

To ignite venture creation and growth, governments need to create an ecosystem that sustains entrepreneurs. Here's what really works.

THE BIG IDEA

How to Start an Entrepreneurial Revolution

by Daniel J. Isenberg

In the latest Ease of Doing Business ranking from the World Bank, one country made a spectacular leap—from 143rd on the list to 67th. It was Rwanda, whose population and institutions had been decimated by genocide in the 1990s. On the World Bank list, Rwanda catapulted out of the neighborhood of Haiti, Liberia, and the West Bank and Gaza, and sailed past Italy, the Czech Republic, Turkey, and Poland. On one subindex in the study, the ease of opening a new business, Rwanda ranked 11th worldwide.

You can see and even smell the signs of Rwanda's business revolution at Costco, one of the retail world's most demanding trade customers, where pungent coffee grown by the nation's small farmer-entrepreneurs is stocked on the shelves. And in Rwanda itself the evidence is dramatic—per capita GDP has almost quadrupled since 1995.

This is the kind of change entrepreneurship can bring to a country. As Rwanda's president, Paul Kagame, put it recently, "Entrepreneurship is the most sure way of development." He

is not a lone voice: Economic studies from around the globe consistently link entrepreneurship, particularly the fast-growth variety, with rapid job creation, GDP growth, and long-term productivity increases.

You'll see more palpable evidence of surprising entrepreneurial success stories on the Costco shelves. A few steps away from the Rwandan coffee, you can find fresh fish from Chile, which now ranks second only to Norway as a supplier of salmon. The Chilean fish in America's supermarkets were supplied by hundreds of new fishing-related ventures spawned in the 1980s and 1990s. A few aisles over are memory USBs invented and manufactured in Israel, a country whose irrepressible entrepreneurs have been supplying innovative technologies to the world since the 1970s. And just around the corner, the Costco pharmacy sells generic drugs made by Iceland's Actavis, whose meteoric rise landed it, in just 10 years, among the top five global generics leaders.

Rwanda, Chile, Israel, and Iceland all are fertile ground for entrepreneurship—thanks in

no small part to the efforts of their governments. Though the companies behind the products on Costco's shelves were launched by innovative entrepreneurs, those businesses were all aided, either directly or indirectly, by government leaders who helped build environments that nurture and sustain entrepreneurship. These entrepreneurship ecosystems have become a kind of holy grail for governments around the world—in both emerging and developed countries.

Unfortunately, many governments take a misguided approach to building entrepreneurship ecosystems. They pursue some unattainable ideal of an ecosystem and look to economies that are completely unlike theirs for best practices. But increasingly, the most effective practices come from remote corners of the earth, where resources—as well as legal frameworks, transparent governance, and democratic values—may be scarce. In these places entrepreneurship has a completely new face.

The new practices are emerging murkily and by trial and error. This messiness should not deter leaders—there's too much at stake. Governments need to exploit all available experience and commit to ongoing experimentation. They must follow an incomplete and ever-changing set of prescriptions and relentlessly review and refine them. The alternatives—taking decades to devise a model set of guidelines, acting randomly, or doing nothing—all are unacceptable.

But the government cannot do everything on its own; the private and nonprofit sectors too must shoulder some responsibility. In numerous instances corporate executives, family-business owners, universities, professional organizations, foundations, labor organizations, financiers, and, of course, entrepreneurs themselves have initiated and even financed entrepreneurship education, conferences, research, and policy advocacy. As we shall show later in this article, sometimes private initiative makes it easier for governments to act more quickly and effectively, and all stakeholders—government and otherwise—should take every chance to show real leadership.

To make progress, leaders need practical if imperfect maps and navigational guidelines. From what we know from both research and practice, here's what seems to actually work in stimulating thriving entrepreneurship ecosystems.

Nine Prescriptions for Creating an Entrepreneurship Ecosystem

The entrepreneurship ecosystem consists of a set of individual elements—such as leadership, culture, capital markets, and open-minded customers—that combine in complex ways. (See the exhibit “Do You Have a Strong Entrepreneurship Ecosystem?”) In isolation, each is conducive to entrepreneurship but insufficient to sustain it. That's where many governmental efforts go wrong—they address only one or two elements. Together, however, these elements turbocharge venture creation and growth. When integrating them into one holistic system, government leaders should focus on these nine key principles.

1: Stop Emulating Silicon Valley. The nearly universal ambition of becoming another Silicon Valley sets governments up for frustration and failure. There is little argument that Silicon Valley is the “gold standard” entrepreneurship ecosystem, home to game-changing giants such as Intel, Oracle, Google, eBay, and Apple. The Valley has it all: technology, money, talent, a critical mass of ventures, and a culture that encourages collaborative innovation and tolerates failure. So it is understandable when public leaders throughout the world point to California and say, “I want that.”

Yet, Valley envy is a poor guide for three reasons. One is that, ironically, even Silicon Valley could not become itself today if it tried. Its ecosystem evolved under a unique set of circumstances: a strong local aerospace industry, the open California culture, Stanford University's supportive relationships with industry, a mother lode of invention from Fairchild Semiconductor, a liberal immigration policy toward doctoral students, and pure luck, among other things. All those factors set off a chaotic evolution that defies definitive determination of cause and effect.

Further, Silicon Valley is fed by an overabundance of technology and technical expertise. Developing “knowledge-based industry”—the mantra of governments everywhere—is an admirable aspiration, but achieving it requires a massive, generation-long investment in education as well as the ability to develop world-class intellectual property. On top of that, a knowledge industry demands an enormous technology pipeline and scrap pile. Consider that top venture capitalists invest in at best 1% of the

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technology-based businesses they look at, and a significant proportion of that select group fails.

A third limit is that although Silicon Valley sounds as if it's a place that breeds local ventures, in reality it's as much a powerful magnet for ready-made entrepreneurs, who flock there from around the globe, often forming their own ethnic subcultures and organizations in what Gordon Moore, one of the Valley's graybeards, calls an "industry of transplants." And difficult as it is to foster an ecosystem that encourages current inhabitants to make the entrepreneurial choice and then succeed at it, it is even harder to create an entrepreneur's "Mecca."

2: Shape the Ecosystem Around Local Conditions. If not Silicon Valley, then what entrepreneurial vision should government leaders aspire to? The most difficult, yet crucial, thing for a government is to tailor the suit to fit its own local entrepreneurship dimensions, style, and climate.

The striking dissimilarities of Rwanda, Chile, Israel, and Iceland illustrate the principle that leaders can and must foster homegrown solutions—ones based on the realities of their own circumstances, be they natural resources, geographic location, or culture. Rwanda's government took a strongly interventionist strategy in the postgenocide years, identifying three local industries (coffee, tea, and tourism) that had proven potential for development. It ac-

tively organized the institutions that would support those industries by, for example, training farmers to grow and package coffee to international standards and connecting them to overseas distribution channels. Rwanda's immediate priority was to provide gainful employment to millions of people. Its efforts led to about 72,000 new ventures, almost entirely consisting of two- and three-person operations, which in a decade tripled exports and reduced poverty by 25%.

Chile also focused on industries where it had copious natural resources—such as fishing. As in Rwanda, the government took a powerfully interventionist approach to its entrepreneurship ecosystem in Augusto Pinochet's early years, and the dictator's free-market ideology made it easier for Chile's middle class to obtain financing and licenses for fishing operations. The government also weakened labor (sometimes brutally) to reduce new ventures' input costs and kept Chile's currency inexpensive to maintain competitiveness in export markets.

Natural resources often are not a key component of an ecosystem, however. Frequently, entrepreneurship is stimulated when such resources are scarce, requiring people to be more inventive. Taiwan, Iceland, Ireland, and New Zealand, resource-poor "islands" far from major markets, all developed ecosystems based primarily on human capital. So did Israel. In the 1970s and 1980s, its unique ecosystem evolved haphazardly out of a combination of factors, including spillover from large military R&D efforts, strong diaspora connections to capital and customers, and a culture that prized frugality, education, and unconventional wisdom.

3: Engage the Private Sector from the Start. Government cannot build ecosystems alone. Only the private sector has the motivation and perspective to develop self-sustaining, profit-driven markets. For this reason, government must involve the private sector early and let it keep or acquire a significant stake in the ecosystem's success.

Start with a candid conversation. One way to involve the private sector is to reach out to its representatives for early, frank advice in reducing structural barriers and formulating entrepreneur-friendly policies and programs. If the necessary expertise doesn't exist domestically, it can often be found overseas among expatriates. In the 1980s the Taiwanese gov-

Rwanda: From Genocide to Costco's Shelves

Considering that less than two decades ago, almost one million people were slaughtered in Rwanda in 100 days, the country's current standing in global business circles is stunning.

Promoting entrepreneurship has been a key plank of President Paul Kagame's agenda for the nation. In 2001 he launched the Rwanda National Innovation and Competitiveness initiative, which, among other efforts, developed a "national coffee strategy" focused on building a Rwandan Bourbon Specialty Coffee brand. With help from OTF Group consultants, it also identified over \$100 million worth of investments to improve

coffee washing, production, capacity, and marketing. A partnership among agricultural institutes in Rwanda, Michigan State University, and Texas A&M worked to connect local growers to U.S. and European specialty coffee buyers. Two notable events happened in 2006: Starbucks gave Rwanda's Blue Bourbon brand of coffee beans its Black Apron award and introduced it in its stores, and on a visit to the U.S. Kagame met with Costco's CEO, Jim Sinegal, to promote Rwandan coffee. Costco would later become one of the two biggest buyers of Rwandan coffee, purchasing an estimated 25% of the country's premium crop.

Do You Have a Strong Entrepreneurship Ecosystem?

How do you know if you have the essential elements of an entrepreneurship ecosystem in place? To help governments address that question, Babson College has launched a global action-research project, the Babson Entrepreneurship Ecosystem Project. Below is a summary of the framework BEEP uses to assess the crucial elements in an environment, so that governments know where to focus their efforts. Each category represents a key component of a healthy ecosystem. Though not exhaustive, the sample questions listed below will help you gauge where you are.

Do public leaders:

Act as strong, public advocates of entrepreneurs and entrepreneurship?
Open their doors to entrepreneurs and those promoting entrepreneurship?

Do governments:

Create effective institutions directly associated with entrepreneurship (research institutes, overseas liaisons, forums for public-private dialogue)?
Remove structural barriers to entrepreneurship, such as onerous bankruptcy legislation and poor contract enforcement?

Does the culture at large:

Tolerate honest mistakes, honorable failure, risk taking, and contrarian thinking?
Respect entrepreneurship as a worthy occupation?

Are there visible success stories that:

Inspire youth and would-be entrepreneurs?
Show ordinary people that they too can become entrepreneurs?

Are there enough knowledgeable people who:

Have experience in creating organizations, hiring, and building structures, systems, and controls?
Have experience as professional board members and advisers?

Are there capital sources that:

Provide equity capital for companies at a pre-sales stage?
Add nonmonetary value, such as mentorship and contacts?

Are there nonprofits and industry associations that:

Help investors and entrepreneurs network and learn from one another?
Promote and ally themselves with entrepreneurship (such as software and biotechnology associations)?

Are there educational institutions that:

Teach financial literacy and entrepreneurship to high school and college students?
Allow faculty to take sabbaticals to join start-ups?

Does the public infrastructure provide sufficient:

Transportation (roads, airports, railways, container shipping)?
Communication (digital, broadband, mobile)?

Are there geographic locations that have:

Concentrations of high-potential and high-growth ventures?
Proximity to universities, standards agencies, think tanks, vocational training, suppliers, consulting firms, and professional associations?

Are there formal or informal groups that link:

Entrepreneurs in the country or region and diaspora networks—in particular, high-achieving expatriates?
New ventures and local offices of multinationals?

Are there venture-oriented professionals, such as:

Lawyers, accountants, and market and technical consultants who will work on a contingency basis, or for stock?

Are there local potential customers who are:

Willing to give advice, particularly on new products or services?
Willing to be flexible with payment terms to accommodate the cash flow needs of young, rapidly growing suppliers?

ernment engaged with the Taiwanese diaspora, consulting prominent executives in leading U.S. technology companies and establishing ongoing forums to collect their input. The government actually built programs based on the suggestions of these expats, who liked how their ideas were implemented so much that they returned home in droves in the 1990s, many of them to occupy prominent policy positions or run the new plants that were established. For example, Morris Chang, the former group vice president of Texas Instruments, came home and eventually set up and ran TSMC, Taiwan's second semiconductor-fabricating plant.

Design in self-liquidation. In 1993 the Israeli government created Yozma, a \$100 million fund of funds that in three years spawned 10 venture capital funds. In each one, Yozma, an Israeli private partner, and a foreign private partner with proven fund management expertise all invested approximately equal amounts. From the start, the Israeli government gave the private sector partners an option to buy out its interest in the funds at attractive terms—a fact often overlooked by other governments that copy the Yozma model. That option was exercised by eight of the 10 funds, profitably for the government, I might add.

Five years after the founding of Yozma, its remaining assets were liquidated by auction. The government's exit served as market proof that real value had been generated and is one of the reasons that the Israeli venture capital industry not only became self-sustaining but simultaneously achieved a quantum leap in growth.

4: Favor the High Potentials. Many programs in emerging economies spread scarce resources among quantities of bottom-of-the-pyramid ventures. And indeed, some of them, such as the Carvajal Foundation in Cali, Colombia, have dramatically increased income for segments of the population. But focusing resources there to the exclusion of high-potential ventures is a crucial mistake.

In an era when microfinance for small-scale entrepreneurs has become mainstream, the reallocation of resources to support high-potential entrepreneurs may seem elitist and inequitable. But especially if resources are limited, programs should try to focus first on ambitious, growth-oriented entrepreneurs who address large potential markets.

The social economics of high-potential ventures and small-scale employment alternatives are significantly different. Whereas 500 microfinanced sole proprietorships and one rapidly globalizing 500-person operation create the same number of jobs, many experts argue that the wealth creation, power to inspire other start-ups, labor force enrichment, and reputational value are much greater with the latter. One organization that recognizes this is Enterprise Ireland, an agency responsible for supporting the growth of world-class Irish companies. It has created a program specifically to provide mentoring and financial assistance to high-potential start-ups, which it defines as ventures that are export-oriented, are based on innovative technology, and can generate at least 1 million in sales and 10 jobs in three years. The global nonprofit Endeavor, which focuses on entrepreneurship development in 10 emerging economies, has to date "adopted" some 440 "high-impact entrepreneurs," who, with Endeavor's mentoring, are turning their successes into role models for their countrymen.

Not all high-potential ventures are technology based; in fact, I'd argue that the majority are not. SABIS is a perfect example. An educational management organization founded in

Taiwan: Bringing Expat Entrepreneurs Home

Taiwan is an example of how determined government leaders can transform a brain drain into a brain gain.

As University of California Professor AnnaLee Saxenian has reported, that story begins in the 1960s, when engineers left Taiwan in droves to study and work in the United States. During that decade Taiwan's government leaders recognized the country's need for entrepreneurship and began sending delegations to Silicon Valley to learn about how it had blossomed there. By the 1970s many Taiwanese engineers had become technology executives in the U.S. They joined expat industry associations and met on an ongoing basis with policy makers in Taiwan to discuss technical and, later, policy developments. In the 1980s Premier Y.S. Sun established the Science and Technology Advisory Group (STAG),

which included 15 prominent Taiwanese expats (as well as some non-Taiwanese technology executives), to help the government build the scientific and educational infrastructure for an entire generation of technology entrepreneurs.

STAG and other consultations with U.S.-based expats were so successful in helping the government strengthen Taiwan's entrepreneurship ecosystem that the brain drain began to reverse. Between 1988 and 1998, 40,000 Taiwanese engineers returned home to pursue—and create—opportunities. Many became senior executives in new companies, heads of government research and training institutes, entrepreneurs, or venture capitalists, forming the human capital backbone of Taiwan's burgeoning IT components industry.

Lebanon many years ago as one school, SABIS now is one of the world's largest EMOs, teaching more than 65,000 students in 15 countries, with the goal of reaching 5 million students by 2020.

5: Get a Big Win on the Board. It has become clear in recent years that even one success can have a surprisingly stimulating effect on an entrepreneurship ecosystem—by igniting the imagination of the public and inspiring imitators. I call this effect the “law of small numbers.” Skype’s adoption by millions and eventual \$2.6 billion sale to eBay reverberated throughout the small nation of Estonia, encouraging highly trained technical people to start their own companies. In China, Baidu’s market share and worldwide recognition have inspired an entire generation of new entrepreneurs. Celtel’s amazing success as sub-Saharan Africa’s leading regional mobile provider and acquisition by Zain for more than \$3 billion stirred the region’s pride and helped African governments fight “Africa fright” among investors. In Ireland it was Elan Corporation and Iona Technologies, listed on Nasdaq in 1984 and 1997, respectively, that served as guiding lights to a generation of budding entrepreneurs.

Early, visible successes help reduce the perception of entrepreneurial barriers and risks, and highlight the tangible rewards. Even modest successes can have an impact. Saudi Arabia, a nation with a dearth of entrepreneurial ventures (aside from the powerful family business groups), is fighting hard to tear down the numerous structural and cultural obstacles entrepreneurs face. One young Saudi, Abdullah Al-

Munif, left his salaried job, tightened his belt, fought the bureaucracy, and started a business making chocolate-covered dates. He ultimately grew the business, Anoosh, into a national chain of 10 high street stores and turned an eye to overseas markets. Now when Al-Munif appears as a panelist at entrepreneurship seminars, he is swamped by aspiring Saudi entrepreneurs who take inspiration from his bravery, realizing that neither capital, nor technology, nor connections are essential to success.

Overcelebrate the successes. Governments should be bold about celebrating thriving entrepreneurial ventures. Media events, highly publicized awards, and touts in government literature, speeches, and interviews all have an impact.

This is not as straightforward as it may seem, because many cultures discourage any public display of success as boastful or an invitation to either bad luck or the tax collector. Whereas in Hong Kong even small-scale entrepreneurs drive black Mercedes to project their status, in the Middle East flaunting one’s success publicly can attract the envy of neighbors or, worse, the evil eye.

Kenya’s first international call center, KenCall, founded by Nicholas Nesbitt and two partners in 2004, built an international presence by overcoming many bureaucratic and structural barriers, including the lack of a high-speed optical fiber hookup to the international communications grid. The Kenyan government didn’t wait until KenCall became big to sing its praises; even when it was a fledgling operation, the government brought in foreign delegations for visits, promoted the company in official publications and press releases, and hosted an international outsourcing conference. Government officials also used KenCall’s example to push for reforms, which expedited the construction of East Africa’s first undersea optical fiber link—an example of how entrepreneurial success can facilitate structural change, not just the other way around.

6: Tackle Cultural Change Head-On. Changing a deeply ingrained culture is enormously difficult, but both Ireland and Chile demonstrate that it is possible to alter social norms about entrepreneurship in less than a generation. Until the 1980s employment in government, financial services, or agriculture was the main aspiration of Ireland’s young people. There was zero tolerance for loan defaults,

Sub-Saharan Africa: Building Shareholder Value—and Better Government

The story of Mo Ibrahim illustrates how brute-force entrepreneurial success can have a potentially large impact on an ecosystem.

Ibrahim founded a mobile operator, Celtel, in sub-Saharan Africa, which succeeded in building tremendous shareholder value in the face of violent conflict, corrupt governments, and the worst global telecommunications investment mar-

ket in decades. Celtel’s shareholders made a killing when the owners of Zain acquired the company in 2005. Ibrahim used his newfound wealth to create the Ibrahim Index to monitor governance in Africa and the \$5 million Ibrahim Prize to reward democratic leadership. Already bestowed twice, the prize is sending a loud and positive signal to government leaders to enact courageous reform.

Even one success can have a surprisingly stimulating effect on an entrepreneurship ecosystem—by igniting the imagination of the public and inspiring imitators. I call this effect the “law of small numbers.”

and bankruptcy was stigmatized. Parents discouraged their children from setting out on their own, so few nurtured dreams of starting their own business. But by the 1990s, after successful pioneers paved the way, hundreds of new software companies had been launched in Ireland. Some exported products; some went public. Many achieved healthy sales revenues. Just as important, entrepreneurs learned that it was possible to fail and regroup to try again. “If you wanted to be respected and taken seriously, you needed to be a founder with a stake in a company trying to do something,” recalls Barry Murphy, who was national software director at Enterprise Ireland’s predecessor in the 1990s.

In her research, University of Minnesota professor Rachel Schurman has described how Chileans’ negative image of entrepreneurs as greedy exploiters was transformed in just one decade, as a direct result of the Chilean government’s concerted effort to liberalize Chile’s economy. Until the 1980s, Chile’s well-educated middle class wasn’t entrepreneurial, avoided opportunity-driven investment, and preferred to consume rather than save and invest. But by the 1990s, Chile’s new middle-class entrepreneurs were telling Schurman: “Today the youth, everybody, wants to be an entrepreneur. If a successful *empresario* is interviewed in the newspaper, everybody reads it. Why was he successful? How did he do it? It’s a model that never existed before....”

The media can play an important role not just in celebrating wins but in changing attitudes. In Puerto Rico, *El Nuevo Día*, the largest daily newspaper, supported local entrepreneurship by running a weekly page of start-up success stories. On the small island, these stories have quickly become part of the social dialogue and have raised awareness about the opportunities entrepreneurship presents, as well as the tools it requires.

7: Stress the Roots. It’s a mistake to flood even high-potential entrepreneurs with easy money: More is not necessarily merrier. New ventures must be exposed early to the rigors of the market. Just as grape growers withhold water from their vines to extend their root systems and make their grapes produce more-concentrated flavor, governments should “stress the roots” of new ventures by meting out money carefully, to ensure that entrepreneurs develop toughness and resourcefulness. Such measures also help

weed out opportunists.

In 2006 Malaysia’s Ministry of Entrepreneur and Cooperative Development awarded 90% of some 21,000 applicants about \$5,000 each in business support, strong evidence of the government’s commitment to entrepreneurship. The program was part of an affirmative action program largely aimed at indigenous Malays, who were less entrepreneurial than the country’s business-minded Chinese immigrants. Yet Malay entrepreneurs themselves attribute the disappointing results partly to the fact that funding was too loose and even stigmatized the Malay recipients as less capable. More broadly, Malaysian entrepreneurship-development programs, considered by many, including myself, to be among the most comprehensive programs in the world, have been criticized for actually inhibiting entrepreneurship among the Malays by unwittingly reinforcing their lack of risk taking. Similarly, recent reports on South Africa’s Black Economic Empowerment program have reached the conclusion that BEE has discouraged entrepreneurship among the bulk of black South Africans and has benefited primarily the elite and well-connected.

In fact, the hardships of resource-scarce, even hostile, environments often promote entrepreneurial resourcefulness. New Zealanders call Kiwi ingenuity “number 8 wire”: In the country’s colonial days, the only plentiful resource was 8-gauge fencing wire, and New Zealanders learned to fix and make anything with it. Icelandic entrepreneurship is built upon a legacy of “fishing when the fish are there, not when the weather is good.”

For years incubators or entrepreneurship centers that provide financial help, mentoring, and often space to start-ups have been popular with governments. But I have seen scant rigorous evidence that these expensive programs contribute commensurately to entrepreneurship. One municipality in Latin America established 30 small incubators, but after several years only one venture out of more than 500 assisted by them had reached annual sales of \$1 million. Though Israel’s renowned incubator program has helped launch more than 1,300 new ventures, relatively few of them have been big entrepreneurial successes. On the basis of my discussions with Israeli officials, I estimate that, among the hundreds of Israeli ventures that have been acquired at hefty valuations or taken public, at best 5% were hatched in incu-

Hardships and hostile environments often promote resourcefulness. Icelandic entrepreneurship is built upon a legacy of “fishing when the fish are there, not when the weather is good.”

bators. And incubators definitely are not a quick fix. When well conceived and well managed, they can take 20 years or longer to generate a measurable impact on entrepreneurship. Poorly conceived and managed, they can be white elephants.

8: Don't Overengineer Clusters; Help Them Grow Organically. No government official ever got fired for promoting clusters—those concentrations of interconnected companies, specialized suppliers, service providers, training institutions, and support organizations formed around a technology or end product within one area or region. Popularized by Harvard Business School's Michael Porter, cluster strategies have been promoted by governments throughout the world, which tout clusters' key role in fostering entrepreneurship and economic competitiveness. Though entrepreneurial clusters do exist naturally and can be important elements of an ecosystem, there is only questionable anecdotal evidence that governments can play a major role in breeding them. In a rare critique of the cluster mantra, the *Economist* reported:

“Typically governments pick a promising part of their country, ideally one that has a big university nearby, and provide a pot of money that is meant to kick-start entrepreneurship under the guiding hand of benevolent bureaucrats....It has been an abysmal failure....Experts at Insead looked at efforts by the German government to create biotechnology clusters on a par with those found in California and concluded that ‘Germany has essentially wasted \$20 billion—and now Singapore is well on its way to doing the same.’ An assessment by the World Bank of Singapore's multibillion dollar efforts to create a ‘biopolis’ reckoned that it had only a 50-50 chance of success. Some would put it less than that.”

The problem is that over the years people have mistaken Porter's description of the benefits of clusters for a prescription to go out and build them from scratch. In fact, in a 1998 article in this magazine (“Clusters and the New Economics of Competition”) Porter himself anticipated that the dynamics of clusters would be misunderstood by governments:

“Government...should reinforce and build on existing and emerging clusters rather than attempt to create entirely new ones....In fact, most clusters form independently of government action—and sometimes in spite of it.

They form where a foundation of locational advantages exists. To justify cluster development efforts, some seeds of a cluster should have already passed a market test....”

Governments would be better advised to remain sector neutral and to unleash rather than harness people's entrepreneurial energies. They should observe which direction entrepreneurs take and “pave the footpath” by gently encouraging supportive economic activity to form around already successful ventures, rather than planning new sidewalks, pouring the concrete, and keeping the entrepreneurs off the grass. Yet this unglamorous but practical insight is often lost as cluster theory gets translated into government policies that are suspiciously akin to debunked centralized industrial planning.

9: Reform Legal, Bureaucratic, and Regulatory Frameworks. The right legal and regulatory frameworks are critical to thriving entrepreneurship. I have saved the discussion of them for last, however, because they are often the first and exclusive focus of governments, and I've been trying to show that government has a more comprehensive, holistic role to play. Furthermore, legal and regulatory reforms often take many years to push through, and entrepreneurship frequently occurs in their absence. In fact, numerous entrepreneurs have succeeded despite inhibiting legislation and bureaucracy, and have gone on to use their wealth and status to push for reform. Finally, reform won't be truly effective in the absence of all the “softer” approaches government can take to building ecosystems, such as breaking down cultural barriers, educating entrepreneurs, and promoting success stories.

Extensive research points to a number of reforms that have a positive impact on venture creation: decriminalizing bankruptcy, shielding shareholders from creditors, and allowing entrepreneurs to quickly start over. Another helpful reform is to shift workers' unemployment protection from making termination difficult to providing support for the unemployed. Creating and liberalizing capital markets, such as the UK's Alternative Investment Market, can have a stimulating effect as well.

Simplified tax regimes and strong auditing and collection also facilitate entrepreneurship. In Puerto Rico, for example, an ineffective tax regime actually encourages many entrepreneurs to stay small and under the radar so that

they can keep treating many personal expenses as business investments; in this, Puerto Rico is far from unique.

All else being equal, removing administrative and legal barriers to venture formation is a better way to go than creating incentives to overcome barriers. In 2008 the French government, long frustrated by its business sector's lack of entrepreneurial spirit, implemented the Auto-entrepreneur program. It simplified the legal process for creating a small business, allowed entrepreneurs to avoid onerous tax prepayments, and eliminated other disincentives. Over 300,000 new businesses have been started in France under the program—more than 10,000 new starts a month. Admittedly, the overwhelming majority are essentially sole proprietorships, and it remains to be seen how many, if any, will evolve into true growth companies. But as one observer noted, “Perhaps the biggest impact will be to reverse long-held negative attitudes in France about starting a small business.” And France's bold experiment will be an unmitigated success if even one out of a thousand auto-entrepreneurs launches a growth company.

Experiment Relentlessly Yet Holistically

Creating an entire ecosystem is a daunting challenge, but you have to jump in and cover all the bases. Taiwan, for example, strength-

ened several elements of its ecosystem more or less simultaneously. It encouraged research in integrated-circuit design and manufacturing, established Hsinchu Science Park near Taipei, began running integrated-circuit training programs, engaged with U.S.-based Taiwanese technology executives, and passed laws to encourage the development of an indigenous venture capital industry. Israel's Yozma succeeded because it was embedded in an emerging ecosystem that already included some two dozen Israeli public technology ventures, two operating venture capital funds, eager angels and institutional investors, U.S. investment bankers with local operations, professional support services catering to entrepreneurs, and a rich deal flow.

In fact, ignoring the interconnected nature of the ecosystem elements can lead to perverse outcomes. Encouraging young people to have entrepreneurial aspirations, for example, can have a boomerang effect and cause brain drain if those aspirations are foiled by a hostile environment. As Harvard Business School professor Josh Lerner has reported, creating venture capital funds that lack a deal flow and an appropriate incentive structure, like the ones set up by Canada's Labor Fund Program, can actually retard the formation of a private equity sector. Easy government money, handed out indiscriminately, will flood the market with overvalued, poor-quality deals, making it difficult for private equity investors to make money.

Of course, it is neither realistic nor practical to change everything at once. Having a clear map of what an entire ecosystem looks like will help governments take the first steps without losing sight of what comes next.

Effecting such fundamental change in the midst of so much uncertainty requires endless experimentation and learning, and it is important for governments around the world to learn from one another as well, something that doesn't happen often enough. And everyone trying to build an ecosystem should keep in mind that the work is never really done. Two things recently brought this home to me. The first was the launch, by the Commonwealth of Massachusetts and the City of Boston, of a global business-idea competition, MassChallenge. The second was a remark made by an old friend, a prominent Israeli economist and one of the pioneering advocates of technological

Medellín: From Crime-Worn City to Entrepreneurial Breeding Ground

Perhaps no city has worked harder to turn itself around than Medellín, Colombia, which for two decades was blighted by drugs and homicide.

When Sergio Fajardo became Medellín's mayor, in 2003, he brought about a revolutionary cultural change, creating a legitimate entrepreneurial business environment. With a coalition of universities, new private equity funds, large companies such as the local power utility (EPM), private entrepreneurs, the nonprofit Proantioquia Foundation, the social cooperative Comfama, and some diaspora Medellínians, his administration forged a strategy of inclusive pros-

perity. One of Fajardo's focuses was building beautifully designed, technologically advanced public libraries and community centers in the rankest barrios, and setting up microfinance programs to help the poor. Fajardo's other strategies included establishing innovation centers and earmarking a whopping 40% of his budget for education and \$17 million a year to stimulate entrepreneurship. They seemed to succeed by driving out drugs, creating optimism, and reducing violence to the point where Medellín is now statistically safer than Washington, DC, and many other U.S. cities.

Incubators can take 20 years or longer to generate a measurable impact on entrepreneurship. They can also be white elephants.

entrepreneurship: “We don’t do enough to promote entrepreneurial growth in Israel, and if we don’t start soon, we will lose our edge.”

Now, Massachusetts and Israel are two of the most entrepreneurial places in the world. If they’re not satisfied and resting on their laurels, it is a sign that the horizon is always receding—that you can never have “enough” entrepreneurship, there are no right answers, and there is no choice but for policy makers and leaders to continue to experiment and learn how to enhance their ecosystems.

Although the story never ends, the action principles I have listed will help governments move the needle of entrepreneurship in the right direction. Engaging the private sector, modifying cultural norms, removing regulatory barriers, encouraging and celebrating successes, passing conducive legislation, being ju-

icious in emphasizing clusters and incubators, subjecting financing programs to market rigors, and, above all, approaching the entrepreneurship ecosystem as a whole will allow governments to create economic growth by stimulating self-sustaining venture creation. Ireland’s president, Mary McAleese, recognized the extraordinary effect that could have on a society. In 2003 she said: “Today an educated, self-confident, and achieving generation can see the power of its own genius at work in its own land as a culture of entrepreneurship transforms Ireland’s fortunes, creating a new future for our children and an economic success story of remarkable proportions.”

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