research agendas are more likely to focus on the kinds of projects that can garner grant support, regardless of the commercial value of the effort.

With regard to commercialization of technology, universities in the U.S. take different approaches. Some take the strong position that technological innovations are the property of the university, and view faculty members essentially as employees that are hired to produce the innovations. The problem is that universities in the U.S. cannot control the research agendas of the faculty members. Faculty members tend to respond to the university's position by working on projects that have academic, rather than commercial value, or working on projects where the university's claim of ownership of the intellectual property would not be provable. A more enlightened approach that is in use at a few schools with high research output, and is gaining in use, is based on empowerment. Researchers are free to pursue whatever research questions they choose and to commercialize whatever they can. The university shares in commercialization by providing some of the advising and support needs of the faculty member/entrepreneur and may act much like a venture capitalist, as an investor in the commercialization effort.

*Mexico: Academic structures and incentives in Mexico are substantially the same as they are in the U.S.*

**Catalyst agents:** The Millennia Consulting report notes that catalyst agents are present in most entrepreneurial clusters in the U.S. To avoid confusion, it is useful to clearly distinguish catalyst agents from advisors and service providers. Whereas advisors and service providers focus on meeting specific needs of entrepreneurs, early-stage ventures, and providers of risk capital, a catalyst agent is an entity (possibly a person) that perceives that many of the critical elements for enabling a locality to achieve competitive advantage in some area of entrepreneurship are present but are not organized. The fundamental role of the agent is to create general awareness of the opportunity so that potential entrepreneurs begin to consider entrepreneurship as a worthwhile endeavor, investors begin to perceive the potential returns from investing in ventures, and potential providers of advisory services begin to see the merits of positioning themselves to support entrepreneurial efforts in the locality.

In the U.S., all successful catalyst agents have emerged spontaneously in response to the opportunities they perceive to transform the locality. Attempts by local governments to transform their economies generally have not been effective. In our view the failure of government initiatives is attributable to lack of a vision based on the opportunity to achieve competitive advantage (many government efforts are unfocused fishing expeditions) and lack of commitment to success (some government efforts and some private ones are directed by individual whose private interests are in conflict or whose personal success is too weakly tied to success of the effort).

Because the catalyst agent's objective is to transform the economy of a locality by increasing awareness of the opportunity to achieve competitive advantage, the focus of effort of many catalyst agents is on increasing the information flow among diverse groups. Promotion of high-quality and effective networking opportunities that can help prospective entrepreneurs, investors, and advisors to identify opportunities and recognize their merits is one important focus of the efforts of catalyst agents. The other is on removing barriers to transformation of the economy and finding support for the effort. In some cases, this has involved working with government agencies and private organizations that also are stakeholders in transformation.

*Mexico: At a basic level, catalyst agents also operate in Mexico. For the most part, their activities are limited to creating networking opportunities for prospective entrepreneurs and investors and for providers of advisory services. There is, however, little evidence of visionary catalyst agents effectively transforming the Mexican economy. There have been dramatic changes to some regions of Mexico, most notably the trade zone along the U.S. Mexico border and the organized development of the resort communities in Los Cabos and Cancun. These efforts have been championed mostly by government entities.*

**Government:** As recognize in the Millennia Consulting report, government plays an important and complex role in fostering or restraining entrepreneurship and risk capital. First, with respect to broad infrastructure, in the U.S., at the national level, laws that assign clear and transferable property rights and enforceability of contracts are essential to entrepreneurship. U.S. laws and regulations also enable the existence of earnings-pass-

through vehicles like limited partnerships and mutual funds. Laws and regulations pertaining to financial institutions and the large U.S. private pension system provide a large and growing supply of funds for investment in risk capital. Though, as discussed above, SEC regulations have, in some case restrained the supply of funds. The U.S. tax system, which is based on net income rather than revenue or value added, contributes to entrepreneurial activity. It does so by essentially subsidizing experimentation with risky new ventures (a venture that generates revenue in the U.S. but no net income, pays no income tax). Additionally, bankruptcy laws that reduce the downside risk of the entrepreneur encourage risk taking. Laws that enhance the fluidity of the employment market also support experimentation.

Second, the U.S. government sponsors and funds a number of programs that specifically support and encourage entrepreneurial activity. The SBIC and SBIR programs are cases in point. These programs are designed to provide capital and guarantees to support small business and research. U.S. grant-based programs such as the NSF, pure research efforts such as NASA, and applied research programs such as those through the Defense Department all support research and influence the direction of research.

At the state level, the primary involvement of government is through general support for schools and universities. While the focus of state support usually is on tuition revenues and enrollment, this revenue base is part of what enables academic researchers to pursue innovation and entrepreneurship more aggressively.

A number of local governments in the U.S. have sought to foster entrepreneurship by trying to act as catalyst agents in various ways. As discussed above, when local governments have initiated the efforts the efforts generally have not been effective. Success levels have been higher when local governments have responded to proposals of independent catalyst agents.

*Mexico: The basic legal environment of Mexico, including property rights, contract enforcement, tax laws, etc., is less conducive to high-value-added entrepreneurship than that of the U.S. However, Mexico's national agencies support entrepreneurial activity in much the same way as agencies in the U.S.*

**Large Corporations:** As discussed above, corporations in the U.S. sometimes act much like venture capitalists, investing directly in high-risk projects. They also serve in advisory rolls, such as by providing legal and accounting services to the venture. In addition, large corporations can have important roles as exit vehicles.

*Mexico: Mexican grupos also invest directly in high-risk projects, but have not generally been active as exit vehicles for ventures that have been developed independently.*

### **III. Inventory and Assessment of Elements of Mexico's Entrepreneurial Culture**

In the following section, we assess the entrepreneurial culture of Mexico. We consider the key actors through an inventory and identify the major obstacles they face



## Entrepreneurs

***Entrepreneurial Activity:*** Entrepreneurship abounds in Mexico, but is concentrated among a range of low-risk, low-value-added endeavors that require minimal investments of capital and have negligible or modest potential for growth. According to INEGI<sup>7</sup>, out of 3.7 million establishments in Mexico in the year 2000, there were over 55,000 “tortillerias”, selling on average less than \$90 per day. There were over 150,000 restaurants and “fondas”, selling on average less than \$95 per day, and there were over 70,000 “estéticas,” selling on average less than \$11 per day<sup>8</sup>. Take for example the cases of restaurants and “fondas,” where the net income is estimated to be on average \$33 per day. This, times 30 days of the month, provides to the owner \$990 as net income per month. Yet this modest return is 7.6 times higher than the minimum monthly wage. The challenge, therefore, is not to encourage more people to pursue entrepreneurial opportunities, but to find ways of fostering high-value-added entrepreneurship.

The primary objective of efforts to foster entrepreneurship is to encourage economic growth and wealth creation through promotion of high-value-added economic activity. The objective is achievable both through formation of new business ventures and through enhanced growth of existing businesses. Because the elements that affect success are different for start-up ventures than for existing firms, it is convenient to separate this discussion according to the venture’s stage of development.

***Start-up venture inventory:*** Reinforcing the point that entrepreneurship is practiced broadly in Mexico, The *Global Entrepreneurship Monitor* (“GEM”) study of 2001 reports that 18% of Mexicans are involved in entrepreneurial activities, the highest number of any of the 29 countries covered in the study. Also, Mexico ranks second worldwide in “opportunity” entrepreneurship and fourth in “necessity” entrepreneurship. The *GEM* report defines opportunity entrepreneurship as starting a business in response to a market opportunity. It defines necessity entrepreneurship as entrepreneurship by a person who has no alternative employment opportunities.

While the *GEM* report is perhaps the best available inventory, some considerations are necessary for interpreting the results. For example, when opportunity cost is considered, it is not clear that “opportunity” entrepreneurship as measured by *GEM* is not, in itself, sometimes a response to necessity. That is, a low-wage worker can identify market “opportunities” that offer better pay than current subsistence employment. Thus, although the entrepreneur is driven by necessity, the activity is considered by *GEM* to be an opportunity. Another study<sup>9</sup> finds that Mexican entrepreneurs tend to work alone instead of working with teams to start firms. Mexican entrepreneurs usually have no previous experience with starting companies. This study also finds that only 11% of Mexican start-ups have received outside investments above \$100,000.

High-value-added start-ups in Mexico, such as technology firms, are few, and face several disadvantages. The domestic markets for high value added products and services

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<sup>7</sup> Imagen Economica Nacional 2000.

<sup>8</sup> Tortillerías produce and sell tortillas, fondas sell low priced food and estéticas are hair saloons.

<sup>9</sup> Entrepreneurship in Emerging Economies, 1999, IADB.

are small. Mexican firms face strong competition from firms in the U.S. and lack efficient suppliers, including suppliers of financing.

Statistics in the following table show domestic investments in technology, measured by Gross Domestic Expenditures on Research and Development (“GERD”) for Mexico and several comparison countries. The low expenditure levels in Mexico are a response to low domestic demand, lack of private risk-capital funding, low exports of technology-based products (measured by receipts in the trade balance), and low domestic demand for imported technology (measured by payments in the trade balance):

**Table 1. Technology Facts, by country, 1999.**

	Gross Domestic Expenditure in R&D (GERD):		Technology Balance of Payments		
	<i>GERD*</i>	<i>% of GDP</i>	<i>Receipts*</i>	<i>Payments*</i>	<i>Balance*</i>
<b>USA</b>	243,548.00	2.64	36,467.00	13,275.00	23,192.00
<b>Spain</b>	28,814.80	2.17	2,590.80	3,124.40	-533.60
<b>Japan</b>	94,722.70	3.04	8,435.00	3,602.00	4,833.00
<b>Mexico</b>	3,428.10	0.40	42.10	554.20	-512.10

\* Data in U.S. Millions, PPP. Source: CONACYT

Careful interpretation of these reports shows that, in Mexico, most start-up companies are micro or small, are started by entrepreneurs who are motivated by lack of good employment opportunities, and are not necessarily started on the basis of competitive advantage or high-value-added projects.

*Existing firm inventory:* In Mexico, over 3.7 million establishments<sup>10</sup> collectively employ over 20 million people. Approximately, 96% of these establishments are considered micro-businesses, 3.3% are considered small sized businesses, 0.5% are medium sized businesses, and only 0.2% are large firms. Yet large firms represent over 45% of GDP. Micro-businesses and SMEs contribute most of the rest. The following table shows average GDP per firm and in aggregate, using official data on GDP share by size of firms:

**Table 2. Avg. Annual GDP per firm in Mexico, 2002, in U.S. dollars.**

	<i>Average GDP per firm</i>	<i># of Firms</i>	<i>% of Firms</i>	<i>Total GDP (billions)</i>	<i>% of GDP</i>
<b>Total</b>	\$187,704	3,700,000	100.0%	\$694.50	100%
<b>Micro</b>	\$48,881	3,552,000	96.0%	\$173.63	25%
<b>Small</b>	\$853,200	122,100	3.3%	\$104.18	15%
<b>Medium</b>	\$5,631,120	18,500	0.5%	\$104.18	15%
<b>Large</b>	\$42,233,400	7,400	0.2%	\$312.53	45%

Source: Adapted from INEGI statistics, 2002.

Large companies and “grupos” in Mexico are considered to be the most economically significant promoters of entrepreneurial effort. They are the primary investors in new companies or expansion plans. Very few Mexican companies other than

<sup>10</sup> An establishment is defined as an employer firm. There is a poor accountability of establishments in Mexico, but most people use INEGI statistics as the closer to reality.

the large grupos such as Telmex, Cemex, Bimbo, etc. come to mind when thinking of entrepreneurial, innovative, expanding businesses.

Overwhelmingly the micro-establishments in Mexico are businesses with low sales volume, low managerial capabilities, and minimal value added to the economy. Because such businesses are not well suited for venture capital or other forms of third-party risk capital, the market for risk-capital investments is limited substantially to medium and large firms. However, some micro and small business could be suited if carefully selected and promoted or if they represent clusters of competitive advantage. Communities of artisans, for example, could provide opportunities for entrepreneurial efforts related to branding, marketing, and distribution.

***Educational Backgrounds of Entrepreneurs:*** Many business failures in Mexico can be attributed to the entrepreneur's lack of relevant education. According to the Ministry of Economics, 65% of all start-up failures are due to lack of adequate education<sup>11</sup>.

The average education of adults in Mexico is 7.6 years. With a population of 100 million, and 60% under 30 years of age, there are over 20 million students in 130,000 primary and secondary schools, 1.8 million students in 1,300 undergraduate schools, and 130,000 students in 1,500 graduate schools. Low education is tied closely to low income. Of 40 million economically active people in Mexico, nearly 35 million earn on average between 0 and 10 minimum wages (between \$0 and about \$12,000 per year).

Even those with access to formal education receive little if any education directly focused on entrepreneurship. From K to 12, in private or public schools, where most Mexicans do have access and where educational content is controlled by the national education system (SEP), there is not a single syllabus, reading, or exercise on entrepreneurship. At higher education levels, most public colleges and universities are focused primarily on politics and humanities, with little attention to business management. In business-oriented education programs at almost all private colleges and universities, the curriculum is focused on management of large corporations.

The focus on corporate management in public and private business education is not surprising, as it is a response to student demand for education programs. Given earnings opportunities of managers in established businesses, and the risks of entrepreneurship, demand for a B.A. in entrepreneurship or an entrepreneurship master program is and would be very low not only in Mexico, but in almost any country one can think of.

***Opportunity Identification and Evaluation:*** For any entrepreneur, local and regional data on markets, demographics, competitors, prices, and costs, as well as macroeconomic variables are important to making good decisions and to performance analysis. For entrepreneurs in Mexico, slow flows of data, and, in some cases, nonexistence of vital facts, such as competitor and industry statistics are a significant impediment to entrepreneurship, both for start-ups and for business expansion. Also, once an opportunity is undertaken, data for deciding whether to continue, expand, or abandon the project is important. Lack of data traduces in loss of value for the entrepreneur and for investors.

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<sup>11</sup> Secretaría de Economía.

Lack of critical data is only one aspect of the problem, many entrepreneurs in Mexico do not know how to find the data that exists (such as, for example, data on markets in the U.S.) and lack the education and analytical skills to use the data effectively.

***Regulatory Hurdles and Labor Market Rigidities:*** Obtaining the permits and licenses necessary to start a company and to hire employees is a significant hurdle for entrepreneurs in Mexico. In some cases, they will assume the costs and commit the effort. But, many may decide the venture is not worth incurring the costs, may feel incapable of dealing with the requirements, or may opt for low-value-added micro businesses, hoping to be overlooked by enforcers of the regulations.

According to the World Bank Group<sup>12</sup> (WBG), starting a company in Mexico can take up to 51 days of concerted effort and costs up to \$1,000 in out-of-pocket expenses, assuming no corruption. Comparably, in the U.S. it takes 4 days and \$200 in costs. Some progress is being made in Mexico through Tramitanet, a government policy to encourage reduction of paperwork required to start a business. However, many claim that the only progress is on postponing some of the procedures to start a company, and not on reducing the actual number of procedures or costs.

Employment market rigidities and inefficiencies give rise to a series of problems that discourage high-value-added entrepreneurship: a) finding appropriate employment is difficult, b) labor laws can make it too expensive to hire and/or fire workers and c) labor laws can impose costly protection measures, such as high severance pay, on employment contracts.

- a) The opportunity costs of leaving a current position in order to start a new venture are higher if the probability of start-up failure is high and if the cost of finding suitable re-employment also is high. However, simple statistics can be misleading. On average, from 1993 to 2002, it took an unemployed Mexican worker over 2 months to find a job, according to INEGI. In comparison, average search time in the U.S is 4 months.<sup>13</sup> Also, the unemployment rates of Mexico and the U.S. in 2003 are 2.8% and 5.8%, respectively. This comparison suggests it is easier to find a job in Mexico than in the U.S., which is probably true, however the quality of the job is not the same. In Mexico, unemployed workers often have limited resources and little credit. They are compelled to quickly find re-employment, even if the employment is low paying and does not use the worker's abilities. Workers in the U.S., in contrast, often have sufficient liquidity and resources to search for longer periods to find more suitable and higher-paying positions.

It is probable, because of this and for other reasons, that Mexican workers have lower opportunity costs when deciding to start their own businesses. They may be under-employed in their current positions and can return to similar under-employment if the business fails. Because they are working in low-skill position, they can expect be able to find re-employment faster. Any person with a current job that pays near the minimum wage has an incentive to start his or her own tortilleria.

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<sup>12</sup> World Bank Group International Snapshot Report, 2003, Internet.

<sup>13</sup> Current Population Statistics of both countries, spell of unemployment data, 2003.

If the business fails, it will take only about 2 months to find a similar job as the one before.

If we consider good employment opportunities, and more skilled employees who have access to higher value added projects, it is probable that an entrepreneur would find it more difficult to find equal employment if the venture were to fail. For example, a recent study found that undergraduate recent alumni in Mexico, on average, require 9 months to find suitable employment.<sup>14</sup>

- b) If hiring and firing workers is expensive, start-up firms will face difficulties, for example, in ventures where market entry requires a varying number of workers/sellers. The WBG employment protection index measures the cost of terminating employees on a scale from zero to one, where zero is the lowest protection cost. The index values are 0.08 and 0.71 for the U.S. and Mexico, respectively. This means that companies, including new companies, that need to terminate workers, incur significantly higher costs in Mexico than in the U.S.
- c) If hiring and maintaining an employee is expensive, start-up firms will face difficulties in having a professional staff at early stages of the venture. The WBG conditions of employment index measures the cost of labor laws that protect or provide benefits to worker at the expense of the owner, where zero is the lowest cost. The index values are 0.3 and 0.8 for the U.S. and Mexico respectively. Again, relative to a company in the U.S., a company in Mexico incurs higher costs to maintain its labor force.

**Risk Capital Scarcity:** Angels, venture capital funds, and private equity funds are important sources of financing for some SMEs. In cases where risk capital providers are abundant, entrepreneurs have a greater incentive to think of business opportunities with high growth potential, which ventures usually have high cash burn rates. Also, entrepreneurs are more motivated to act in ways consistent with corporate governance best practice and to devote effort to remaining attractive to potential investors.

Risk capital in Mexico is scarce, and investment activities are not well documented, especially as to activities of angel investors. Venture capital funds in Mexico, including SINCAS, have over \$300 million in their portfolios, while private equity funds have close to \$1 billion. In Mexico, both types of funds usually invest in small and medium sized companies that could otherwise have had access to other financing sources. Thus, they tend to focus on businesses that are less risky than venture capital and private equity investors in the U.S.

As true risk capital investments are scarce, entrepreneurs have little incentive to start a company or project that requires large sums of risk capital. Because they do not anticipate receiving risk capital, they care little about corporate governance or creating ventures that could be attractive to investors.

**Tax Evasion:** Businesses in Mexico pay taxes on value added and on income. Entrepreneurs in Mexico have an incentive to conceal the revenues and profitability of their business activities. They can accomplish this by poor record-keeping and cash transactions.

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<sup>14</sup> EXP Magazine, March 2003 and the Report of RED Mexicana de Empleo Juvenil, 2003.

Such practices, which benefit the entrepreneur in the short run, make the venture unattractive to providers of risk capital both because the earnings cannot be validated and because the entrepreneur cannot be trusted. These concerns, however, are not important to an entrepreneur who does not expect to be able to attract risk capital even with accurate records.

**R&D Efforts:** Because risk capital is scarce, foreign competition is intense, and Mexico's domestic market for technology is small, entrepreneurs committing to R&D efforts have little reason to focus on the commercialization potential of their research. Rather, they are likely to focus on projects that can continue to attract grant funding and recognition in their professions.

Of the total GERD expenditures in Mexico during 1999, 61% was financed through government grants, and only 24% was financed by the private sector.<sup>15</sup> The near-absence of privately funded research in Mexico is revealing. Many large, research-oriented firms in the U.S. could easily locate their research efforts in Mexico if it was apparent then that doing so would be valuable for them. The fact that they have not done so suggests that, if Mexico can achieve a competitive advantage in developing pioneering technological innovation, these large U.S. firms, at least, have not yet recognized the opportunity.

**Complimentary Financing at Different Stages:** Staged financing is perhaps one of the most important contributors to entrepreneurs. Initial stages of firm development require bootstrapping techniques, angel and venture investments, supplier credit, factoring, bank loans, and leasing. At later stages the market for IPOs provides long-term resources. Without complimentary financial sources, starting or maintaining a competitive company is difficult, and can discourage entrepreneurial activity.

In Mexico, complimentary financing sources are scarce, a tendency caused partly by large periods of financial crisis and economic uncertainty. Some examples are:

**Bootstrapping techniques:** Usually entrepreneurs in Mexico start companies because of lack of good employment opportunities, meaning that their resources and probably their family's resources are limited. Also, using credit cards can be an expensive way to finance a company. The average credit card interest rate during 2002 was 36% per year, while a year before it was over 45%. In fact, most companies in Mexico, especially the micro and small businesses use supplier credit as their main source of funding at almost any stage of the venture.

**Banks:** In the U.S. there are over 8,000 banks, half of them, according to the SBA, are SME friendly. In contrast, Mexico has over 30 banks, of which 7 have a combined 90% market share.<sup>16</sup> Bank lending has diminished every year consecutively since 1994. According to Mexico's Central Bank, only 20% of Mexican firms have access to bank lending, most of them are large exporting firms.<sup>17</sup> High interest rates and bank refusals are cited as the factors impeding bank lending to other firms.

**Factoring:** While almost 70% of firms in Mexico use supplier credit as the main source of financing, formal factoring activities are scarce.<sup>18</sup> Those available are expensive

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<sup>15</sup> GERD Report, CONACYT, 2000.

<sup>16</sup> National Banking Commission Banking Statistics, 2003.

<sup>17</sup> Coyuntura del Mercado Crediticio, Banco de Mexico, 2003.

<sup>18</sup> Coyuntura del Mercado Crediticio, Banco de Mexico, 2003.

and only apply if the client is a large corporation such as Walmart. Start-ups that are generating revenue could rely heavily on factoring to have sufficient cash at early stages, but more competition and broader services are needed from factoring companies. There are 19 factoring companies in Mexico, of which 8 have 90% of the market.<sup>19</sup>

*Leasing:* It is uncommon to see equipment leasing in Mexico, and the available lease programs are expensive and too small to provide sufficient equipment or real estate leasing to a large number of firms. There are 32 leasing corporations in Mexico, of which 12 account for 80% of the market.<sup>20</sup>

*IPOs:* The equity market in Mexico is small and focused only on large well-established firms.<sup>21</sup> For the last 6 years, an average of 3 IPOs have occurred per year. SMEs have no access to public markets, and the causes for this have to do with minority rights, over-regulation, lack of institutional investors, government crowding out private investment, and other factors.

## **Investors**

*Overview of Risk Capital Investors in Mexico:* There are few risk capital investors in Mexico. Four groups are responsible of almost all investments. These are: informal investors seeking out good deals, large corporations seeking synergies, private equity funds focused on later stage financing, and government sponsored programs through development banks. Venture capital funds that are focused on early financing stages are few, and syndication is rare.

In general, risk capital investors have adopted the U.S. limited partnership structure. The legal structure of most funds is based in foreign countries to avoid either Mexican law impediments, to enable organizing as a limited partnership, to enhance contract enforceability, and to access the capital of foreign investors more easily.

*Private Equity Funds - Inventory:* Private equity funds face four widely mentioned problems in Mexico. First, there is no legal structure in Mexico for forming a limited partnership and contract enforcement is uncertain. In many cases, fund managers claim lack of local support from authorities and high legal costs to start a fund. Second, fund managers have difficulty raising funds from local institutional investors, who are constrained by regulation as to how they can commit long-term funds. For example, pension funds are restricted to invest only in government bonds and triple A graded private bonds. Insurers can invest part of their reserves in local funds, but only on a case-by-case basis and with previous permission of both the Treasury Department and the National Banking Commission, and some foreign institutional investors are discouraged from investing in local funds due to problems of contract enforcement and lack of fund manager with proven track records. Third, fund managers have difficulty generating a high-quality flow of appropriate investment opportunities. Hence, the low supply of risk capital both discourages entrepreneurs from launching firms that could attract risk capital, and as a consequence, leaves the few suppliers of risk capital in Mexico with the inability to find suitable investments. Fourth, all fund managers indicate that exit opportunities are limited

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<sup>19</sup> National Banking Commission Factoring Statistics, 2003.

<sup>20</sup> National Banking Commission Leasing Statistics, 2003.

<sup>21</sup> BMV Annual Reports.

to finding a strategic buyer, usually a foreign company, and that IPOs, MBOs, and LBOs are extremely rare. An unfortunate consequence is that the normal exit results in ownership of the venture being moved outside of Mexico.

Successful private equity funds in Mexico are few, such as Advent International or ZN Mexico Trust. In almost all success stories, there are common elements that contribute to such success. Most funds have adopted the U.S. private equity fund model but generally only invest if a majority stake can be acquired. Portfolio companies are generally medium or large size, with large local market, capacity to export, and targeted IRRs of 30-35%. Expected IRRs and realized IRRs generally are not reported. Investments average several million dollars per portfolio company and most funds focus on a few firms. Exits often must be forced, since investment criteria are based on the potential to sell the company to a foreign company or strategic investor. Sources of funding for the private equity funds are mostly foreign investors that commit partly because an agency of the Mexican government has committed matching funds. The general partner spends large amounts of effort inside the invested company and in many cases takes control of management.

Overall, there are between 10-15 private equity funds in Mexico. This number is probably an overstatement, as some are in the process of raising funds and may not be successful in doing so. Based on discussions and other evidence, fund sizes vary from \$40 to \$300 million. This number also is likely to be overstated, as most funds can initiate investments with substantially less than a full commitment of investment capital.

***Venture Capital Funds - Inventory:*** Venture capital funds are scarce. Government policy in Mexico in the past has been focused on creating and promoting SINCA, publicly traded closed-end venture capital funds. NAFIN has been the main investor in SINCA, contributing, through provision of some investment capital, almost half of the \$350 million total investments made by over 40 SINCA. In 10 years, over 250 firms have received funding from SINCA. Close to 100 remain in the SINCA portfolios and the rest have been divested. The SINCA approach has not worked well in Mexico. Though they are intended to be publicly traded, trading volume is low, which has limited significantly the private resources available for them. Of the 90 SINCA in operation 10 years ago, 28 remain open. Only three are publicly traded, but with among the lowest trading volumes on the Bolsa.

Some U.S.-style venture capital funds organized as limited partnerships exist, such as Agros, FOMEDE, Latin Idea and few others. In aggregate, these funds currently have less than \$40 million in assets. Other smaller venture capital funds exist in states across Mexico, such as Fondo Guanajuato, Chihuahua, etc. These venture capital funds also receive investment capital from NAFIN, IADB, or Bancomex. They focus on early stage financing, some degree of technology, and are willing to take minority positions. Targeted IRRs, again, are 30-35%.

Venture capital funds and SINCA mention problems related to lack of adequate regulation, fund raising, finding good deal flow, and exiting.

***High Net Worth Individuals - Inventory:*** While there are no current statistics on the level of investments by high-net-worth investors in Mexico, the numbers appear to be low. Most high-net-worth investors in Mexico are focused on a single company in which they have concentrated ownership. Usually their diversification efforts across business sectors are low and result from the horizontal diversification of the business in which they



are invested. Thus, their investment activities depend to a great extent on the ability to incorporate the venture into their existing business or business group, and finding synergies across them.

Though detailed investigation of securities and investment company regulation is beyond the scope of this paper, it appears that Mexico may not be burdened with some of the regulatory impediments that have constrained the flow of risk capital in the U.S. The lack of similar constraints may enable Mexico to rely on different organizational forms that can augment the flow of risk capital. While high-net-worth investors can play a role in promoting venture capital oriented entrepreneurship, no effective steps have been taken to organize the investors or provide them with the information needed to make investment decisions.

***Institutional and Individual Investors:*** Institutional investors such as pension funds, insurance companies and others are severely restricted by Mexican law in their ability to invest in private equity or venture capital. Other kinds of institutional investors that invest in risk capital in the U.S., such as endowments of universities and foundations, do not exist in Mexico.

High-net-worth individuals and corporations appear to have no materially binding legal constraints on their investments in risk capital. Legal constraints for them may have more to do with concerns related to contract enforceability or minority shareholder rights.

***The Role of Strategic Investors:*** Strategic investors play important roles in initial and later stages of development. Two types of strategic investors have evolved in Mexico, private and public large conglomerates or “grupos”, and integrated firms or “empresas integradoras.”

The roles that large conglomerates have had are not measured, but their importance is clear. For example, 30% of all technology based start-up companies from 1990 to 1996 were owned or invested in by a “grupo.”<sup>22</sup> Large grupos are the only companies with sufficient resources to invest in new companies, and also have incentives to increase the scale and size of the conglomerate under concentrated ownership.

Some issues arise when considering the role of large companies and concentrated ownership in new venture finance. For example, agency conflicts can produce inefficient valuations of projects; contract structures that are not optimal such as taking control from the original entrepreneur; and other agency related issues that usually end up with the group taking full control of the company.

Lately, some large conglomerates have decided to invest not in companies directly as strategic acquirers but rather as passive investors or strategic allies. Such is the case of Cemex and Televisa. The former, for example, invested resources through a private equity fund, and the latter, exchanged dead air time inventories in media for percentage share of the companies in which it wished to invest.

An integrated firm is a legal entity with capacity to integrate under its umbrella several SMEs can organize as partners. Any individual partner can own no more than 30% of the integrated firm and the integrated firm cannot own shares of the partners. Integrated firms provide services such as bargaining power with suppliers, distribution and commercialization channels, branding and access to financial markets.. Since their

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<sup>22</sup> Cien Empresas Innovadoras en México, Corona Treviño, 1997.

inception in 1991, over 590 integrated firms have been established, and over 30,000 SMEs have been integrated, providing the SMEs with technology, commercialization and distribution channels, management, and finance, mostly at subsidized rates by NAFIN. According to official data, around to 10% of integrated firms have been successful.<sup>23</sup>

Among the benefits of integrated firms are: greater bargaining power with suppliers, better distribution channels, co-branding, commercialization channels, and access to financial sources. Most SMEs are not aware of this program. Finding opportunities and creating effective integrated firms that provide greater bargaining power, technology, and finance to SMEs requires more sophisticated management teams than the typical managers of SMEs.

## **Other Actors**

**Advisors:** In Mexico, there are few advisors that are specialized specifically to start-up firms and entrepreneurs. Those that exist and are specialized are usually NGOs, such as JEMAC, Impulsa, Youth Business International, Youth Employment Summit, Emprende México, Jóvenes Concamin, Coparmex, Endeavor, and others. They encourage young people to start micro or small businesses and provide them with some advisory services in legal, accounting, mentoring, and others. Some of them provide limited financing, sometimes as equity, and others as subsidized debt. They promote business plan forums, networking activities, and other events. Most of them are relatively new, and success stories are few. Advisors providing a full range of services for start-ups are non-existent. In Mexico, for-profit advisors who provide services that are needed by entrepreneurs are rarely, if ever, specialized to the needs of entrepreneurs.

**Catalyst Agents:** In Mexico, there has not been a private agent capable of identifying competitive advantages in a particular region and has tried to develop it as a cluster or an entrepreneurial region. Most of the times, it is the government that tries to promote activities, but without much success, except when those activities are accompanied by strong competitive advantages and significant involvement of the government in bringing about the transformation, such as tourism clusters in Cancun or Acapulco.

**Universities:** Universities in Mexico focus more on entrepreneurship fairs than on research centers. Most entrepreneurial support programs inside universities work similarly, providing courses in writing business plans, and in some cases providing assistance from faculty. Today, nearly 80 higher education institutions in Mexico have entrepreneurship programs. Most of the programs are focused on business plan fairs. According to Coparmex, over 90 thousand business plans are presented each year in universities. However, to estimate the number of actual companies created from the business plan fairs is difficult. For example, ITESM, one of the leading private universities in Mexico claims to produce 4,000 firms per year, according to Rafael Alcaraz in an interview with *Reforma* newspaper. UNAM, the national university, only claims to produce around 20 firms each year from its entrepreneurial programs. The Polytechnic Institute (IPN) claims to produce around 50 firms a year. Anahuac del Norte claims to produce 20 firms a year, and Anahuac del Sur produces around 5. It is clear that the numbers are not comparable across schools.

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<sup>23</sup> Secretaría de Economía, SIEM Reports. Unfortunately, no definition of success is given.

It is probable that ITESM produces 4,000 business plans, but very few of those become real companies. Also, it is likely that UNAM and IPN produce more than 20 and 50 firms per year respectively, though not necessarily attributable to business plan fairs.

Some effort has been made by some universities to create different models of business incubators. ITESM has a technology incubator that provides typical incubator services. Anahuac del Norte has a joint program with UCLA to help a business raise funds through a road show in California. ITAM has developed links to resources through a SINCA. Anahuac del Sur has a business accelerator model with links to some service providers. Public universities such as UNAM and IPN, both tried typical incubator models that did not work. Both the operations and building facilities were shut down due to bad project availability, lack of technology commercialization programs, and lack of funding.

Entrepreneur programs that promote students to start their own high-value-added companies are hard to find. Most academic programs are focused on management, finance and technology applications for medium or large firms, and little attention is placed on venture capital entrepreneurship. Some venture capital funds, such as FOMEDE, have indicated that they have not been able to find good investment projects through universities.

Universities in Mexico are not regarded as research centers that are intended to develop and commercialize technology. Researchers generally focus on grant funding and their research projects are more science oriented than commercial. In few cases, universities and researchers have entered intellectual property contracts that specify ownership of technological innovations.

***Government:*** The government plays several roles in promoting a venture capital culture. To some extent, direct participation of government should be limited to promote an appropriate infrastructure in the country or region, such as contract enforcements, adequate investment vehicles, information, and perhaps provision of some incentives.

***Contract enforcement:*** When entering a contract with a supplier, a seller, a buyer, a bank, or even a venture capital fund, the certainty that the contract can be enforced is the single most important thing the entrepreneur/bank/investor wants. Without enforceability, entrepreneurship and a venture capital culture are discouraged. Contract enforceability does not mean that the investor plans to litigate with entrepreneurs. However, reliable legal means of enforcing agreements cause the parties to avoid breaching in the first place.

According to the World Bank Group, there are, on average, 47 procedural actions in Mexico between conflicting parties before obtaining a result from the court, compared to 12 in the U.S. Further, the duration between the moment the lawsuit is filed to actual day of payment averages 283 days in Mexico vs. 54 days in the U.S. Finally, the level of formality index measures different aspects, such as judge intervention, smoothness of processes, and other important facts. The index ranges from zero to seven, where zero means the easiest process to file and complete and action. The index values are 2.6 and 4.7 for the U.S. and Mexico respectively. The difference reflects a low level of enforceability of contracts in Mexico and that enforcement can be prohibitively costly.

***Tax Incentives:*** Mexican companies do not pay taxes on income if net income is negative or if accumulated earnings are negative for a five-year period. However, value added tax is paid just as any other sales tax, and is set at 15% nationally. Value added taxes are generally easier to monitor and collect than are income taxes. However, value added taxes raise the base cost of the venture's product, even if the venture is not profitable. The

value added tax reduces income tax, but only if net income is positive after the value added tax is applied.

Direct Involvement of Government: Also, the role of the government can be direct as a supplier of financing and of some advisory services through development banks and special ministry-level programs. The following are the most important government contributions to a venture capital culture:

- Nacional Financiera SNC: NAFIN is at the core of the risk capital industry in Mexico. In the 50s, NAFIN promoted the steel and textile industries, in the 60s and 70s the oil and mining industries, and since the 80s the capital goods industry. Since the early 90s, NAFIN has adopted an institutional investment strategy that is divided into two main causes: Direct and indirect investing.

Direct investing refers to equity contributions made by NAFIN in specific firms. Monitoring and advising of these firms comes directly from NAFIN. Indirect investment refers to matching-fund equity investments in SINCAS and private equity funds. In SINCAS, NAFIN has contributed over \$150 million, and in private equity funds close to \$50 million.<sup>24</sup> NAFIN plays a major role on the boards of the funds in which it invests. In both direct and indirect investments, NAFIN seeks a financial return according to the risk involved. NAFIN apparently has not used leveraged equity to promote private investments.

- Banco Nacional de Comercio Exterior: Bancomext plays two roles in promoting venture capital entrepreneurship in Mexico. First, it participates indirectly in private equity funds through matching investments in risk-capital funds such as Ventana and WAMEX. Second, it participates directly through a venture capital fund created by the Bank. Management of this fund has now been moved to a private venture fund, FOMEDE, that is focusing on young entrepreneurs with investment projects aimed at export markets or import substitution.
- Consejo Nacional de Ciencia y Tecnologia: CONACYT has already achieved a National Network of R&D Centers that are coordinated centrally. It has the CONACYT sector, mixed, international, institutional research funds, and has gained from the federal government tax incentives for enterprise innovation (30% of annual expenditure on R&D). It is trying to develop, in the near term, a seed and venture capital matching-fund program for high-value-added enterprises and the complementary development of 10 industrial technological platforms. It has not considered using leveraged equity to promote private investments.
- The Ministry of Economics: The most recent development plan of the Ministry of Economics (Secretaria de Economia, SE) is completely focused on promoting entrepreneurship and SMEs. To accomplish this, the SE has postulated 6 strategies: 1) promote a competitive environment, 2) promote access to financing sources, 3) promote business education, 4) promote access to technology and innovation, 5) promote regional integration, and 6) promote market fortification. All 6 strategies are being or will be implemented by the executive branch, in collaboration with different actors such as universities, financial system, other government entities, etc.

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<sup>24</sup> From "Experiencias de Fondos Multinacionales y Sociedades de Inversión de Capitales NAFIN", by Eduardo Mapes.

## IV. Recommendations for Building a Culture that Supports Entrepreneurship and Venture Capital in Mexico

### Summary of Recommendations

In the context of the above principles, our recommendations for fostering the entrepreneurial culture of Mexico are classified under nine broad headings, each of which we will support with more specific recommendations for implementation. The following are the recommendations and a brief statement of the rationale for each:

#### **1. Efforts to foster entrepreneurship in Mexico should be refocused more on high-value-added growth opportunities of existing SMEs and less on encouraging formation of new start-up businesses.**

*Our investigation indicates that, for many reasons, if efforts to foster entrepreneurship in Mexico are targeted at individuals and creation of new start-up businesses, the businesses that are created will tend to be based on low-risk opportunities, with low growth potential and low value added. The hurdles to achieving a broad-based growth of high-value-added entrepreneurship appear to be insurmountable in an environment where most people earn low wages, are not highly educated, and do not have significant amounts of liquid wealth. Most of the problems that make successful efforts to foster broad-based high-value-added entrepreneurship infeasible are avoided or overcome if the efforts are focused on SMEs with potential for high-value-added growth.*

#### ***Specific Recommendations:***

- **Opportunity identification and assessment:** Based on assessment of opportunities to achieve competitive advantage, identify existing SMEs with significant potential for high-value-added expansion or for extending their operations into additional products or additional markets. Ideally, this effort should begin with a structured assessment of achievable competitive advantage in Mexico. Recognizing the diversity of the Mexican economy, it could be useful to make the assessment at the state level, and to evaluate opportunities to achieve competitive advantage on a state-by-state basis.
- **Self-assessment:** Develop self-assessment tools and templates that owners and managers of SMEs can use to independently make preliminary investigations of their own opportunities for achieving competitive advantage in new or expanded activities and for achieving high-value-added growth.
- **Education and Training:** Develop education and training opportunities for owners and managers of SMEs to improve their capabilities in opportunity identification, planning for business expansion or extension, and use of outside equity or equity-enhanced debt.
- **Advising and business planning:** Implement advisory and education programs to develop the capabilities of SME managers for managing growth that is financed with outside equity and to prepare the business cases for outside equity financing.
- **Credentialing:** Provide credentialing for SMEs and managers that have developed the necessary capabilities that risk capital investors look for. The objective of credentialing is to reduce dependence on track record and increase reliance on

evidence of capabilities and business practices. Credentialing of managers should be based on completion of relevant education and training. Credentialing of SMEs should be based on an assessment of business processes and opportunities. Credentialing of SMEs and managers is complementary, such that the most attractive opportunities are likely to be those with good business processes and capable management.

- **Networking:** Create opportunities to qualified SMEs and management teams to present their business cases to private equity funds and high-net-worth individuals.
- **Staging and Evaluation of Program:** The critical success factors related to this initiative are whether it will be possible to identify existing SMEs that are appropriate for and interested in growth that is financed by outside equity, and whether potential investors will find the opportunities sufficiently attractive. A preliminary assessment can be made by reviewing the concept underlying this recommendation with existing private equity fund managers and advisors and with high-net-worth individuals who have experience with risk capital investing. Assuming the preliminary assessment is positive, based on the review, a more specific process can be developed for opportunity identification and can be tested selectively. The initial review session with investors can be used partly to seek advice on the process of opportunity identification. Assuming appropriate and interested SMEs can be identified, a networking event can be arranged with private equity fund managers and high-net-worth individuals to further refine the selection process and to develop more specifics on education, advising, and business planning needs. That is, the criteria used to identify opportunities and the opportunities that were identified in the trials could be presented and discussed, with a view to improving the process. At that point an assessment can be made of whether to proceed with full implementation of the program, including development of the self-assessment tools, education, and advising on business case preparation.

## **2. Efforts to foster entrepreneurship of high-value-added start-ups should be refocused more on non-high-technology opportunities and less on high-technology innovations.**

*Our investigation of the entrepreneurial culture of Mexico indicates that Mexico is unlikely to find many opportunities to achieve competitive advantage by focusing narrowly on high-technology innovation. However, economically significant opportunities do appear to exist to create high-value-added businesses in non-high-technology areas, including opportunities to develop and commercialize applications of existing technology. The potential opportunities include both export and domestic markets and, with some exceptions, do not appear to be the focus of any existing governmental entity, at least not one that relates these opportunities to a venture capital culture. While effort to foster entrepreneurship in this domain appear to be worth pursuing, this also appears to be a domain where start-up businesses cannot develop without significant government involvement. In general, high-value-added ventures go through sustained periods of development before they are capable of generating revenues, and even longer periods before they are profitable. The widespread low earnings and liquid savings levels in Mexico, and the risk of failure and being compelled to accept inferior re-employment all discourage entrepreneurship in these areas. To a degree, this is addressed by our first*

*recommendation, where existing SME platforms help to overcome the disincentives that start-up entrepreneurs would face. But existing SMEs are likely to be unsuited to pursue some of the opportunities.*

***Specific Recommendations:***

- **Structure and Administration:** As it is likely that, at early stages, ventures in this domain cannot be initiated without support for the entrepreneur to defray foregone earnings and enable reasonable re-employment if the venture fails, and as existing government entities in Mexico are not focused on this domain, it appears to us that responsibility would need to be assigned to a new or existing entity to oversee a program similar to the grant-style program CONACYT is developing for launching high-technology start-ups. That model, for simplicity, relies on government-supported seed grant providers that resemble seed-stage venture capital funds. The granting entities are tasked to identify and mentor start-up ventures, with no or little expectation of realizing a return to the funding agency, but with rapid transfer of responsibility and co-investment by a for-profit investor. The vehicles we have in mind are not incubators in the traditional sense, as their focus is on mentoring and development of business competency, rather than on supporting by providing office space and basic support facilities,
- **Development and Support of Seed Grant Programs:** We believe the most efficient way to control investment selection is by offering to provide financing to privately-operated seed grant funds, the performance of which is assessed based on ability to initiate ventures that are able to attract early-stage funding for-profit risk capital funding in a reasonably short period and not on investment return (which, by design, should be zero). If seed grant programs are to be successful and to have credibility with later-round investors, return on investment must be taken into account even in the initial grant allocation process. The grant providers must demonstrate sound investment disciplines, even when providing funds at the seed or pre-seed level. However, as the initial funding is public, the return at the grant level can include broader considerations that will investors who provide later-stage financing.
- **Opportunity Identification and Assessment:** The government entity that is responsible for this program would not be involved directly in selection of ventures. Rather, the government entity would be charged with responsibility for evaluating the proposals of prospective seed fund managers. Such identification should appropriately be based on the perceived opportunity of the fund to launch ventures that can, based on their market and the capabilities of the fund manager, achieve competitive advantage. Thus the government entity would screen proposals to establish seed funds based on the potential competitive advantage of new firms in Mexico in the market that the fund would target and assessment of the ability of the fund manager to select and mentor ventures with high potential.
- **Mentoring:** Because the ventures that would be targeted by these seed funds would not involve high technology, and would require mentoring to make them suitable for investors, it is likely that appropriately qualified fund managers and other mentors can be found among the ranks of retired business professionals. In addition to their valuable experience in dealing with Mexico's turbulent economic history, people in this group already are supported by social security, and possibly some

private savings, do not need to find re-employment if a venture the fund is mentoring fails, and also may be looking for fulfillment.

- Follow-on Investment/Exit: Among the responsibilities of the seed fund managers would be to configure the ventures in which it invests for early for-profit investment by early-stage venture capital funds and high-net-worth individuals. Thus, the manager would help the entrepreneur to develop and understand the value of transparency, accurate reporting, and clear evidence of track record, and would promote early investment and assumption of responsibilities by a for-profit investor. Fund managers would also have responsibility for staging development of the ventures and making appropriate decisions to modify or abandon their investments.
- Self-assessment: We also recommend development of user-friendly self-assessment tools and templates that prospective entrepreneurs can use to help them determine whether they might be candidates for funding by one of the seed funds, and, depending on the scale of the overall effort, of self-assessment tools that prospective seed fund managers can use to help them assess their attractiveness as fund managers, including their propositions as to how the fund would be able to identify ventures with the potential for achieving competitive advantage.
- Education: With this new opportunity being made available, some people who have not previously considered entrepreneurship will find themselves in need of education related to opportunity identification and assessment, cash needs assessment, business planning, financing, etc. Appropriate education modules should be developed and made available broadly, as a means of encouraging otherwise well-qualified people to participate.
- Staging and Evaluation of Program: Critical factors bearing on the success of this effort are the ability to establish an entity or charge an entity with responsibility for the program, including establishing a base level of funding, the ability to attract appropriately qualified seed fund managers, and the ability of the managers to identify start-up ventures and attract for-profit investors to them at early stages. These hurdles can be tested in sequence, and abandonment would be necessary if any one of them could not be accomplished. It will be necessary to conduct a first round of investment in seed funds and for the funds to deploy those investments and act as managers/mentors for a reasonable period before ultimate viability of the concept can be assessed.

**3. Publicly supported efforts to foster high-technology innovation should be refocused, at an early stage, on potential for commercialization of the innovation, offset by inability of the private sector to act without public support.**

*The economic theory behind government investment in research and development is that pure research efforts are hard for the private sector to fund. This is because the commercial benefits of pure research, if they exist at all, are largely unforeseeable and property rights to the fruits of the innovation are difficult to define and acquire. Arguably, public funding occurs because potential total benefits warrant making the investments for the benefit of the society. Based on this principle, there is no economic rationale for concern that CONACYT's grant programs have often failed to yield commercial applications that can be clearly traced to research grants.*



*However, the rationale for emphasizing pure research in Mexico is not very compelling, and the rationale for placing more emphasis on commercialization in Mexico is clear. With regard to pure research, if anticipation of significant benefits for the society is used as a criterion for funding pure research, then a number of pure research projects in Mexico might not be pursued. The emphasis on social benefits also implies that the projects that receive grant funding should be those where researchers in Mexico have a competitive advantage in completing the research successfully and efficiently. Competitive advantage is harder to assess in areas where the commercial benefits are highly uncertain, but can be addressed by requiring researchers in Mexico to provide rationales for why they believe they can conduct the research more efficiently and cost-effectively than researchers elsewhere, or why researchers in Mexico would bring a unique perspective to the broad research question, or why conducting the research in Mexico is valuable to Mexico, even if the effort substantially duplicates efforts elsewhere.*

*With regard to applied research, similar criteria should be used. In addition, it is important to address the question of why, though the research is valuable to Mexico, the private sector is not capable of or sufficiently motivated to fund the research. It is likely that application of these criteria to applied research proposals will lead to funding projects that are focused on applications that have commercialization potential in Mexico or applications where Mexico would have a competitive advantage of commercializing the research in a broader market, and where private property rights to the control use of the technology would be difficult to establish and enforce.*

#### **Specific Recommendations:**

- **Funding Priorities:** Base grant support partly on early assessment of the potential for commercialization, using competitive advantage criteria and insufficiency of private-sectors incentives to determine which applied research projects to support with public funds.
- **Grant recipients:** Allocate grant support to entities that can demonstrate their understanding of and commitment to commercialization. For large and established entities, commitment to commercialization can be demonstrated based on the recipient's track record. In a university environment, commitment to commercialization can be demonstrated by the emphasis placed on commercialization of technology in the engineering, science, and business curricula. Alternatively, a grant recipient can demonstrate commitment to commercialization by demonstrating that the research effort would not make economic sense to the grant recipient unless the recipient were committed to commercialization of the research.
- **Grant Staging based on Commercially Relevant Milestones:** Stage the disbursements of grant funds, with staging linked to achieved milestones. Emphasize the path to commercialization in structuring funding milestones. For example, developing the business case for commercialization of the technology should be introduced at the earliest feasible point. Assessments of competitive advantage and market potential should be integrated into the funding process in parallel to technological milestones. Early emphasis on commercialization can prevent developing an application only to discover that commercialization potential, as developed, is negligible, and that the application will need to be modified to make is attractive to the market.

- Follow-on Investment/Exit: Grant-based public support is warranted as long as private funding is not feasible or not feasible without partial funding from public sources. Staging and milestones should recognize that the feasibility of full private funding of a commercially viable application of technology increases as the technology approaches to point where commercialization is feasible. Grant funding should continually challenge the entrepreneur/researcher to develop private funding sources as the research effort progresses. It would make sense to discontinue public funding at the point where full funding from venture capital or high-net-worth individuals becomes feasible. Feasibility of private funding should be an element of the funding proposal and of the milestone and staging reviews.
- Education and Advising: Researchers who are accustomed to pursuit of grant funding that is not based on potential for commercialization will need to develop new perspectives on project selection and new capabilities to assess the potential for commercialization. Appropriate education modules should be developed and made available broadly, as a means of enabling researchers and research-oriented entities to make the transition to the increased emphasis on commercialization.
- Self-assessment: We also recommend development of user-friendly self-assessment tools, templates, and grant application guidelines that entrepreneurs/researchers can use to help them determine whether they might be candidates for grant funding that is based on potential for commercialization of technology that would not likely be pursued by the private sector without public support.
- Evaluation of Program: A critical factor bearing on the success of this effort are the ability of grant-oriented researchers to transition to projects that place more emphasis on the potential for commercialization and/or the emergence of a new group of researchers who are able to develop proposals for applications of technology with potential for commercialization. Either group will require education and/or advising to make the transition effectively. A second critical factor is that private funding produces commercializable technology, but does so by crowding out private sector efforts that otherwise would have occurred. To evaluate the efficacy of the program in the short run and to accelerate the transition, the funding agency(ies) should maintain records on the reasons for not approving grant proposals, should advise researchers when their proposals do not sufficiently address potential for commercialization, competitive advantage, and unavailability of private sector development resources. Longer term, the funding agency(ies) should conduct post-audits of realized commercialization as compared to commercialization potential assumptions upon which grant funding decisions were based. The goals of post-auditing are to improve the project funding decisions and to increase incentives of researchers to pursue commercialization.

**4. Government entities in Mexico need to continue to support creation of risk capital funds, but can have greater impact on private investment in risk capital by improving and focusing their investment discipline.**

*Private provision of risk capital in Mexico faces a number of challenges related to Mexico's status as an emerging economy. First, Mexico's volatile political and economic history has resulted in volatile exchange rates, a gyrating standard of living, shifting competitive advantage, and unpredictable international trade and capital flows. The*

*historical volatility has discouraged illiquid investments of risk capital in Mexico. In addition, political influence traditionally has been important for economic success in Mexico. In this context, Mexico's ability to attract foreign risk capital has been bolstered by government investments in venture capital and private equity funds. Currently, Bancomext, NAFIF, the MIF and IIC of the IADB, and the International Finance Corporation of the World Bank all make direct investments in venture capital and private equity funds. While these activities clearly are helpful, it appears that there is room for them to be even more effective.*

### ***Specific Recommendations:***

- **Investment Discipline:** To an extent, investors in venture capital and private equity funds attempt to rely on the presence of a public investor as an indication that the fund is well managed and deserving of investment. Aside from the alignment of public and private interest that co-investment implies, whether that reliance is warranted depends partly on the discipline that the public investors brings to its investment decisions. If public investors are perceived by investors to be over-extended, lack sufficient analytical capabilities, are motivated partly by interests that are aligned with prospective fund managers rather than investors, or are constrained to only invest in funds with certain kinds of investment objectives, then the public investors will be less effective as indicators of fund quality and will not attract as much private investment as they otherwise might. Public investors are more effective at attracting private co-investment if the public investors employ investment disciplines that are analytically rigorous and free of apparent conflict.
- **Investment Commitment:** Public investor commitments to provide matching funds are less credible than fixed contingent commitments. For example, by committing to invest up to \$10 million, on the basis of matching \$4 of private investment in a fund with \$1 of public investment diminishes the credibility of the public investor's commitment. Instead, it appears that the public investor is avoiding efforts to evaluate the fund and is simply trying to free-ride on the analysis of private investors whose commitments are conditional only on the fund making its minimum for closing. Public investors who make fixed commitments of capital, thus, are more likely to attract outside investment.
- **Risk Allocation:** In part, private investors rely on co-investment by public investors to align public and private interest. However, in the context of the Mexican economy, this alignment is weak. A more compelling demonstration of public commitment to the interest of private suppliers of risk capital is to provide credible guarantees of reasonable downside performance. A public investor might, for example, hold claims that are similar to those of private investors except that the public investor's claim is reduced if the peso loses or gains significant value relative to the dollar. Such an arrangement could effectively insure investors against government-induced macroeconomic shocks that reduce investment value.
- **Investment Focus:** Some narrowly focused strategies of investment are more a response to public investor constraints than to rational investment discipline. The focus exclusively on export business, for example, can subject a fund to catastrophic loss if its currency-related exposure to the demand for exports is not counterbalanced by other kinds of investment. Thus, public investors in risk capital

funds need to define their investment objectives broadly enough not to adversely affect investment performance.

- Co-investment: Public investors in risk capital funds can have a greater impact by seeking to encourage co-investment by high-net-worth individuals. Creation of mechanisms to enable or facilitate high-net-worth individual investment is one way to achieve this.
- Review the SINCA Structure: SINCA's are closed-end mutual funds in Mexico that sometimes receive investment capital from public sources, in addition to from private investors. There is a common view that the SINCA structure in Mexico has not done well. Many SINCA's have fails and those that remain have low values and low liquidity. However, low liquidity is to be expected of this type of investment vehicle. What is more important is that the SINCA's are well managed and capable of making good decisions about investing in private ventures. The advantage of the SINCA structure is that it enables individuals to make small, diversified investments in venture capital. We believe a review is in order of the reasons that SINCA's have not performed well, and of whether it is possible to improve and resurrect this investment vehicle. The P4P initiative currently is looking at this.
- Transparency and Review: The effectiveness of public investors as indicators of fund quality and their ability to attract private co-investment is increased by transparency. Transparency can include disclosing investment decisions, the analytical bases for the decisions, and disaggregated realized performance on venture capital investments.

## **5. Efforts to foster entrepreneurship in Mexico should include attention to enhancing and fostering development of new exit opportunities for early-stage investors in entrepreneurial ventures.**

*In the long run, widespread equity ownership is a key element of a culture of entrepreneurship. Through insurance and pension reforms, Mexico is taking steps to increase equity ownership. However, the strongest link between equity ownership and entrepreneurship is through the entrepreneur's continuing ownership of the venture. Currently, in Mexico, continuing ownership of a successful company by the entrepreneur is an unlikely prospect. Virtually all venture capital and private equity fund managers in Mexico target exit by private sale of the venture to a larger existing company, almost always a foreign company. The entrepreneur, in such cases, may end up owning shares of the public company or being cashed out.*

*It is not surprising that, in Mexico, private sale is the objective. The public equity market in Mexico is not receptive to small and high-risk companies and entrepreneurs generally are unable to arrange financing for a buyout of outside risk capital investors. The lack of financing vehicles for financing exits, however, causes equity ownership of successful Mexican businesses to be exported and causes risk capital providers to concentrate their initial investments of risk capital on ventures where the potential for exit by private sale to an existing business is likely.*

### ***Specific Recommendations:***

- Exit Financing Vehicles: Mexico needs to foster development of exit vehicles that can enable entrepreneurs to compete with existing businesses for acquisition of the outside equity of the businesses they launch. By encouraging formation of leveraged-buy-out funds where the LBO fund's investment is in the form of mezzanine debt with repayment tied to business cash flows, public institutions in Mexico can help entrepreneurs to retain the ownership of the companies they help to build.
- Enhance Returns Profile of Exit Fund Investors: To make LBO approaches to exit attractive to early-stage investors, an entrepreneur who wants to reacquire ownership must be able to offer returns that are comparable to returns from sale to a private acquirer. To accomplish this with greater frequency, investment of public funds with capped returns and subordination to private investors can be used to leverage the supply of capital available from exit funds and lower the required returns to the funds.
- Early-Stage Deal Structure: To increase the likelihood of exits that preserve ownership in Mexico, encourage early-stage investors to employ investment agreements that include LBO-financed exit as more than a fallback. There are a variety of ways to accomplish this, including deal structures that provide the entrepreneur with a call option on the equity of outside investors. The important aspect of this recommendation is that it is important to build awareness of LBO financing as an exit option and to help early-stage investors and entrepreneurs to recognize the potential of this means of financing exit.
- Self-assessment: LBO financing is more feasible when the amount of cash invested by early-stage investors is small compared to the harvest value of the business. One way to encourage exits that retain ownership in Mexico is to develop some simple tools and templates that entrepreneurs and investors can use to test the feasibility of LBO exit depending on the amount and terms of early-round financing. We recommend development of user-friendly self-assessment tools, for this purpose.
- Testing and Evaluation of Program: The initial concern is to analyze the conditions under which early-stage deal structures based on exiting by LBO are likely to be feasible and to understand how those conditions depend on the availability of subsidized financing from public sources. Once the parameters are established, the next critical test is the ability to attract risk capital into exit funds that seek to provide LBO-style financing and of those funds to finance exits from early-stage investments. The ultimate test of success is whether these vehicles are able to preserve the equity ownership of successful new ventures in Mexico.

**6. Efforts to foster entrepreneurship in Mexico should include developing more effective ways for individual investors in Mexico to participate in risk capital investing.**

*Both high-net-worth individuals and the general public, domestically and internationally, are important, yet largely untapped, sources of risk capital for ventures and risk capital funds in Mexico. In the U.S. the ability of individual investors to participate in risk capital investing is importantly constrained by a fabric of federal regulations. Mexico has an opportunity to avoid the impediments that exist in the U.S. and to enable individual investment in risk capital.*

### *Specific Recommendations:*

- Direct and Indirect Investment: Individual investors can invest directly in high-risk ventures and indirectly through risk capital funds, including closed-end (SINCA) funds. Efforts to attract risk capital from individuals should target both kinds of investment.
- SINCA Reforms: As discussed above (Recommendation 4), SINCA in Mexico enable individual investors to participate in risk capital investing as a component of a diversified portfolio of tradable equity. Mexico needs to investigate the reasons for the historical poor performance of SINCA and to determine whether those reasons are addressable through better fund management or regulatory reform. Barriers to international investment in SINCA also need to be investigated, with a view to making foreign investment in SINCA easier and more feasible.
- Individual Investments in Risk Capital Limited Partnership Funds: Risk capital funds operate most efficiently and deliver the highest rates of return when they are able to raise no earlier than when the capital is needed for investment in new venture opportunities. Because of this, and for other reasons, fund managers try to deal only with reputable investors who can reliably commit large amounts of capital and can invest on short notice. The net effect is that most high-net-worth individuals are excluded. This problem is addressable by using trust fund structures to aggregate the risk capital supplied in relatively small amounts by high-net-worth individuals, and investing the money in liquid form until it is needed by the fund. The flow of risk capital can be enhanced by encouraging the use of trust funds to tap the high-net-worth investor market, and by making the opportunities apparent to investors.
- Syndication and Network Investing: Syndication is rare in Mexico because there are few risk capital funds among which syndication is feasible. However, there appear to be significant opportunities for risk capital funds to syndicate with high-net-worth individuals. In those syndications, the risk capital fund is likely to act as the lead investors and individuals are likely to rely on the due diligence efforts of the risk capital fund and conduct only limited due diligence of their own. In effect, the fund's investment helps to certify the quality of the investment opportunity and to enable individuals to make parallel investments. With syndication between funds and individuals, individuals in Mexico would be able to invest in remotely located ventures, a pattern that is uncommon in the U.S. because each investors needs to conduct due diligence and to monitor the venture.
- Facilitating Investment: A mechanism should be developed that would enable remotely located individuals to review ventures that have received significant funding commitments from risk capital funds, and reputable individuals, as well as ventures that have received seed grant funding based on commercialization potential. A vehicle should be developed to enable high-net-worth individuals to co-invest in ventures that have received funding commitments and to make follow-on investments in ventures that have received seed grant. The most cost-effective way to accomplish this is probably to use the Internet to enable individuals to review investment prospects. However, the Internet approach generally has failed in the U.S. It appears that the primary reasons for failure in the U.S. are lack of

adequate pre-screening of ventures and lack of a clear mechanism for high-net-worth co-investing. Our recommendation envisions addressing both of these problems in the manners discussed above. Current discussion of developing a non-continuous secondary market for investing in venture capital can only work if remote investors can co-invest with knowledgeable investors who are able to conduct due diligence, determine a value, and create an appropriate deal structure that included a means of exit.

- **Education:** Individual investors in Mexico need to be educated about how to participate most effectively in risk capital investing. This means they need to understand the expectations of SINCA investors, risk capital fund investors, and direct investors; understand how risk capital appropriately fits into an investor's portfolio; and understand how to evaluate risk capital investment opportunities.
- **Testing and Evaluation:** The SINCA review should be designed to yield specific recommendations to modify the program or to abandon it. If program modification is recommended, criteria for success should be specified and performance of the new effort should be evaluated. Efforts to encourage individual investor to participate in risk capital investing should include an evaluation of the efficacy of the efforts and criteria for continuing or modifying them.

**7. Education is an important input to developing Mexico's entrepreneurial culture. Universities and other educational institutions need to be encouraged through self-interest to develop relevant educational opportunities and to pursue research that is valuable to entrepreneurship and risk capital investing.**

*As discussed in Sections II and III, universities and faculty members are mainly reactive in their efforts to launch entrepreneurial ventures, encourage technology commercialization, and provide entrepreneurship and venture capital education. Some of our other recommendations will increase the motivation of universities to increase efforts in these areas. For example, awarding grants based on potential for commercialization and using course offerings as one means of assessing a grant recipient's commitment to commercialization will encourage universities to develop curriculum relevant to entrepreneurs. However, there is a need to provide additional incentives and encouragement to universities to orient their efforts toward entrepreneurship and venture capital. The following recommendations are in addition.*

***Specific Recommendations:***

- **Accreditation of Schools and Universities in Entrepreneurship Education:** Schools would be more motivated to offer entrepreneurially relevant education if those who did so had a means of distinguishing themselves, their curricula, and their non-degree education and conveying their capabilities to prospective entrepreneurs and investors. Appropriate accreditation would focus on the capabilities that entrepreneurs and venture capital investors need to develop and would focus on whether the school provides sufficient education in those areas, rather than on the availability of specific courses. For example, financial education that is important to entrepreneurs does not necessarily be offered in an entrepreneurial finance

courses, as long as the appropriate subject matter is covered in other finance courses.

- **Research Support:** Provide inducements for faculty to conduct research relevant to entrepreneurship and venture capital in Mexico. In particular, research on competitive advantage assessment, commercialization of technology, equity ownership in Mexico, risk assessment and risk management for ventures and funds in Mexico, and regulatory and institutional impediments to entrepreneurship and ventures capital are areas where research could be valuable.
- **Database Development:** Provide financial support for university efforts to develop publicly available databases that are relevant to assessment of competitive advantage, opportunity identification in Mexico, forecasting, and performance evaluation.
- **Information Transfer:** Provide incentives for faculty members to interact with entrepreneurs and investors in mentoring roles and in transferring academic knowledge to practice.
- **Networking:** Provide inducements to universities to host and participate in high-value-added networking and business development events.
- **Evaluation:** Initiatives focused on universities and other education institutions should be reviewed periodically for impact and relevance.

**8. Efforts to foster the entrepreneurial culture of Mexico should include assessment of the kinds of advisory services that are critical to new venture success and should determine the areas where private service providers can be relied on and the areas where public support is necessary to bring about the availability of essential advisory services.**

*In any area where there is a significant amount of entrepreneurial activity that is supported by third-party investment of risk capital, advisory and other services that are important to entrepreneurs and investors are likely to be provided privately. As noted in earlier discussion, the degree of specialization these private service providers can justify is limited by the size of the market for the services. In general, this implies that the largest cities in Mexico will have an adequate support structure of privately supplied advisory services. This is less likely in smaller markets.*

***Specific Recommendations:***

- **Assessment of Needs:** In each area where Mexico has the potential to develop competitive advantage, it would be useful to identify the range of advisory and other support services that are important to new venture success and how specialized the service providers need to be to be effective. Based on the list of identified needs, availability of essential services should be assessed.
- **Opportunity Identification:** Important services may be missing either because the market for the service is too small because potential service providers have not recognized the opportunity. If private provision is feasible, efforts should be made to bring the opportunity to the attention of prospective service providers. Empresas integradoras, for example, are private service providers that have supported development of some industries in Mexico. Businesses that are served by the



integrated service provider can acquire up to 30% of the integradora. Integradoras offer access to markets, branding, financing, managerial skills, etc.

- Inducements or Opportunity Abandonment: In cases where the market is too small to support provision of sufficiently specialized service providers, Mexico can either offer inducements to private providers or can decide to abandon the opportunity to develop competitive advantage. The decision to offer inducements is an industrial policy choice that depends on local economic development considerations and may involve subsidies, protection, or other approaches. Whether, in specific cases, such inducements are warranted depends on considerations that are beyond the scope of this report.

**9. Efforts to foster the entrepreneurial culture of Mexico should include a comprehensive review of the infrastructure (broadly defined) that enables and supports entrepreneurial activity and risk capital investment. Where feasible, elements of the infrastructure should be introduced or modified to be more supportive or less obstructive.**

*Effective entrepreneurial effort and risk capital investing depend on an enabling and supportive infrastructure. Aspects of infrastructure that are important to entrepreneurship and risk capital include the legal environment, regulation, taxes, and information. A detailed analysis of infrastructure issues is beyond the scope of this report and a number of infrastructure issues already are being addressed in related reports. A brief summary of the issues and the thrust of our recommendations follow:*

***Specific Recommendations:***

- Information: The importance of data on markets and competition to effective entrepreneurship and risk capital investing is discussed in other portions of this report. In the U.S. this kind of information is produced mainly by public agencies, though private provision increasingly is becoming feasible and common. Mexico needs to engage public and private resources in developing the databases that entrepreneurs and investors need.
- Regulation: Regulations pertaining to investing, creation of investment vehicles, pass-through opportunities, and securities issuance should be reviewed with an emphasis on removing unnecessary impediments to entrepreneurship and risk capital investing.
- Legal: The legal structure needs to be reviewed with an emphasis on strengthening private property rights and contract enforcement, including contracts that give important rights to minority shareholders.
- Taxes: The tax structure of Mexico needs to be reviewed for the purpose of reducing the disincentive effects of the tax regime. Particular attention should be given to the effects of value added taxes and income taxes, and the incentives of small businesses to under-report revenues and earnings.
- Business formation: The structure of permits and licenses required to start and operate a business need to be reviewed with the intent of reducing barriers to starting new ventures.

- Education: Public education requirements should be reviewed with a view to improving the relevance of public education to entrepreneurship and investing.
- Small Business and Entrepreneurship Policy: Review existing policies and practices with a view to making them more effective and consider creation of safe harbor provisions that enable small businesses to establish themselves more easily.