

# The Japanese Entrepreneur: Making the Desert Bloom

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# Foreword

Professor Kenichi Imai

“Habitat” is a metaphor borrowed from Ecology to describe the conditions under which entrepreneurial firms can start, grow, become large, and eventually take their place among the major firms of an economy (Miller 2000). The entrepreneurial habitat has in it entrepreneurs, business managers, venture capitalists (VC) and banks; research universities; engineers, scientists, technicians and industrial designers; accountants, finance specialists, marketing and sales specialists; and special government policies and regulations. There are other habitat conditions necessary to develop companies, notably cultural and educational attitudes favorable toward new business creation. (Lee, Miller, *et al.* 2000) When these are working harmoniously at their mature best, we see the ideal conditions to grow rapidly such innovative large firms as Intel, Oracle, SUN, Cisco, Microsoft, Yahoo, E-Bay, Chiron and Genentech. These particular firms of the West Coast of the USA illustrate the maturity of the West Coast habitat during the 1970s through the 1990s.

During this period, the Japanese entrepreneurial habitat has not reached levels of maturity and harmony necessary to grow great venture companies. There have been a few successes in software, games and services, and a few old companies like Kyocera and Nintendo have reinvented themselves into high-tech variants. But mostly the habitat has been harsh and unfriendly to venture companies. The spirit that grew Honda and Sony in the post-war period seems not to hover over today’s habitat.

In this book, we look at this carefully and try to understand why. We do so not with the analytical tools of the economist (though we use their results), but with the observational tools and case studies of the ecologist and the ethnologist. We look at the Japanese entrepreneurial habitat as a cultural phenomenon to be understood by observing

what people do and what they think. We conclude with recommendations for action that are as much cultural and societal as they are economic.

We have great respect for the growth and dynamism of the Japanese economy of the past half century, and for the skills of Japanese technology and business innovators. If steps are taken to mature the entrepreneurial habitat, great new Japanese companies will again grow. It is toward that end that we offer our suggestions for Special Entrepreneurial Zones (SEZ) and Special Innovative Business Units (SIBU). These are, in essence, custom-designed habitats—both regional and within existing large industrial firms.

# 1. Entrepreneurs and Economic Renewal

The recession continues, and the international competitiveness of [Japanese] industry continues to decline.... Neither the government nor business can draw up a formula for Japan's rebirth. For that very reason, there is a rising voice calling for "entrepreneurs" who will bring forth new businesses with revolutionary technologies. In the Japan that has for a long time been called 'the barren land of entrepreneurs,' various efforts are being undertaken. Will entrepreneurial spirit be able to take root in the Japanese economy?

— Asahi Shimbun, "Come, Entrepreneurs!", June 29, 2002

While Americans had been eager to learn from Japanese success during the 1980s, in the 1990s it seemed that the USA had discovered the key to economic growth. Silicon Valley, the Mecca of entrepreneurship and high technology, came to symbolize everything that the USA does right. Students, journalists, and policy-makers made pilgrimages to Silicon Valley to learn its secrets, and numerous books and television programs described the Valley and its entrepreneurs, often in glowing or even reverential terms. Toward the end of the 1990s, the Japanese government resolved to promote entrepreneurial activity and enacted a series of laws favorable to startups. Japanese politicians and journalists declaimed on the need for a new generation of Japanese entrepreneurs who would develop innovative products and restore economic growth.

Expecting startups to rescue Japan from its economic malaise, although appealing in principle, may prove quixotic in practice. Enthusiasm about Silicon Valley notwithstanding, Japan has remarkably little entrepreneurial activity. Japan's startup rate, defined as the ratio of new businesses to existing businesses in a given year, has declined

from about 7 percent in 1970 to under 4 percent in the late 1990s. In the USA, the startup rate has ranged between 12 and 15 percent since the mid 1980s, more than triple the Japanese rate. (Small and Medium Enterprise Agency 2001) According to another study, one in ten US adults were involved in entrepreneurial activity in 1999, while only one in one hundred Japanese adults were so engaged. (Rowen and Toyoda 2002) Not only are Japanese startups fewer in number, they also tend to grow more slowly. Japan can boast no recent success stories like those of Microsoft, Dell, or EBay.

Any mature economy consists of three major components: the trailing edge, the core, and the leading edge. The trailing edge consists of sunset industries that produce goods or services for which demand is falling, generally due to obsolescent technology or changing consumer tastes. Vacuum tubes and kimonos are examples of trailing edge industries. The core consists of mature, relatively slow-growing industries that meet well-established needs, such as the automobile and banking industries. The leading edge consists of young industries that meet new, emerging needs, for example, wireless networking and genetic engineering. As time passes, industries migrate from the leading edge to the core to the trailing edge. Trailing-edge industries decline and eventually disappear. In a healthy economy, new leading-edge industries come into existence frequently enough to compensate for the loss of old trailing-edge industries. In our view, “entrepreneurship” is the process of creating leading-edge industries.

The vision and innovation that characterizes entrepreneurial ventures can also occur within large companies, universities, or government, but usually it seems to occur in startup companies. Therefore, we have focused our inquiry on these companies,

although in Chapter 7 we propose a way that large Japanese companies can achieve effective innovation.

All startups are not equally entrepreneurial. Many startups belong to the economic core, not the leading edge. These startups address well-developed needs with products and services that are not substantially innovative. Most restaurants, retail stores, and IT contractors fall into this category. Such startups do not need to invest much in research and development (R&D). Since they function in mature markets, they grow relatively slowly and contribute little to economic growth. We call them “low-risk, low-return startups.”

Leading-edge startups are different: they invest heavily in R&D in order to create products and services fundamentally different from what has come before. When successful, leading-edge startups can reshape entire economies. Successful leading-edge startups achieve, sometimes almost single-handedly, the entrepreneurial result of creating a whole new industry. Within a relatively short period of time, they attain multibillion dollar market capital values, generate billions of dollars in annual revenues, reward early shareholders with returns of several thousand percent or more, create tens of thousands of jobs, and still have robust growth prospects. Over the last few decades, such startup companies have not appeared in Japan.

Why, in the nation with entrepreneurial heroes like Mr. Honda, and Mr. Morita, are there so few highly successful startups? Why do Japanese startups stay small rather than growing into world leading firms like their older brothers? Do startups have the potential to revitalize Japan’s faltering economy? Can Japan change, within a few decades or less,



from being one of the world's least entrepreneurial nations to one of the most entrepreneurial?

The low level of entrepreneurial activity in Japan has also intrigued other scholars and motivated them to study the Japanese entrepreneurial habitat. Henry Rowen and A. Maria Toyoda of Stanford University examined this habitat from an economic perspective. In our research, we decided to take a route that we describe as “ethnographic,” focusing on personal, organizational, and cultural characteristics of the habitat. The thorough economic analysis performed by Rowen and Toyoda has been a valuable aid in understanding the role of ethnographic factors within the functioning of the habitat as a whole.

In May, 1999, we visited Japan to study the habitat. We conducted a series of interviews with VCs, government officials, university professors, and entrepreneurs. From their stories, we found that the Japanese habitat impedes the formation and growth of startups, especially leading-edge startups.

The startups that survive in Japan are mostly of the low-risk, low-return variety. The predominance of low-risk, low-return startups in Japan has important implications. The Japanese startup sector is less likely to face a Silicon Valley style meltdown, but Japan's low-risk, low-return startups cannot achieve growth rates comparable to their US counterparts. Consequently, we do not believe that Japan's startup sector, in its current form, can drive an economic recovery. If Japan really wants a new generation of startups that will grow into the Sonys and Hondas of the future, the entrepreneurial habitat must change so that leading-edge startups can survive and flourish.

Later in this book, we suggest changes to the habitat of the Japanese entrepreneur. These suggestions derive from our analysis of the problems of the current habitat.

Using stories from Japanese entrepreneurs, we explain how the Japanese and US entrepreneurial models differ and why these differences cause Japanese startups to grow more slowly. The stories are true and unaltered, except for the use of fictional names to protect the anonymity of the persons involved. In Chapter 2, we see how Japanese entrepreneurs tend to have conservative goals. Chapter 3 explores the difficulty of financing a startup in a way that provides a strong foundation for future growth. Chapter 4 discusses the problems that startups face in obtaining the human resources that they need. In Chapter 5, we see how Japanese institutions cripple startups with their procurement policies. Chapter 6 examines the cultural attitudes toward failure and hence the bias toward the aversion of risk rather than the management of risk. This applies to all the relevant societal players, in a phenomenon that we call NIMBY entrepreneurship.

In Chapter 7, we conclude with a number of initiatives that could make the Japanese entrepreneurial habitat more hospitable for leading-edge startups: a procurement program that stimulates demand for startup products, an initiative to facilitate technology transfer to startups, a regional zone that catalyzes entrepreneurship, and special business units that help large companies achieve effective innovation.

## 2. Entrepreneurs: Modest Goals

After graduating from Shizuoka University with a degree in mechanical engineering, N-san joined the ranks of a medical instrument firm. While working there, he became interested in microcomputers and microcontrollers, but his degree in mechanical engineering prevented him from pursuing these interests. Frustrated, N-san quit his job and moved to Kyoto, where he enrolled in a computer science seminar at Kyoto University.

When the seminar ended, N-san and several other engineers from the seminar decided to start a company. In 1990, they raised some capital from ten individual investors and founded N-Soft. The company's objectives were straightforward: do software development jobs on spec for other companies, then return the profits to the investors through dividends. The founders had no plans to develop products or go public.

For the first five years of its existence, N-Soft focused all of its energy on contract work. Then, in 1995, the N-Soft engineers decided to find a clearer business target. Drawing on their experience developing software for embedded systems, they made plans to develop several new products: a flash memory file system, a 16-bit Java virtual machine, and software for remote management of networked devices. When we met with N-san in 1999, the flash memory file system was completed and shipping; the other two products were still in development. Unable to obtain funding from VCs, N-Soft depended on a combination of bank loans and retained earnings to finance its growth. Contract work provided cash to sustain the company, and profits were used to finance new product development.

Although N-Soft was growing, it was still a small company in 1999. The employees numbered fewer than twenty, and all were engineers except for one accounting specialist. N-san was planning to add another ten or so employees over the next few years, mostly more engineers and

some marketing and sales people. Most of the technical hires were embedded systems engineers from large companies who, like N-san himself, had gotten frustrated with the suffocating bureaucracy and oppressive hierarchy of large companies. Rather than hire traditional managers, N-san explained, he wanted management to be a sort of “service” provided to the engineers.

## 2.1. Forces that Motivate Entrepreneurs

We begin our investigation with the entrepreneur, the most important player in the entrepreneurial habitat. The creation of every startup depends, first and foremost, on one or more entrepreneurs who decide to take up the challenge of founding a new company.

What motivates someone to become an entrepreneur? Gordon Bell and John McNamara, two experts on high-tech entrepreneurship, identify two sets of forces: those that “push” individuals out of established organizations, and those that “pull” individuals into creating a new company. Push forces include all the frustrations of working for a large company, such as bureaucracy and office politics. Pull forces include the allure of new technology and the promise of social recognition and financial reward. When these forces are sufficiently large, entrepreneurs begin to appear. (Bell and McNamara 1991)

In the USA, pull forces play a large role in motivating entrepreneurs. Although many American entrepreneurs want to escape corporate bureaucracy, they are usually driven by a desire to develop a superior product, to create a rapidly growing company, and, through the spectacular success of their company, to become rich, respected, well-known, even famous. Role models abound, both older and younger, hundreds of them, from Bill Gates, Larry Ellison, Andy Grove to Jerry Yang. Successful, rich entrepreneurs often leave the company they built to start a new one, and they sometimes switch roles in

the habitat to become venture capitalists. There is excitement in the startup process and risk does not deter them from the pursuit.

For many Japanese entrepreneurs, push forces are more important than pull forces. These entrepreneurs are more concerned about ensuring themselves freedom from bureaucratic control, a steady job and regular salary. They are not pulled by new technologies, superior products, fame, or wealth.

For N-san, push forces alone were sufficient to make him leave his job with a large company: he wanted the freedom to pursue his interests in microcomputers. When he and his fellow engineers decided to found a company, their primary goal was to create a place where they could concentrate on engineering without being distracted by bothersome managers, oppressive hierarchies, or inflexible bureaucracies. N-soft was created to provide comfortable jobs for its founders, not to make them rich.

## 2.2. Conservative Startup, Conservative Capital

When entrepreneurs set out to found companies, they need a source of capital. Just as entrepreneurs have varying risk-return preferences, so do providers of capital. At the low-risk, low-return end of the curve are banks, which demand only small interest payments, but have little tolerance for losses. US venture capital firms, often willing to take multi-million dollar gambles for multi-billion dollar payoffs, occupy the high-risk, high-return end of the curve. Capital providers will not fund startups that they perceive as too risky or insufficiently rewarding. Thus, the entrepreneurs and the capital providers need to share similar risk-return preferences.

Conservative capital providers prefer entrepreneurs like N-san, who want to build a company that will survive indefinitely and provide steady salaries to the founders—and

a steady stream of dividends or interest payments to the capital providers. If investors are more aggressive, they will favor entrepreneurs who want to become rich, enriching investors in the process. US investors would never invest in a company like N-Soft, because their goals—for example, cashing out after five years with a 300% percent return on investment—are too sharply opposed to N-san's. Fortunately for N-san, Japanese providers of capital tend to be far more conservative than their US counterparts.

Japanese entrepreneurs have another reason to prefer conservative providers of capital, especially banks and minority shareholders. As discussed above, Japanese entrepreneurs often found companies to ensure themselves a comfortable way of life. Thus they are usually reluctant to give up control to investors, who will work to maximize short-term profits, potentially jeopardizing the founder's lifestyle in the process (Rowen and Toyoda 2002). This attitude about control is held by many entrepreneurs throughout Asia.

An Osaka VC gave us an interesting example of entrepreneurial conservatism. A fledgling Internet information service operating in the Kansai had achieved early success, and local VCs were eager to invest. The founder, however, did not want investors interfering with his company. With sales of about 400 million yen per year and fat profit margins, he could afford to maintain the business and pay himself a generous salary of about 100 million yen per year. The business provided him with a comfortable salary, so why take any unnecessary risks?

In general, given a choice between full ownership of a small, slowly growing startup and a minority stake in a riskier, more rapidly growing startup, Japanese

entrepreneurs prefer the former. They usually value stability and a good salary over an uncertain promise of future riches.

### 2.3. Japan's Low-Risk, Low-Return Startups

Taken together, the goals of entrepreneurs and capital providers limit the business models available to startups. In the USA and especially in Silicon Valley, only leading-edge startups with high-risk, high-return business models satisfy entrepreneurs and capital providers. High-risk, high-return business models usually involve developing and marketing a new product, a process that requires a large up-front investment and entails considerable uncertainty. Will the product work? Will people buy it? Many products fail, but occasionally a startup creates a “technology hit”—an innovative product that addresses a major need previously unfilled. The Sony Walkman® is a good example of such a technology hit. Companies that score technology hits stand to reap handsome profits from being the first to enter a large new market. In the eyes of US entrepreneurs and VCs, the potential for a leading-edge startup to score a technology hit outweighs the risk of failure.

While US entrepreneurs and capital providers prefer high-risk, high-return business models, the attitudes of Japanese entrepreneurs and capital providers push Japanese startups toward low-risk, low-return business models. Whether seed funding comes from a bank loan or from conservative individual investors, Japanese startups are usually under pressure to turn a small quantity of seed capital into a steady stream of profits as quickly as possible. With relatively little capital to begin with, these startups can afford neither the investment nor the risks involved in a high-risk, high-return business model, so they resort to low-risk, low-return models. In the case of high-tech

startups, this usually means contract work. While not particularly lucrative, contract work provides early and predictable revenues.

Startups that do contract work rarely need experienced managers. As long as the number of employees remains under about twenty, informal management suffices for contract work and even some limited product development efforts. Indeed, the salary of a skilled manager would use up precious capital needed to ensure the survival of the company. The founders of many startups, like the N-Soft engineers, dislike and distrust management and are thus perfectly happy to do without. In general, there seems to be in Japan a lack of respect for the professional practice of management. When SUN was formed, the two technologists (graduate students at Stanford and Berkeley) were joined in the founding team by two MBAs from the Stanford Graduate School of Business, one of whom (McNealy) is still CEO of this large successful firm. By excluding experienced management professionals, Japanese startups often grow slowly or not at all. In the case of N-soft, the company grew at an average rate of less than two employees per year for ten years.

We do not mean to say that there is anything wrong with Japanese low-risk, low-return startups. These startups have an important social function. They provide a comfortable way of life for their employees, produce valuable products and services, and generate modest returns for investors. However, low-risk, low-return startups choose early profitability over up-front investment leading to an uncertain, but potentially lucrative, payoff. Such startups cannot grow big enough, fast enough to revitalize an entire economy. In the “barren wasteland of entrepreneurs,” they are destined to become small oases of comfort, not the large green irrigated fields that provide economic growth.



### 3. Venture Capital: Not Yet Mature

S-san is a rare find among Japanese salarymen. His first major break with salaryman norms was to change jobs in mid-career, switching from one of Japan's large companies to another. In his second position, he built the firm's semiconductor business from the ground up. Then, believing that Japanese semiconductor companies were focusing too much on fabrication and not enough on the increasingly lucrative and knowledge-intensive area of chip design, S-san made another unusual decision: he left his company to found a startup, taking several engineers with him.

Vcs turned down S-san, but he forged ahead with his startup, S-Chips, all the same. In 1990, the firm began doing contract design of microchips, called "large-scale integration" (LSI) design because of the large number of components integrated onto a single silicon wafer. Exploiting his industry contacts, S-san was able to find plenty of contract work. A large Japanese video game machine company had benefited from S-san's advice in the 1980s, and it repaid the favor by giving S-chips a chance as a supplier. Under the experienced leadership of S-san, S-chips grew rapidly. Sales reached 1.1 billion yen by 1992 and 10.8 billion yen by 1996.

In 1995, S-Chips convinced a major Japanese venture capital firm to provide mid-stage funding and began developing its own product line. By the late 1990s, S-Chips had over 100 employees, and was generating annual revenues of 30 billion yen from contract LSI design and products for transmitting security camera feeds over computer networks.

S-san had learned much about Silicon Valley during his years in the semiconductor business and professed to understand the Silicon Valley style of rapid growth and cashing out through an IPO. Indeed, S-Chips even had a joint venture in Silicon Valley that it had formed together with a large Japanese company. When the Japanese government legalized the

use of stock options in startups, S-Chips was the first company to use them. The company went public on the JASDAQ in 1998, only nine years after its founding, and, by mid-1999, the share price had more than doubled from 2,850 yen to about 7000 yen.

S-Chips' robust growth proved unsustainable. Even in 1999, some threats were visible: despite S-Chips efforts to migrate from contract work to more profitable products, 80 percent of the firm's revenues still came from contract work for a single large company, the video game machine maker that had helped S-Chips in its early days. Revenues peaked in 2000 at 54 billion yen and dropped sharply in 2001 to 40 billion yen.

### 3.1. Startups Need Venture Capital to Accelerate Growth

S-Chips grew much faster than the typical Japanese startup. This happened primarily because S-san, unlike most Japanese entrepreneurs, was determined to expand rapidly and take the company public within ten years. S-san was himself an experienced manager and he brought skilled engineers with him from his last company, so the S-Chips team had a healthy balance of management talent and technical expertise. Perhaps most importantly, S-san had a strong human network that helped him get contracts from large Japanese companies.

Although S-Chips grew rapidly by Japanese standards, it is not a true leading-edge startup, but rather an extraordinarily successful case of the Japanese low-risk, low-return entrepreneurial model. The S-Chips business model was fundamentally similar to that of N-Soft, discussed in the preceding section: S-Chips started off doing contract work, then used profits from contract work to finance expansion and, eventually, product development. S-san's aggressive growth targets, connections with large Japanese firms,

and management skill enabled him to expand much faster than the founders of N-Soft could or would.

Despite its success, S-chips demonstrates the limitations of high tech contract work. Since the revenues from contract work are proportional to hours of labor, the company can grow only as fast as it adds employees. Although S-Chips did to develop its own products, it proved unable to escape contract work. 80 percent of the firm's revenues still came from contract work for a single customer in 1999. Although the firm was publicly traded and had annual revenues of 30 billion yen, it was still a niche supplier heavily dependent on its primary customer.

The S-Chips story exemplifies a common form of Japanese entrepreneurship in which an experienced salaryman—often an engineer, but, sometimes, a manager like S-san—leaves his old company to found a startup. The old company often supports the founder, buying its products and sometimes even taking a small equity stake. Since large Japanese companies tend to be unwilling to talk with, let alone buy from, startups (an issue that we will explore in more detail below) entrepreneurial success often hinges on the network of human relationships built up by the founder throughout his career. These relationships are a mixed blessing, however, because startups often end up trapped in the role of niche suppliers to a few customers. Furthermore, since large Japanese firms rarely involve contractors in the product development phase, contractors end up designing to their customer's specifications and have little room to innovate. (Dasher 2002)

S-Chips looked much like a leading-edge startup: it had an experienced CEO, engineers, and aggressive growth targets. What S-Chips did not have was venture capital to fund new product development and lay the foundations for exponential growth. When

S-san tried to raise funds from VCs at the outset, they turned him down. Without VCs willing to provide financing, contract work was the only way for S-san to build a sustainable company. Only after the company could show several years of strong growth and annual revenues in excess of a billion yen per annum did VCs agree to provide mid-stage financing.

In the USA, VCs play a prominent role in almost every story about startups. VCs invest large amounts of money, generally millions of dollars, in a small number of startups. The VCs take large equity stakes in their portfolio companies and, by the second or third round of financing, the founder has usually been reduced to a minority shareholder. One or more seats on the Board of Directors are occupied by VCs. Using their power on the Board and their close relationship with the entrepreneur, they play an active role in shaping the startup's development. Determined to protect their investment, VCs will not hesitate to fire a CEO or insist upon other dramatic changes. The financial backing and active management participation of VCs with aggressive financial goals helps US startups to grow rapidly.

The Japanese venture capital sector has not yet matured sufficiently to support leading edge startups. Compared to the USA, there is less venture capital available in Japan. The mechanisms that VCs use to liquidate their investments are not well developed, causing VCs to avoid early stage investments vital to leading edge startups. (See Section 3.5). Venture capital funds are structured in ways that discourage risk-taking and staffed with talent from conservative financial firms, who have been trained to avoid risk and have little or no experience with startups and high technology.

### 3.2. Venture Capital Scarce by International Standards

Venture capital investment comes in two forms: loans and equity. Loans expose venture capital funds to less risk, since they receive a fixed return over a fixed period and have a senior claim on the assets of the borrowing firm in case it fails. Equity investors, by contrast, cannot be certain of when they will be able to liquidate their investment or what return they will obtain. If the firm fails, they will only receive a fraction of what remains after the creditors have been paid—often nothing. Since lenders are more insulated from the success or failure of the companies in which they invest, loans are often considered not to be real venture capital. In Japan, however, due to the conservatism of venture capitalists and the reluctance of entrepreneurs to sell equity to investors, loans are a major component of venture capital investments. Hence we will consider both loans and equity holdings of venture capital funds.

Japanese venture capital investment, measured as the value of VCs' loan and equity portfolios, has grown dramatically since 1985. From about 300 billion yen in 1985, investment increased more than five-fold to a peak of over 1.7 trillion yen in 1991. Then, after the bubble burst, investment decreased to about 1 trillion yen in 1998. These totals conceal an important transformation in the loan-equity investment mix. Loan volume increased rapidly during the bubble years and then contracted as credit tightened after the collapse. From 50 percent of total investment in 1985, loans grew to 81 percent of the total in 1988, then fell to 18 percent by 1998. (Nakagawa 1999) Thus most venture capital financing now comes in the form of equity investment, a form more suitable for leading-edge startups.

The dramatic contraction in the volume of loans means that Japan has considerably less venture capital investment now than in 1991. Moreover, international comparisons show that Japan has relatively little venture capital. At the end of the 1990s, Japanese venture capital investment amounted to only 0.02 percent of GDP, the lowest among a sample of twenty nations and dramatically lower than the 0.5 percent of GDP in the USA (Rowen and Toyoda 2002) Even taking into account the impact of the Internet bubble, which inflated the value of American venture capital investment and attracted capital into venture capital funds at an unsustainable rate, Japan's store of venture capital is much smaller than USA's and has grown far more slowly. To create a generation of leading-edge startups, more venture capital will be necessary.

### 3.3. Lack of Exits Inhibits Early-Stage Investing

VCs will only invest in a company if they can liquidate the investment within a reasonable period of time, generally about five years. The practices that allow early investors to withdraw their capital and realize the gains on their investment are called "exit strategies." The exit strategies preferred by VCs in the USA are merger and acquisition (M&A) and initial public offering (IPO). In Japan, venture capital investment has been hindered by the fact that neither M&A nor IPO has developed into an effective exit strategy.

#### 3.3.1. Mergers and Acquisitions face Cultural Obstacles

M&A is not commonly used as an exit strategy in Japan. In recent years, M&As have been used in only about one tenth as many VC exits as IPOs. (Kenney 2002) In part, this reflects the low level of Japanese M&A activity. Only 225 M&As occurred between Japanese companies in 1995, as compared to 7,203 between US companies during the

same year. M&A activity more than quadrupled in the late 1990s, but it remained far below the U.S. level. (Small and Medium Enterprise Agency 2001) The recent increase in M&A activity has the welcome consequence of building social acceptance and familiarizing legal and financial professionals with the process.

An important barrier to the acquisition of startups by large companies is that large companies prefer to develop new technologies internally rather than to buy them. When a startup company innovates with an interesting technology, engineers at the large companies believe that they can develop something better, so they push for developing it internally instead of acquiring the startup. The unwillingness of large companies to use technology developed by startups obstructs entrepreneurship and makes large companies less competitive. We discuss these problems in Chapter 5.

If a large Japanese company does acquire a startup, it faces considerable difficulty integrating the people and cultures of the two organizations. Since startups have relatively little hierarchy, it is not clear what rank and salary the startup's employees should be given. Pay cuts and demotions would disgruntle the startup's employees, while generous terms would arouse jealousy among employees of the large company. The employees of the startup, accustomed to a flexible and fast-moving corporate culture, are likely to chafe at the rigid and bureaucratic culture of the larger company. We suggest a way to overcome corporate culture clash in Chapter 7.

The attitudes of Japanese entrepreneurs also hinder the use of M&A as an exit strategy. As we observed earlier, Japanese entrepreneurs do not want to give up control of their companies. In addition, the founders and employees of Japanese startups are often

engineers who had become dissatisfied with large company life, and such persons are unlikely to favor acquisition by a large company.

There is another reason, one that is more subtle and therefore often overlooked because it is a cultural characteristic. Japanese society tends to associate acquisition with failure. M&A is not seen as simply a normal and natural exit option. The unwillingness to be viewed as failures, in a culture that has no tolerance for failure, gives entrepreneurs a strong motivation to avoid acquisition as an exit option.

### 3.3.2. Initial Public Offerings: Signs of Improvement

IPO has proved a somewhat more successful exit strategy than M&A in Japan, but relatively few companies go public and they take many years to do so. From 1989 to 1999, Japan averaged about 84 over-the-counter IPOs per year, as compared to over 500 IPOs per year in the USA. (METI 2000) The average age of Japanese firms at IPO is twenty-seven years, much longer than the five to seven year average for US startups. (Nakagawa 1999) With so few companies going public and so many years from founding to IPO, VCs cannot expect to be able to liquidate early-stage investments within a reasonable amount of time.

Venture capitalists want to invest in companies that can go public or be acquired within five years. Since M&A is not a viable exit strategy and most companies take decades to go public, relatively mature firms within five years of an IPO are most attractive to Japanese VCs. Consequently, Japanese VCs have tended to invest at much later stages of corporate growth than US VCs. In 1996, only 42 percent of Japanese VC disbursements went to companies under ten years old, as compared with 83 percent of US



VC disbursements. Over the last few years, however, Japanese VCs have been making more early stage investments, a trend that will be discussed further below.

The lack of IPO activity and of early-stage investment reinforced each other in a vicious cycle perpetuated by the excessively stringent requirements of the Japanese stock exchanges. Lack of early-stage investment caused startups to grow slowly; slow growth caused startups to take a long time to qualify for listing on the Japanese stock exchanges; and the long time required for an IPO caused VCs to avoid early-stage investment. As a result, Japanese VCs would not provide early-stage funding to companies like S-Chips, forcing them into low-growth business models.

Over the last few years, the barriers to IPOs have begun to erode. In 1999, the Tokyo Stock Exchange added a new section, called “Mothers,” which has more lenient listing requirements than the first and second sections of the exchange. Jasdaq, an over-the-counter market founded in 1976, eased its listing requirements in the same year. The US firm Nasdaq founded Nasdaq Japan, a market with listing requirements favorable to startups, in 2000. Further progress was made in June, 2001, with the enactment of revisions to the Commercial Code that make it easier for small companies to have IPOs. (Tokyo IPO 2001)

The existence of markets with lenient listing requirements has allowed relatively small and young companies to go public. Average company age at IPO is eight years for Mothers and fifteen years for Nasdaq Japan—still high by US standards, but much lower than the twenty-seven year average time to IPO of firms traded on the other Japanese markets. These companies are mostly low-risk, low-return startups such as IT contracting firms and services. Some recent IPOs have raised 500 million yen or less, an amount that

would be considered absurdly small in the USA. In 2001, Japanese IPOs raised on average only about one tenth as much capital as US IPOs. (Rowen and Toyoda 2002)

The new markets and revised regulations have not led to more vigorous IPO activity. Although relatively younger firms are beginning to go public, the number of IPOs has not risen significantly. (Rowen and Toyoda 2002) Indeed, as of this writing, Nasdaq had announced its withdrawal from Nasdaq Japan and Mothers was attracting very few new listings. The number of IPOs on the three startup-oriented markets is projected to drop more than 20 percent in 2002, to under 120. (Belson 2002)

These setbacks notwithstanding, there are signs that the vicious cycle may be turning into a virtuous cycle now that many structural factors impeding IPOs have been removed. Despite Nasdaq's high-profile withdrawal, the infrastructure is now in place for small, fast-growing companies to go public. With companies able to go public at an earlier time, VCs are beginning to invest earlier. In 2001, the fraction of venture capital disbursed to companies under five years old had reached 56 percent, 30 percent higher than in 1996. (Venture Enterprise Center 2002) Until the high-risk, high-return entrepreneurial model takes hold, IPOs by young companies will be limited in number and raise relatively little capital. However, the viability of the IPO as an exit strategy will encourage VCs to make the early-stage investments necessary for the creation of leading-edge startups.

### **3.4. VC Firms Structured for Conservative Investing**

Leading-edge startups depend on VCs willing to invest large amounts of capital in highly risky companies to achieve high levels of return. In the USA, most venture capital funds are structured as partnerships. The partners have invested their own money in the

fund, so they stand to profit from successful investments. This motivates VCs to take large risks when they believe that the potential returns are high.

Japanese venture capital funds, by contrast, are structured to discourage risk-taking. Only 12 percent of Japanese venture capital firms are independent and almost three-quarters are subsidiaries of banks, securities firms, and insurance companies. In the venture capital firms that are subsidiaries of large financial companies, investment decisions are made by salaried employees. Since these employees have fixed salaries, they have no financial incentive to take risks. Furthermore, large Japanese companies rotate employees into different divisions periodically, so most employees only work in the venture capital subsidiary for a few years before moving to another division. A high-profile failure while in the venture capital subsidiary could cause serious career damage, so employees have a strong motivation to minimize risk.

One way that Japanese VCs reduce risk is by making a large number of small investments. On average, Japanese venture capital funds invest in thirty companies, six times the average for US funds (Rowen and Toyoda 2002). In fact, the largest Japanese VC funds invest in several hundred companies per year (Dasher 2002). These investments are relatively small, averaging about 40 million yen in 1997. US VCs make much larger investments, usually between one and five million dollars (Nakagawa 1999). These highly diversified portfolios reduce the exposure of Japanese VC funds to any single startup.

Japanese VC funds also diversify across economic sectors. High technology sectors, in which about 80 percent of US venture capital investment is concentrated, attract less than 40 percent of Japanese venture capital investment. Information

technology (IT) is a particularly striking example: in 1997, IT accounted for 60 percent of US venture capital investment, but only 23 percent of Japanese venture capital investment (Nakagawa 1999).

Making investments in many sectors has benefits and costs. The primary benefit is decreased exposure to a meltdown in a certain sector. Indeed, Internet-oriented VC funds in Silicon Valley were hit extremely hard by the collapse of the Internet bubble because they had concentrated their investment in a single sector. Yet excessive diversification decreases returns by investing capital in mature sectors that could be invested in more rapidly growing sectors. Another cost of diversification is not developing specialized skills, an issue discussed in section 3.5 below.

Lack of entrepreneurial experience and technical expertise also deters Japanese VCs from investing in leading-edge startups. Unlike US VCs, who are often veterans of successful startups themselves, Japanese VCs have usually spent their lives inside financial conglomerates and lack the necessary skills to evaluate cutting-edge startups. Thus Japanese VCs usually prefer to invest in startups with easily understandable business models and strong prospects for steady, linear growth (e.g., retail stores and restaurant chains) rather than in higher risk ventures (e.g., research-oriented high-tech startups).

### **3.5. Just Money is not Enough**

Funding is only one of many ways that VCs can contribute to the success of startups. In the USA, VCs become deeply involved in the strategy and operation of their portfolio companies. One important channel for this involvement is the Board of Directors. When US VCs invest in a startup, they almost always insist that one or more

VCs receive Board seats. Meetings of the Board of Directors then provide a forum for the VCs to advise the startup's management and participate directly in high-level decision-making. In addition, US VCs provide many other important services such as mentoring for entrepreneurs, assistance in recruiting key managers, and introductions to potential partners and customers.

In the USA, financial returns are the highest priority for VCs. Occasionally the management of a startup is unable or unwilling to make the startup successful. When this happens, US VCs do not hesitate to demand changes in strategy or replacement of key personnel. Not infrequently, even the founder may be judged an obstacle to the startup's success and ousted. The threat of removal by the VCs puts pressure on the CEO to meet expectations. Although the emphasis by US VCs on returns sometimes causes conflicts, it motivates the management of the startup to set and meet aggressive goals.

Japanese VCs typically have much less interaction with their portfolio companies. The methods of US VCs discussed above, non-financial support and direct pressure on the startup's management to succeed, are not widely used in Japan. The lack of these aids to startup success impedes the development of Japanese startups. Moreover, since VCs do not contribute actively to the success of startup companies, Japanese entrepreneurs are less likely to seek venture capital investment.

Japanese attitudes about corporate governance also obstruct the participation of VCs in their portfolio companies. Corporate governance in Japan has tended to focus on protecting the welfare of employees rather than the rights of investors such as VCs. In particular, Boards of Directors are usually seen as the highest level of management, not as a vehicle to protect investor interests. Outsiders and investors do not usually sit on the

Board. Replacement of the CEO by investors unsatisfied with his performance is socially unacceptable in Japan, and is frequently impossible in startups since founders often hold a majority interest. As a result, Boards of Directors function poorly as a channel for VC participation in the management of Japanese startup companies.

## 4. Human Resources: Critical Shortage for Startups

K-san moved to New York with his family when he was six months old. He attended elementary school in New York, then returned to Japan for junior high and high school. An aspiring cartoon artist, K-san also had an intense interest in computers and did free-lance programming jobs to earn spending money. He entered one of Japan's prestigious private universities, dropped out to work for a computer graphics company, and then left that company for a graphics hardware startup. The startup soon went under, and K-san spent some time free-lancing as a hardware engineer. He later found a job with a major US software firm and worked in the USA for several years before resigning over a dispute with a senior executive.

This career, tumultuous by Japanese standards, led K-san to found his own company, K-tech. The startup began doing contract work in 1989 and, in less than two years, developed its own product, a multimedia development suite for digital video editing and CD mastering. The startup gradually entered new markets, developing web browser software for video game machines and a real-time Java operating system for PDAs and car navigation systems. About half of K-tech's sales still come from CD-ROM related products, and K-tech has gotten involved in CD standards development. When we talked with K-san in 1999, the company had profit margins of over 80 percent.

The startup's initial growth was financed through contract work, but later K-tech sold shares and warrant bonds to investors, banks, and life insurance firms. At one point, K-san managed to obtain funding from the Ministry of International Trade and Industry, although he had to find a personal guarantor for the loan since the company was not yet public. Looking back, K-san credits the MITI program with helping K-tech to become more professional by requiring quality control reports, wage charts, and mountains of other paperwork.

Despite his position as the CEO of K-tech, K-san still thought of himself as an engineer. He was running the company because he could not find anyone else to run it: skilled mid-level managers at large companies are on the elite track and will not risk joining a startup.

K-tech does not hire fresh university graduates. The university is play-time, K-san says, so fresh graduates have not learned how to work on a team and how to behave as members of society. They need the basic training that large Japanese companies provide during the first few years of work. K-tech has no trouble attracting engineering talent, however; applications pour in at a rate of over ten per day. Frustrated with the hierarchy, seniority, and “weird rules and customs” of large companies, experienced engineers enjoy the freedom, minimal bureaucracy, and merit-based pay of K-tech.

As of 2001, K-tech had just under two hundred employees and annual revenues of approximately 3 billion yen. The company had not yet gone public.

K-tech was one of the most technologically sophisticated of the startups we visited. Although the firm had started off doing contract work, it quickly developed its own products and became highly profitable. As the company grew, however, human resources became a major obstacle to further expansion. One potential source of engineering talent, the university system, did not produce graduates with the practical skills that K-tech needed. When the number of employees reached twenty, K-san realized that the company could not continue to grow without professional management, but he could not find experienced businessmen willing to leave their posts at large companies to work for a startup like K-tech.

Human resources are as essential to startups as financial resources, yet the Japanese entrepreneurial habitat does not provide startups with the human resources that



they need. The problems are twofold: the university system does not equip graduates with practical skills, and most professionals prefer to work for large companies.

#### 4.1. University Graduates Not Prepared to Work in Startups

A vibrant entrepreneurial habitat requires a large pool of talented and ambitious individuals. Their ambition seeks not only the freedom, excitement and monetary rewards that a startup enterprise may bring. It is motivated by the idea that their new technology or process might have a major and lasting effect upon society, “changing the world,” as the entrepreneurs say.

In many advanced nations, university graduates constitute such a pool. Japanese universities, however, do not prepare young people to take jobs in startup companies. Rather than teaching practical skills, Japanese universities are essentially a four year vacation between the misery of preparing for university entrance exams and a lifetime of work as a salaryman or office lady.

Large companies that hire fresh university graduates assume that several years of intensive training will be required for them to function in the corporate world. New hires are put through internal training programs often considered comparable in rigor to a master’s degree. Since employees are taught what they need to know after they join the company, corporate recruiters do not have much interest in what students study or what skills they acquire at the university. The most important factor in hiring decisions is the prestige of the university that a student enters, not his or her academic achievement. In fact, one Japanese government official told us that large Japanese companies like incoming employees to be blank slates onto which the corporate culture can be inscribed.

Startups like K-tech cannot afford two-year, in-house training programs. They need employees with cutting-edge skills who can add value immediately. K-tech got around the problem by hiring dissatisfied engineers away from large companies, an approach facilitated by the firm's reputation for interesting technology and good business practices. For less established startups, the problem is more acute. A Japanese entrepreneur recently told us that, out of all the technical graduates from Japanese universities, only five to ten percent "are worth hiring," and those all choose to go to big companies. He was bitter about this problem of competent technical training, but resigned to it. He solved his human resource problem by establishing his R&D Center in Shanghai. Our own experiences as temporary members of the computer science departments of two prominent Japanese national universities has given us personal evidence of the inadequacy of training in science and technology at the undergraduate level.

Japanese policy-makers, academics, and journalists often attribute the shortage to *rikabanare*, a compound word meaning roughly "withdrawal from science" that refers to the diminishing interest in science and technology among young Japanese. Yet 7.7 percent of Japanese 24-year-olds hold degrees in the natural sciences or engineering, as compared to only 6 percent of 24-year-old Americans. (National Science Foundation 2002) The real problem may be not the number of Japanese pursuing degrees in science and engineering, but the quality of the training that they receive. Whatever the cause, the shortage of people with technical skills seems to be increasing in severity. In recent years, several Japanese startups have even set up centers in Korea and China to recruit

knowledge workers, train them in the Japanese language, and place them with companies in Japan.

## 4.2. Top People Join Big Companies

Over the last decade, major changes have taken place in the Japanese labor market. The life-time employment system has weakened, job-changing has become relatively common among young people, and college graduates are increasingly willing to take jobs with foreign companies. Overall, the level of flexibility has increased. Nevertheless, the lure of security and status still enables big companies to attract and retain the best and the brightest employees.

In the USA, many of the best professionals join startup companies. Top graduates from university engineering departments and business schools routinely choose to work for startups or to become entrepreneurs themselves. Many high-level executives have left their comfortable positions at large companies to become the CEOs of small startups. These people join startups for the freedom to excel, the opportunity to get rich quickly, and the chance to change the world, among other reasons. Surely these reasons appeal to talented Japanese, too. Why is it that US startups attract top talent easily, while Japanese startups can not?

### 4.2.1. US Startups: Magnets for Outstanding Talent

US startups attract top talent because they offer the chance of enormous financial rewards with minimal risk. Over the last two decades, successful startups have made thousands of dollar-millionaires and a many dollar-billionaires. Almost everyone in Silicon Valley knows one or two people who have made millions of dollars at a startup. Oftentimes these are normal employees—engineers, salesmen, administrators, even

secretaries—who “got in early” and saw their stock options become very valuable. In the USA, these normal people turned multimillionaires are a constant reminder of the opportunity to get rich by founding or working for a startup.

People interested in joining—or founding—a startup in the USA have little to fear from doing so, because society is highly tolerant of failure. When a startup fails, the employees usually suffer little hardship beyond a brief unpaid vacation. The highly flexible US labor market allows them to find new jobs, either with another startup or with a large company.

US society does not consider entrepreneurs whose companies fail to be failed individuals. On the contrary, failure, provided that it did not result from unethical behavior or blatant incompetence, is recognized as a natural result of experimentation and respected as a source of valuable knowledge. Bankruptcy laws protect the personal possessions of the entrepreneur, so people with families and substantial financial assets can found companies without endangering either. The founders of failed companies can get jobs with a startup or an established company, or they can innovate with another idea and try again. VCs are willing to fund entrepreneurs who have founded companies that failed, and many entrepreneurs have achieved successes after one or two failed attempts.

#### **4.2.2. Japanese Startups: Not Attractive to the Best and Brightest**

Compared to the USA, the expected payoff from working for a startup in Japan is relatively low. Up until 1998, stock options were not legal in Japan, making it difficult for employees of a startup to benefit financially from its success. The legalization of stock options, although accompanied by intrusive restrictions, was nonetheless an important step forward (Rowan and Toyoda 2002). Yet stock options alone do not

convince people to join startup companies: people must believe that the startup will be successful and make the options valuable. Given the lack of recent entrepreneurial success stories, it seems very unlikely that, in the next ten or even twenty years, any Japanese startup will grow into a multi-trillion yen company and make its employees rich. The low-risk, low-return entrepreneurial model does not promise attractive financial returns, with or without stock options.

In addition to the unlikelihood of getting rich by working for a Japanese startup, the costs of joining a Japanese startup are high. Large Japanese companies are much more prestigious than startups and pay higher salaries, especially to their elite employees. The elite track at most large companies is a continuous path from college recruiting to retirement, which motivates ambitious Japanese to join a large company after graduation and climb straight up the corporate ladder. Those who deviate from the elite track to work for a startup cannot get back on. For top Japanese professionals, joining a startup means passing up their only chances at high-paying, secure, and prestigious positions in large companies.

Is there a silver lining for Japanese entrepreneurship in the dark clouds of the long economic slowdown that has led to massive “restructuring” and even to collapse of some large firms? Will this be a source of talented individuals to participate in entrepreneurial enterprises? This Shumpeterian “creative destruction” will help. But it is unlikely that the extent of failure among large companies will be sufficiently widespread to significantly increase the availability of human resources for startups.

Social pressure also encourages Japanese to work for large companies. One university conducted a survey asking students whether they would consider joining a

startup and why or why not. Student responses were unanimously negative, with a majority citing parental pressure as the primary reason (Dasher 2002). Japanese parents often push their children to seek secure, prestigious positions at large firms. Another survey indicated that fewer than 30 percent of young Japanese (under 25 years old) would support a family member who wished to become an entrepreneur, in contrast to over 80 percent in the USA (Rowen and Toyoda 2002). Even entrepreneurial success can be a source of tension, since those who get rich too quickly are likely to face resentment and social isolation in intensely status-conscious Japan.

Japanese attitudes toward failure make startups unattractive, even dangerous to careers and lives. Japanese society stigmatizes failure as a mark of inadequacy, so those who lose their jobs in failed startups are likely to have difficulty finding work. The lack of mid-career hiring compounds the problem, especially for managers, since Japanese firms almost always promote from within the company.

For an entrepreneur, failure can mean total ruin. Although Japanese bankruptcy laws are not excessively severe, banks that loan money to startups often reach around the corporate veil by requiring the entrepreneur to pledge his house and car as collateral. Social isolation and estrangement from one's family are not uncommon. Given the cost of failure, it is no surprise that Japanese entrepreneurs tend to be highly conservative and that young professionals shun entrepreneurship.

## 5. Customers Share the Entrepreneurial Burden

X-soft was a Japanese startup that had bid for a government project and been rejected. Wanting to know why the government agency had rejected his product, an X-soft employee requested to meet with the government official responsible for the decision. When, after repeated inquiries, the official finally agreed to a meeting, he explained that, although X-soft had the best product, the government agency had chosen to buy from a certain large company because it had a longer track record and was thus considered more reliable. (Dasher 2002)

After several decades in management consulting and investment banking, M-san left his position as a high-ranking executive to found the Japanese subsidiary of B2B Systems. Based in the USA, B2B Systems developed and sold e-commerce infrastructure software to large US firms. M-san set up an office in Tokyo began trying to sell the software to Japanese firms. Leveraging the human network developed during his career in consulting, M-san was able to convince dozens of large and mid-size Japanese companies to meet with him and discuss the software.

Many potential customers were intrigued by the new technology, but they seemed unable to decide whether or not to buy it. Some companies called M-san back repeatedly, over a period of months, to demonstrate the software for different groups of people. One major Japanese technology company spent six months carrying out an extensive set of performance benchmarks before finally deciding to buy a single copy of the software for a pilot program. A division of another large company had almost decided to buy the software when the manager of the division was replaced in a routine job rotation by someone without any knowledge of electronic commerce, scuttling the project. Many potential customers were still trying to reach a decision after a year of meetings, presentations, and testing.

After about eighteen months, a vicious cycle developed: Japanese firms wanted more features and more comprehensive technical support before they would buy the software, but B2B Systems could not justify the cost of maintaining a large technical support staff in Japan and localizing new versions without any clear indication that Japanese firms would buy the software. Despite continuing interest from many large companies and systems integrators, M-san had to abandon the effort.

## 5.1. Importance of Early Adopters

People and organizations that buy from leading-edge startups are called “early adopters,” because they are among the first to use the startup’s new product or service. Early adopters get the benefits of the new technologies more quickly, but the benefits come at a price: the startup may go out of business, leaving the early adopters with a dead-end technology. By experimenting with new products, early adopters share entrepreneurial risks with startups.

Without early adopters, startups cannot survive. The more early adopters, the more quickly startups can grow into mature companies. In other words, early adopters are an essential part of the entrepreneurial habitat. Japanese consumers are famous early adopters and are thus a valuable resource for startup companies, although consumer demand has stagnated in the 1990s. A more serious problem for startups is that government and large companies are far less willing than consumers to experiment with new technologies.

## 5.2. Government, Big Companies Do Not Share Startup Risks

Large Japanese companies and the Japanese government reduce risk by buying from large companies with which they have long and tight relationships. When the



customer has years of experience buying from a certain large company, they know how the company operates and what to expect. Strong personal and business relationships with the large company are reassuring to the customer. In government purchasing, emphasis on reliability, demonstrated by a successful track record, gives an advantage to established firms (Dasher 2002). When purchasing decisions are made based on personal relationships and reputation instead of on product quality, startups cannot compete.

Information technology startups have faced particularly large hurdles in selling to companies and government. The Japanese practice of job rotation trains employees to be generalists, so many Japanese companies do not have information technology professionals able to evaluate startup products. To reduce risk, these companies purchase complete information systems from large system integrators. These system integrators sit at the top of pyramids of contractors, each of which farms out work to multiple smaller firms below it. At the bottom are the small software houses that develop software on a contract basis. Unable to sell directly to the end user, startups are forced into a contracting relationship with a system integrator, limiting their growth. In addition, Japanese firms generally prefer to pay a premium for customized software than to adapt their business practices to standardized software, so the market for packaged software has remained small (Feigenbaum 1995).

Concern about quality and reliability motivates Japanese companies to be late adopters. Once many other firms have invested in a new technology and the startup that created it has grown into a large and profitable company, the technology will probably be robust. These attitudes work to the advantage of startups located in foreign countries with more early adopters, because those startups can perfect their technologies and build up

impressive lists of customers overseas, establishing a strong reputation that will convince large Japanese companies of the startups' quality and stability. One problem for M-san was that B2B Systems was not yet highly successful in the USA

The tendency of Japanese companies to follow the example of foreign firms has led to a peculiar phenomenon that one Japanese government official termed the "back gate strategy." A Japanese startup, unable to sell its product in Japan, sets up an office in a foreign country where markets are more receptive to startup products. After building up its business overseas, the startup returns to Japan with a roster of foreign customers that it can use to establish its credibility in Japan.

The phenomenon is particularly visible at the Japan External Trade Organization (JETRO) incubator in Silicon Valley. JETRO intended the incubator as a vehicle to support Japanese startups that want to expand internationally, but an official associated with the incubator told us that many startups use the incubator as a way to establish their credibility and gain access to large Japanese firms. These startups sometimes form alliances with the Silicon Valley affiliates of large Japanese companies, and then use those alliances as a crowbar to pry open the door of the parent company back in Japan. Since large companies do not feel confident evaluating startup technology themselves, a JETRO official said, they are much more willing to deal with startups whose technology has been stamped "world class" by an affiliate in Silicon Valley.

The consensus-oriented decision-making processes of large Japanese companies are not well suited to early adoption of new technologies. Rather than giving individual managers independent authority over procurement, most companies require that a group of people sign off on the decision to purchase a new product. This approach works fine

for late adoption, because when a new technology has been successful in the marketplace and has proven value, a consensus to buy it can be formed relatively quickly. For early adoption, however, the uncertainty surrounding the emerging technology causes internal disagreement and slows the creation of a consensus. M-san found that customers often required a year or more to reach a decision, positive or negative. Moreover, since no one wants to be blamed for a bad decision, most group members avoid pushing too aggressively for or against buying a new product.

For leading-edge startups, the year or more required for large companies to make purchasing decisions can be deadly. Unlike low-risk, low-return startups, which become profitable early and can survive indefinitely, leading-edge startups invest large amounts of capital to develop new products and hire engineers, managers, marketing people, and sales staffs. Most leading-edge startups cannot afford to keep the entire company in operation for a year or more while waiting to see whether potential customers will buy its product. Entrepreneurial vibrancy depends on customers capable of making timely decisions about whether or not to buy new products, because these decisions tell startups whether to raise more capital and ramp up production or to shut down and free their human resources to pursue other opportunities.

The slow adoption of information technology in Japan offers an instructive example of the conservatism of Japanese firms. According to an OECD study, only 15 percent of Japanese capital investment went to information technology in 1999, as compared to 30 percent in the USA. Late adoption reduces risk, but at a cost: the USA's larger investment in information technology contributed to faster economic growth. The willingness of big US companies to experiment with new technologies and business

practices also helped fuel the growth of numerous startup companies. The Japanese practice of buying expensive, tailor-made information systems from large system integrators created no such opportunities for startups with innovative technologies. Given the Japanese information technology purchasing model, said a senior official of JIPDEC (Japan Information Processing Development Corporation), there was “almost no hope” for a Japanese IT startup to grow like Oracle did.

### 5.3. Missing Out on the Benefits from Horizontality

Many Japanese high technology companies prefer not to buy technology from outside the firm. In the words of the US high-tech industry, these companies suffer from the “not invented here” syndrome: if we didn’t invent it, we don’t want it. The “not invented here” syndrome was not invented in Japan. Many large US companies such as DEC and IBM had this self-defeating trait until the microcomputer revolution of the 1980s. In the USA, however, companies that tried to develop everything in-house, called “vertically integrated companies,” found themselves unable to compete with “horizontally integrated companies.” A horizontally integrated company conceived a business strategy, did its own architecture and design for its product line, and handled marketing and sales. But its product was “assembled” from many layers of other technologies that were products of fast-moving innovative smaller firms from whom they purchased. Sometimes even the assembly was outsourced. Hewlett Packard, for example, made a success with one of its computer product lines for which not a single part of the entire computer system was manufactured or programmed by an HP employee. What is the consequence for vertically integrated firms? They can not move fast enough in times of very rapid innovation. IBM went through a corporate life-threatening period before

changing strategy. DEC, which built everything, from the processor chips up to the operating system, lost ground to SUN, Hewlett Packard, and others, eventually dying as an independent corporation.

The benefits of horizontal integration in rapidly changing industries were demonstrated by the success of Silicon Valley, home of many young, horizontally integrated firms, and the decline the Route 128, an area near Boston dominated by vertically integrated firms (Saxenian 1994). Buying new technologies from other companies, often startups, allowed horizontally-integrated companies to bring new, feature-rich products to the market more quickly than their vertically-oriented competitors.

The large Japanese high-tech companies do not seem to recognize the benefits of horizontality—higher rates of innovation, often lower costs and most importantly shorter time to market. Rapid time to market allows early penetration of products based on new technologies and enables customer “lock-in.” It is difficult for others to dislodge a good product that has a large market share (although it happens). When Japanese companies choose to develop a technology in-house rather than to buy it from a startup, they sacrifice valuable time and perhaps innovation.

If the product’s technology layers were important enough, one could imagine that a large vertically integrated Japanese company could buy them by buying the smaller companies that produced the layers. But as we have observed above, such M&A activity rarely happens in Japan. Apparently, large Japanese companies underestimate the opportunity cost of time.

Would it not be simpler for the large Japanese firms to purchase the technology layers from innovative smaller Japanese firms or startup firms? This would serve their own interests as well as the interest of the national and regional economies.

What we have termed the “leading edge” is a frontier that moves faster each year. The acceleration can lead to the “creative destruction” of large companies, as Shumpeter described decades ago. Japan may be in the process of becoming a laboratory in which the rest of the world can observe “creative destruction” as it occurs.

## **6. Small Chance of Failure, Small Chance of Success**

### **6.1. Japan's Fear of Failure**

In the preceding chapters, we examined aspects of the Japanese habitat that hinder entrepreneurship. Japanese entrepreneurs value stability and security over growth. The venture capital industry has not matured to the point where it can support leading-edge startups. Talented professionals willing to work for startup companies are in short supply. Large companies and government do not provide a receptive market for startups' products. Any one of these problems would create a serious obstacle to entrepreneurial vitality; taken together, they create an almost insurmountable barrier to the success of startup companies.

These problems are not unrelated. Many are connected in complex feedback loops, making it difficult to separate causes and effects. Yet one motif seems appears again and again, underlying every major trend that we have discussed. That motif is risk aversion or, simply put, the fear of failure. Risk aversion permeates Japanese society and, since entrepreneurship is inherently risky, stifles entrepreneurial activity.

Not all Japanese are risk averse. Several of the stories we have told feature entrepreneurs who made very risky career moves, rendered more risky by the enormous challenges facing Japanese startups. To cite a few striking examples, M-san gave up his prestigious position at the head of a foreign affiliate to open the Japanese branch of an US Internet startup and K-san dropped out of an elite private university to pursue his interest in computer graphics.

These adventurous entrepreneurs notwithstanding, Japan is highly—perhaps even increasingly—conservative. Japanese society stigmatizes failure and, consequently, most

people and organizations take drastic measures to minimize risk. Although minimizing risk can prevent failure, it also precludes experimentation and innovation. Avoiding risk means stepping back from the leading edge.

At the same time, Japanese politicians, journalists, and businessmen express a romantic desire for an entrepreneurial flowering to bring new life to Japan's moribund economy. The combination of these lofty expectations and profound risk aversion has led to the peculiar phenomenon of not-in-my-backyard (NIMBY) entrepreneurship.

## 6.2. NIMBY Entrepreneurship

Everyone wants the cheap electricity produced by nuclear power plants, but no one wants a nuclear power plant in his or her backyard. This attitude, wanting to benefit from something without suffering its undesirable effects, is called "not in my backyard" – "NIMBY" for short. Hence NIMBY entrepreneurship is the situation where everyone wants the benefits of entrepreneurship, but wants other people to bear the cost. In the case of entrepreneurship, the benefit is economic vibrancy and the cost is risk of failure. Each of the major problems discussed above traces its roots to NIMBY attitudes in the Japanese entrepreneurial habitat.

**Entrepreneurs** fear losing control of their companies or going bankrupt, because society refuses to share entrepreneurial risk. The ostracism of failed entrepreneurs acts as a sign that says, "Start a company at your own risk. If you fail, no one will help you." This is NIMBY par excellence. The difficulty for individuals to recover socially and financially from failure deters talented individuals from starting companies and motivates entrepreneurs to adopt low-risk, low-return business models.



**VCS:** Japanese capital owners are unwilling to take on the risk of providing serious backing to leading-edge startups. Most venture capital funds put together a highly diversified portfolio of tiny investments and avoid early-stage investing. Banks and insurance firms structure their venture capital subsidiaries to avoid perturbing the corporate bureaucracy, subjecting them to firm-wide job rotation and compensation policies that discourage risk-taking. Rather than sharing entrepreneurial risk and reaping fifty percent returns, Japanese capital owners wall off their backyards and harvest five percent returns.

**Human resources:** The vast majority of Japanese would prefer to work for large, established companies. They would prefer that their family members work for large, established companies. Although many students express interest in entrepreneurship, almost all compete for positions with large companies. Elite students who take jobs with large corporations and parents that discourage children from joining startups: both are refusing to share the costs of entrepreneurship.

**Customers.** No startup can succeed without customers to buy its products. Yet large Japanese companies and the Japanese government are, by and large, unwilling to bear the risk involved in buying products from startups. To reduce the risk of costly mistakes, large Japanese institutions are late adopters of new products, emphasize reliability and relationships over functionality, and purchase turn-key IT solutions from large systems integrators. If corporations and government organizations want innovative startups to grow, they need to adopt earlier and emphasize functionality over reputation in procurement decisions. Fortunately, judging from the US experience, the benefits of aggressive investment in emerging technology usually outweigh the risks.

### 6.3. Sharing and Managing Risk

For entrepreneurship to thrive in a society, entrepreneurial risks must be shared. Creating a leading-edge startup involves more risk—both financial and personal—than most individuals or small groups of people can tolerate on their own. To make the risk bearable, many other players in the entrepreneurial habitat need to help bear the risk. Risk-sharing takes many forms: supporting a friend or family member who wants to start a company, choosing to take a job with a startup instead of a large company, hiring a failed entrepreneur, leaving a large company to become the CEO of a startup, investing early in startups, buying innovative products from startups, providing professional services to startups in exchange for stock options. Risk-sharing is actually a certain kind of risk-taking, in which some of the risks faced by entrepreneurs and startups are assumed by other habitat players.

Because the NIMBY attitude toward startup businesses is so strong in Japan, risk sharing by habitat players is unlikely to occur spontaneously. The “invisible hand” that guides individual decision making is conditioned by the decision maker’s model of his world—his assumptions and attitudes—and is moved by self-interest. Therefore, it is necessary for governments at the national and prefectural level to change the entrepreneurial habitat in many ways, changing the “rules of the game,” so that attitudes, assumptions, and perceptions of self-interest will change. In the next chapter, we offer suggestions for creating working models of how to alter the entrepreneurial habitat.

The key to entrepreneurial success is not simply taking more risks, but taking the right kinds of risks. Risk must be managed.

Managing risk means evaluating the risks and potential benefits of different possible actions and choosing the action that maximizes risk-adjusted rate of return. Information technology purchasing provides one example. US companies hired IT specialists who could evaluate IT investments and gave them considerable authority over purchasing decisions. During most of the 1980s and the early 1990s, this approach seems to have enabled US firms to effectively manage the risks of adopting new IT technologies. At the end of the 1990s, risk management gave way to excessive risk-taking, as US companies overestimated the potential rewards from IT products and overspent. Japanese companies, at the other extreme, hired expensive system integration companies, an approach that avoided risk rather than managing it.

Effective risk management requires the existence and use of skilled professionals capable of gauging risks and potential payoffs. At present, Japan has many professional risk avoiders and few risk managers. To develop professionals skilled in the management of entrepreneurial risks, the entrepreneurial habitat must motivate individuals to take intelligent risks. In Japan, a culture of risk aversion has produced many skilled risk avoiders. A culture of risk management will produce skilled risk managers.

To encourage risk-taking, the stigma of failure must be eliminated. Failures must be analyzed and learned from. Entrepreneurs who have failed must be given a second chance through mid-career hiring. Only those cultures that respect failure can live on the leading edge.

## 7. Gardens in the ‘Barren Land of Entrepreneurs’

Japan is not the only government in Asia to recognize the need to promote high-tech entrepreneurship as a means of stimulating economic growth. Beginning in 1965, Taiwan established industrial parks--export processing zones (EPZ). The most successful is the Hsinchu Science-Based Industrial Park, the best effort yet to “transport” the Silicon Valley habitat to an Asian country.

The establishment of Hsinchu Park was largely a government-based initiative, but it had the significant backing of the business community, the venture capital community, the universities, and the various R&D Institutes. The government paid for the infrastructure, and gave substantial tax relief and financial incentives. It simplified industrial laws and regulations. It provides venture capital and R&D grants. It initiated programs of cooperation between companies in the Park and the universities and research institutes. And, importantly, it uncoupled its bureaucracy from the operation of the park by delegating authority to a park administration. In short, it created a good habitat for entrepreneurs.

The payoff has been significant. Even as early as 1996, companies in the Park generated revenues of \$11.6 billion. They employed 55,000 workers, of which 5000 had Master’s or Doctor’s degrees. (Ho, 1997)

The government of Mainland China has taken action to challenge India for market share in the lucrative business of software outsourcing. One of the most visible and vigorous of the entrepreneurial software firms has been growing so rapidly that it really can no longer be considered a struggling startup. The firm, Top Group, employs thousands of software engineers, and operates 23 software parks around China. In 2001 they earned \$73 million on revenues nine times larger.

Although they do industrial contracting, the strong base of their business is with the various governments of China-- especially regional and local. For example, they did or are doing the software for the

Sichuan, Nanjing, Xian, and Shanxi tax bureaus; for Anhui province's social security bureau; and for post office operations. TOP is now expanding into the education market.

TOP was founded by three young professors. That is something common around Silicon Valley and Boston but almost unheard of in Japan. (Murphy 2002)

We believe that for leading edge startups to drive Japan's economic renewal, Japanese business and government must build a more productive habitat for entrepreneurs. Japanese society will need to become more tolerant of failure. It must encourage university students, corporate and government purchasing departments, VCs, and others throughout society to become risk managers instead of risk avoiders. The following sections suggest a number of initiatives toward a more productive model. None of these initiatives strike directly at Japanese attitudes toward failure. Such attitudes are probably beyond the reach of concrete policy initiatives. Instead, by rewarding risk-taking behavior beneficial to startups, these initiatives seek to create a virtuous cycle in which risk sharing will lead to more risk taking, leading to better risk management, leading in turn to more risk sharing.

These policy initiatives often require significant departures from current practices. They depend on the ability of established institutions—especially governments and large companies—to experiment with new approaches. The initiatives will almost certainly meet with considerable opposition within these institutions because, as in any experiment, the risk of failure cannot be eliminated.

Established Japanese institutions must recognize that they, too, must take risks in order for Japanese startups to succeed and thereby to promote economic growth.

## 7.1. Buy, Buy, Buy Initiative: Require Procurement from Startup Companies

The United States government many years ago recognized that it was essential for the success of small businesses that the government buy from them—often and in substantial amounts. Such buying is called “small business set-asides” and is mandated by law and carried out by regulatory processes. Government procurements (that is, buying activity) have amounts that are literally “set aside” for special treatment on behalf of small businesses (and also the businesses run by disadvantaged and minority people and women).

The US Small Business Administration describes the program as follows:

“...there are government-wide small business goals stated in terms of a percentage, currently 23%, of the total dollars spent annually by each Federal agency.

The Small Business Act authorizes federal agencies to conduct procurements that are exclusively reserved for small businesses...

The Small Business Reserve is a statutory provision that requires all agency purchases valued between \$2,500 and \$100,000 be reserved for small businesses. It applies when there are two or more "responsible" small businesses that can satisfy the agency's requirement at a fair market price. Contracts in this dollar range are made using simple procedures that make it easier for small businesses to participate.

Even when the government buys research, small businesses receive special advantages.

“Under the Small Business Innovation Research (SBIR) Program, federal agencies having annual research and development budgets in excess of \$100 million will set aside 2.5% for awards to small high-technology firms. These agencies make decisions based on a firm's qualifications, degree of innovation, technical merit, and future market potential...

Under the Small Business Technology Transfer Program (STTP), federal agencies having annual research and development budgets of more than \$1 billion will set aside 0.15% for awards to small high-technology firms that collaborate with non-profit research institutions. These agencies make decisions based on qualifications, degree of innovation, technical merit, and future market potential.”

These policies of the national government to buy substantial amounts from small businesses are mirrored in the policies and regulations of many of the state governments of the US. ( [www.sba.gov](http://www.sba.gov))

Without customers willing to buy from them, startups cannot succeed. Yet in Japan, government policies have focused on increasing the number of startups, not on stimulating demand for their products (Dasher 2002). Policies that support the creation of new startups are not enough. The government must also take steps to aid the growth of these startups by creating receptive markets for their products. This is the goal of our Buy, Buy, Buy initiative.

Governments are major economic actors, so their role in promoting entrepreneurship goes far beyond designing rules and regulations favorable to startups. Through their purchasing decisions, governments have the capability to channel large sums of money into startup companies. The preceding story illustrated how the US government accomplished this with its “small business set-asides” program. The program created a large market to which startup companies could sell, contributing to entrepreneurial vigor in the USA.

### 7.1.1 How The ‘Buy, Buy, Buy’ Initiative Would Work

In the Buy, Buy, Buy initiative, Japanese central and local governments aid startups by becoming model startup customers themselves.

Each government sets aside a small percentage of its procurement budget for buying products made by startup companies.

Large Japanese companies also participate in the initiative under the leadership of the central government. All companies with more than ten thousand employees agree to allocate a certain percentage of their purchasing budgets to startups.

The Buy, Buy, Buy initiative is necessary because, as noted in Chapter 5. Japanese governments and large companies are reluctant to buy from startups. The initiative compensates for this bias against startup products. Of course, startup companies are not the only beneficiaries of the initiative. In time, government and large companies will benefit from adopting leading-edge technologies earlier than they would have otherwise. The initiative will also make large companies more competitive by helping them become more horizontal. The value of horizontality—enabling firms to deliver products with richer functionality in less time—was also discussed in Chapter 5.

Several precautions must be taken to ensure that the initiative does not become a life support system for small companies that are not healthy. Funds set aside for purchasing from startups may only be used to buy from companies that meet certain criteria. First, we suggest that the companies must be under 10 years of age and have annual revenues of less than 1 billion yen. This prevents old or mid-size companies from crowding out smaller startups. Second, companies cannot participate in the program for



more than four years. This gives new startups enough time to get established, but it forces them to graduate from the program rather than settle into comfortable roles as niche suppliers. Other precautions may be needed, and the issue needs to be studied.

## 7.2. IP for Entrepreneurs – License Technology to Startups

In May 2002, NEC USA moved its Silicon Valley offices. As usual, the company invited many business people and engineers to a welcoming reception in the new offices. But the reception on May 31, as it turned out, was not “usual.”

NEC had made a corporate-level decision to generate revenue by licensing some of its intellectual property to those who would benefit from it and could pay for the license. And that meant, first and foremost, Silicon Valley.

The reception was not so much a social event as a technical event, in which several excellent demos were given to an audience that roamed from one demo to another. In every case, the post-demo discussion turned to the possibility of licensing, with NEC USA business staff on hand to answer questions.

Less than two weeks later, Japan’s largest government science and technology R&D organization came to Silicon Valley with a similar purpose. AIST, the National Institute of Advanced Industrial Science and Technology, is the organization into which was merged the famous MITI laboratories, such as ElectroTechnical Laboratory (ETL). AIST organized a widely publicized one day event in Silicon Valley to which the Valley elite were invited, especially the business elite.

AIST was seeking to make known to these people that the new organization existed. More importantly, it wanted to describe and

demonstrate a variety of technologies that it believed would find interest and licensees in Silicon Valley.

In the demo hall, around the circumference were the demonstrations, crowded with visitors. In the center of the hall were special tables, called “business tables,” that were manned by officials that were prepared to discuss the terms for licensing the technology shown in the demos.

Japan is still a world leader in technology and innovation. Measured as a percent of GDP, Japan spends more on R&D than the USA or Germany (Rowen and Toyoda 2002). From 1992 to 1999, the rate of increase in the number of US patents received annually was higher for Japanese inventors than for those of any other nation, including the USA. (OECD 2001) However, a much of the intellectual property (IP) owned by large Japanese companies and government research laboratories is not being used. Some of this unused IP has the potential to become the basis for successful commercial enterprises.

In recent years, Japanese companies and the Japanese government have shown a growing interest in profiting from their store of IP, specifically by licensing the IP to companies willing to pay for it. To facilitate the licensing of university research, the Japanese government passed a law legalizing and subsidizing the creation of technology licensing offices (TLO) at national universities. Over a dozen TOLs have been established (Rowen and Toyoda 2002). As the stories told above illustrate, large Japanese companies and government research organizations are attempting to find foreign licensees in places like Silicon Valley.

The eagerness of Japanese companies and government agencies to license intellectual property presents an opportunity for Japanese startups. The preceding

sections showed that Japanese startups do not have the financial or human resources to pursue advanced R&D. Nevertheless, Japanese startups do have the agility and energy to rapidly commercialize new technologies. The IP treasure that is unused in Japanese companies and research labs could provide the basis for a generation of leading-edge startups.

Transferring technology from large firms and government laboratories to startups is unlikely to occur spontaneously. As shown in Chapters 4 and 5, the hurdles faced by Japanese startups in dealing with large companies and recruiting skilled personnel are very large. It would be very difficult for a Japanese startup to negotiate a technology licensing agreement with a large company and obtain the human resources required to commercialize the technology. Hence, unless action is taken to help Japanese startups participate in IP licensing, much of the benefit from Japan's R&D investment may accrue to foreign licensees.

### 7.2.1 “IP For Entrepreneurs” Initiative

Japanese government and industry should organize a program that assists startups with licensing leading-edge IP from large firms and government laboratories.

This program could take the form of an “IP for Entrepreneurs” initiative. As we envision it, the initiative has several key components. A government office is set up to aid startups in finding attractive IP. When a startup decides to license certain IP, the office helps negotiate a licensing agreement. Since large firms may be reluctant to license IP to startups with uncertain prospects, the government guarantees the licensing fees up to a certain limit. Large firms are given additional incentive to participate in the initiative

by arrangements that give companies a small amount of stock in startups to which they license technology.

Once the startup has licensed the IP, another component of the ‘IP for Entrepreneurs’ initiative assists the startup in obtaining necessary human resources. As a condition for participating in the initiative, large firms and government laboratories agree to loan employees familiar with the IP to the startup that licenses it. These employee loans give startups a source of skilled technical people. In addition, large-company employees will gain valuable experience in the culture of agility and entrepreneurial energy by working in startup companies.

### 7.3. Special Entrepreneurial Zones – Designing A Habitat for Growth

The stories presented previously are true stories that show the current state of the Japanese entrepreneurial habitat. This story is different: it is a fictional story, imagined by the authors, describing events that could happen in the future.

Although industrial giants such as Matsushita, Sharp, and Kyocera already exist in the Kansai, the governments, large companies, and leading universities of the region felt the need to grow more world-leading companies. Regional planners in government, industry, and academia recognized that this could only be achieved through vigorous entrepreneurial activity. Thus these planners joined forces to establish the Kansai Special Entrepreneurial Zone (KSEZ).

The goal of KSEZ was to provide an ideal habitat for high-tech entrepreneurship and to foster the success of leading-edge startups. Located in a suburban science park, geographically separate but easily accessible from the leading Kansai universities and research centers, KSEZ is managed by a board of nine directors that represent the

governments of Osaka, Kyoto, and Kobe, the industrial leadership, and university interests. The chairman of the KSEZ board was hand-picked from a short list of candidates selected by an executive search firm. The candidates had been evaluated for their experience in venture capital, management, and startups.

One KSEZ director recently attended a public ceremony where the annual award for “Top Innovator of the Kansai” was presented. At the ceremony, he was very impressed by an assistant professor who received first prize for a nanotech method for rapidly discriminating between mutant DNA and normal DNA. The director arranged for the assistant professor to present his innovation to the KSEZ board. After investigating the technology and the market, the KSEZ board concluded that the technology could become the basis for a successful company. The assistant professor agreed to participate in the creation of a new company and to serve as its Chief Technology Officer (CTO). He was able to do this on a two-year leave provided for by prior arrangements between KSEZ and the major Kansai universities.

The KSEZ board sought a CEO to manage the startup. For the last startup established in the zone, the KSEZ board had found a successful entrepreneur willing to become CEO, but at the moment none were available. Instead, the KSEZ board recruited a CEO from one of the participating Kansai industrial giants. In the setup of the zone, these large firms had agreed to loan fast-track middle managers to the KSEZ startups to serve as CEOs. Several managers were interested in the new startup and, after a series of interviews, the KSEZ board selected one whom they judged outstanding for his energy, vision, and experience. The manager was loaned to the startup for a three year period. After three years, he would have the choice of staying with the startup or returning to his home company. As prearranged, the company that provided the CEO was compensated with a small equity share in the startup.

Once the CEO had been selected, the KSEZ board brought together the CEO, the CTO, and several business consultants to write the new company's business plan. The plan was reviewed by the KSEZ board, which agreed to provide 100 million yen in seed funding in exchange for stock in the new company. Then, working with one of the law firms that had been invited to establish practices in the zone, the CEO and CTO established BioNano Inc.

BioNano needed many more engineers and biochemists, so it recruited top master's students from universities in the Kansai. In the past, most or all of these students would have chosen to work for large companies. The creation of the zone had changed this, however, because when KSEZ was organized, it had reached agreements with its corporate partners to guarantee positions in their entering classes to students who joined KSEZ startups that subsequently failed. This job guarantee reduced the risk of working for startups. This guarantee was combined with stock options to make the job even more attractive. Therefore, BioNano Inc. was able to hire the human resources it needed to grow.

Soon BioNano soon spent most of its seed funding. The KSEZ board brought together several VC firms that had agreed to fund the zone's leading-edge startups. BioNano presented its current business plan, enhanced by the experience of its first several months of operation. In return for a set of reasonable exit conditions guaranteed by KSEZ, the participating VC firms agreed to make large, early-stage investments. One of the VC firms, PremiereVentures, bought a 40 percent stake in BioNano for 600 million yen.

At that time, BioNano's Board of Directors was restructured into its more permanent form. Board seats were given to the CEO, to a VC from PremiereVentures, and to two outside directors. The outside directors were selected by KSEZ, one for his experience in the bio-tech industry and the other for his expertise in high-tech marketing. One of the outside directors agreed to serve as Chairman of the Board.

After a year of operation, the first version of BioNano's product was ready. As part of the ("buy, buy, buy") agreements that established KSEZ, the participating Kansai companies committed to buy a small percentage of their total procurement from the startups operating in the zone. Seeded by this prearranged market, BioNano's sales increased rapidly.

After three years, BioNano made a small profit on revenues of 2 billion yen. Then a large American biotech company expressed its interest in acquiring BioNano. The KSEZ board facilitated meetings between the American firm and the BioNano Board of Directors. These meetings lead to an offer from the American firm to acquire BioNano for 6 billion yen. The Kansai firms participating in KSEZ, however, had been given the right of first refusal in M&A transactions of KSEZ startups. One Kansai company, a major BioNano customer, had also been considering an acquisition although at a lower price. The company decided to match the offer from the American firm and acquire BioNano.

With its acquisition, BioNano graduated from the SEZ. PremiereVentures achieved an annual return of almost 60 percent. SEZ's seed investment earned it enough money to cover its costs and expand its operations. The Kansai benefited from new, highly paid jobs in a rapidly growing, leading-edge industry. (Fictional story)

Vibrant entrepreneurial activity can make the difference between a region that declines and a region that prospers. In the preceding chapters, we saw that Japan's entrepreneurial habitat functions poorly. What can a region do to redesign the habitat and promote the growth of new companies? To regions struggling with this problem, we propose a special kind of zone that we call a "special entrepreneurial zone" (SEZ).

Within the SEZ, carefully engineered policies compensate for the problems that hinder entrepreneurship elsewhere. Business conditions and government regulations are specially designed to be favorable to leading-edge startups.

The idea of a zone designed to promote certain forms of business activity is not new. Many countries, notably Taiwan and China, have used such zones with considerable success. Such zones are normally called “special economic zones.”

The zone sketched in our proposal is different from simply “economic,” so we have made the ‘e’ stand for “entrepreneurial.” The design of our SEZ is intended to remedy as many defects in the entrepreneurial habitat as possible.

Creating an SEZ requires the participation of all major players in the entrepreneurial habitat. The SEZ must be a joint effort of a region’s governments, companies, and universities. Also essential is the participation of venture capitalists, law firms, consultancies, accounting firms, technology licensing offices, industrial design firms, and others whose services are indispensable to startups. Multilateral initiatives are never easy to implement, but we believe that the importance of entrepreneurship to a region’s economic future will provide a strong motivation for major regional players to cooperate.

Recently, there has been considerable interest in the idea of special economic zones in Japan. However, these special economic zones are very different from the SEZ that we are proposing. Japan’s planned special economic zones cover a full range of economic activity, while our SEZ is narrowly focused on promoting entrepreneurship and small leading-edge startup companies. Furthermore, the zones that are being discussed by the national and prefectural governments generally make relatively small changes over



broad areas—an entire city or prefecture. Our SEZ, by contrast, makes profound adjustments within a narrowly circumscribed area. We believe that such concentrated efforts will be necessary to stimulate behavior markedly different from the status quo.

### 7.3.1. Structure and Organization of the SEZ

Who pays for the SEZ? Where is it located? How is it governed? The answers to these and other logistical questions will play an important role in the ultimate success or failure of the zone. To maximize the benefit of the SEZ to its parent region, the zone must be well-financed, located in a convenient and desirable area, and governed efficiently.

The cost of the SEZ will be shared by regional and national governments. Regional governments pay because the inhabitants of the region will benefit directly from economic growth caused by the SEZ. The national government pays because the nation will benefit from increased tax revenues and exports. Other zone participants also benefit, but they pay in non-financial ways. For example, large companies headquartered in the region gain by economic vibrancy in their home region, but they are asked to supply human resources and markets for startup products instead of cash. The ways that entrepreneurs, large companies, and other zone participants contribute to the zone are described in detail below.

As its name implies, the SEZ is a special zone. It occupies a well-defined geographic area much like a university campus. The location is selected to help attract entrepreneurs, perhaps a suburban science park surrounded by natural beauty or an urban complex in a lively neighborhood.

Admission to the zone is by invitation only. Startups, venture capital firms, law firms, consultancies, accountancies, banks, and other key habitat participants will be invited to set up offices in the zone. Thus the players in this designed habitat are specifically chosen for their policies, people, the excellence of their performances, and their willingness to innovate. The SEZ must “plan for success.”

The management of the SEZ must be suited to the zone’s experimental character. The concept of a zone that comprehensively redesigns the entrepreneurial habitat is new, so mistakes and problems are inevitable. The SEZ should be prepared to learn from its successes and failures by revising its rules and operating procedures, for example, rules governing how startups interact with other zone participants and criteria for admission to the zone.

The capability to make decisions quickly is also important, since leading-edge startups work under intense time pressure. Startups cannot afford to wait for six months or more for the zone to make decisions about funding, human resources, and other critical issues. The need for efficient decision-making is rendered still more important by the many people and organizations that the zone must coordinate.

To increase flexibility and speed decision-making, our SEZ is managed by a board of ten directors. Nine of the directors are representatives from the zone’s sponsors. The tenth director, who chairs the board, is recruited for his expertise in entrepreneurship, venture capital, and management. The board has authority over the policies of the SEZ and decides which startups to admit and how to support them.

### 7.3.2. Entrepreneurs: Admit only the Most Promising

The goal of the SEZ is economic growth. To achieve this goal, the zone provides extensive support to startups that have the potential to grow into large companies. Low-risk, low-return startups grow too slowly to justify the use of precious SEZ resources. In order to concentrate its resources on the most promising and innovative startups, the SEZ must be an exclusive zone open only to startups that meet its requirements.

For a startup to be admitted to the SEZ, the entrepreneur who founded the startup must complete an application process. To be eligible for membership, the startup must still be small in size, with no more than 10 employees, and privately held. Since the goal is economic growth, there is no limit on the age of the startup—old startups may come up with exciting new ideas.

The startup is evaluated on the basis of a detailed business plan that the entrepreneur presents to the zone board. The board evaluates the plan based on its plausibility and growth targets. Only startups whose business plans realistically forecast 15 billion yen in revenues within 5 years will be considered for admission.

When the zone board judges a startup to be sufficiently promising, it will offer the company membership in the zone. However, membership carries several conditions. First, the entrepreneur must accept the idea that, after one or two rounds of financing, he will be a minority shareholder in the startup. Moreover, the entrepreneur must submit to the possibility that he will not have the CEO role in the startup. When and if the SEZ board decides to provide seed funding, it may demand that another person of its choosing become the CEO. The entrepreneur must agree to an active role for the Board of Directors.

Venture capitalists and outside directors will sit on the Board of the startup. Outside directors are selected by the SEZ board for their experience, vision, and willingness to take risks. The startup's Board gets involved in strategic decision-making and can replace the CEO if he fails to meet expectations.

Startups admitted to the SEZ may remain in the zone for a maximum of five to seven years. They will also exit the zone if they are acquired by a large company, have an IPO, or go bankrupt. The SEZ does not require that the startups meet any growth hurdles, because leading-edge startups often have a long R&D period before they begin to grow. We expect that the venture capitalists, selected for their growth orientation, will keep the startup on track and prevent it from turning into a low-risk, low-return company.

One direct benefit to the entrepreneur of joining the SEZ is that the entrepreneur's personal property will be protected. Banks have a history of abusing entrepreneurs by taking their personal belongings as collateral for loans. This will not be allowed for banks that choose to participate in the SEZ. Indeed, equity will be the primary financing tool, thereby avoiding most banking activity. When bank loans are necessary to smooth business dealings, the SEZ provides the necessary guarantees so that the entrepreneur incurs no personal liability.

The SEZ will not wait passively for these entrepreneurs to come calling. It will recruit them actively, attending and sponsoring events likely to attract talented entrepreneurs. When the SEZ board spots an individual with an interesting idea, it will encourage him or her to start a company in the zone and, if necessary, will provide help with writing a business plan and establishing the company.

### 7.3.3. Venture Capital: Financing Rapid Growth

The financing of SEZ startups is designed to support leading-edge business models that require considerable up-front investment. Startups begin with a seed round of 100-200 million yen. The seed capital enables the startup to recruit key people and develop a prototype. Rather than relying on angel investors for seed funding, the SEZ provides seed funding for its startups in exchange for stock. This allows the SEZ to profit when its startups are successful. Depending on the value of the entrepreneur's technology, the SEZ's share is normally about 30 to 50 percent at the end of the seed round. Subsequent rounds of funding dilute the ownership of the SEZ, as well as that of the entrepreneur and early employees.

All financing after the seed round comes from VCs. However, to operate in the SEZ, VCs must undergo a screening process similar to that for startup companies. The zone only wants VCs that will make large, early-stage investments in zone startups. There are two major reasons for this. First, zone startups need large, early-stage investments to fund rapid growth. Small or late-stage investments will force them into low-risk, low-return business models. Second, when VCs make a few large investments rather than many small investments, they have a strong motivation to work for the success of each of their portfolio companies. The larger the investment, the larger the VC's commitment to the success of the startup. The SEZ will want only VCs that are full-fledged partners in its startups, not just highly diversified funds betting on the average returns of the startup sector.

VC firms will be offered admission to the zone on the basis of their knowledge and investing approach. Do the principal investors have international experience in

leading entrepreneurial regions? Do the analysts have sufficient expertise to evaluate high-tech startups? Does the firm use performance-based pay to create an incentive to take risks? VC firms that satisfy criteria such as these are permitted to fund zone startups, on the condition that the VC firms make no investments smaller than 600 million yen and take no equity shares of less than 25 percent.

There are several reasons that, despite the high minimum investment sizes, VC firms will still be willing to invest in zone startups. To begin with, the SEZ will recruit highly promising startups and will help them grow quickly, so zone startups are among the most attractive targets for venture capital investment in Japan. In addition, VCs will be guaranteed Board seats in their portfolio companies. Since the entrepreneur becomes a minority shareholder by the first or second round of VC funding, Board seats give the VCs an effective way to influence the strategy and management of their portfolio companies. Finally, the SEZ will ensure that VCs will be able to exit from their investments in a reasonable amount of time, decreasing the risk of early-stage investing. When possible, this will be done by facilitating M&A or an IPO. If neither of these exit options can be realized within seven years of a VC's investment in a zone startup, the SEZ commits to buy the VC's share of the startup for its fair value as determined by a qualified independent agent.

Because venture capital investment is critical to the success of the SEZ concept, a study of the implications of current tax law and government regulation of investment needs to be done to discover if any changes are needed to insure that the habitat is well-designed for VC investment.

#### 7.3.4. Human resources: Attracting the Best

Startups can only grow as quickly as they can recruit skilled people. As we have seen, insufficient access to human resources constrains the growth of many Japanese startups. In the SEZ, steps are taken to ensure that this does not happen.

SEZ startups will hire technical people out of master's degree programs at universities in the region. To assist zone startups in attracting top graduates, the SEZ will negotiate with its large industrial partners to guarantee jobs to graduates who join startups that subsequently fail. Thus if a zone startup fails, the graduates that work for the startup will receive places in the entering classes of large companies in the region. From the perspective of a job seeker, these guarantees effectively make zone startups as secure as large companies. Together with potentially lucrative stock options, job guarantees are a powerful recruiting tool for SEZ startups.

In addition to technical talent, zone startups also need highly qualified managers to serve as CEOs. The success of a startup depends heavily on the quality of its CEO, so the SEZ will take an active role in selecting the CEOs of startups admitted to the zone. Although occasionally the founder-entrepreneur will be judged to have sufficient managerial skill to be the CEO, in most cases a CEO will be brought in from the outside. When possible, the SEZ will recruit successful entrepreneurs to have the CEO role. However, since Japan has few successful entrepreneurs, it will often be necessary to look elsewhere for management talent. For this reason, the SEZ will negotiate with its industrial partners to loan elite-track managers to zone startups.

In the spirit of regional interest and risk-sharing, the large companies participating in the creation of the SEZ will agree to loan a certain number of elite managers to startup

companies. When the SEZ needs a CEO for one of its startups, it interviews managers from some of the participating large companies and selects one to be the CEO. The large company loans the manager to the startup for a three-year period. At the end of the loan period, the manager may elect to become an employee of the startup or to return to his home company. The large company is compensated for the loan of its employee with a small amount of stock in the startup.

In typical entrepreneurial habitats, the CEO is given a financial incentive by stock ownership or options. When the SEZ hires a successful entrepreneur to be CEO of a zone startup, he or she will receive options to buy several percent of the startup's stock. Although it is not appropriate for CEOs on loan from large companies to receive stock options, they might be allowed to invest personally in the seed round or be given stock options if they choose to become a full employee of the startup.

Foreign professionals can also help meet the personnel needs of startup companies and of the SEZ itself. Thus the SEZ will cooperate with the national government to ensure that there is an easy path for the SEZ and its startups to get access to foreigners with expertise in technology and entrepreneurship. The experience in the USA and Europe indicates that this importation of talent is critically important for success. Technical and business talent for entrepreneurship is scarce, and foreigners find Japan an attractive place to work.

### **7.3.5. Customers: A Guaranteed Market for Startup Products**

Leading-edge startups need a robust early adopter market where they can sell their products. To create such a market for zone startups, the governments and large industries



participating in the SEZ will agree to allocate part of their procurement budgets to zone startups. This is similar to the Buy, Buy, Buy initiative discussed in section 7.1.

The regional governments involved in establishing the SEZ will commit to buying a certain amount of products from zone startups. This amount should be proportional to the number of startups in the zone. We believe that an average of 250 million yen per startup is a reasonable value. There are no requirements on how the purchasing be distributed among zone startups. Depending on what products they need, the governments may concentrate their procurement on a few startups or spread it among many. This flexibility will help prevent governments from being forced into buying unneeded products.

Large companies participating in the SEZ will also agree to allocate a small percentage of their procurement budget to zone startups. As with the government purchasing commitments, the large companies are not obligated to distribute their purchasing among the zone startups in any particular way.

The purchasing commitments for governments and large companies are set at a fixed value in order to encourage early adoption. There may not be any startups in the zone with products that the governments and companies were already planning to buy, so they must seek to adopt new products from zone startups. In order to ensure that governments and companies can find products well-suited to their needs, the SEZ must have startups with products across a broad spectrum of high-tech fields. Allowing purchasing commitments to be calculated over a two or three year period will also help to alleviate problems in matching supply and demand.

## 7.4. Toward Innovative Giants – SEZs inside Large Companies

We have been using the word “entrepreneurship” to mean the characteristics of innovation, agility, and high energy that are found in startup companies. Occasionally, the combination is found in a large company, and we will call this “effective innovation (EI)” to distinguish it from small-company entrepreneurship.

Large companies and economies have much in common. Both are composed of leading-edge, core, and trailing-edge segments. Just as economies depend on the creation of leading-edge industries to replace trailing-edge industries, large companies need new leading-edge businesses to replace declining trailing-edge businesses. Hence entrepreneurship is as important to the health of large companies as it is to the health of economies. How can large companies promote EI? In the preceding section, we described a regional zone designed to promote entrepreneurship. The same concept can also be applied to large companies through the creation of special innovative business units (SIBU). Like the SEZ, the ultimate goal of the SIBU is growth. The SIBU has its own rules and operating procedures designed to facilitate the creation of rapidly growing, leading-edge businesses.

It is important to distinguish between the SIBU and other initiatives sometimes used by large companies to drive innovation, for example special project teams or research laboratories. Japanese companies sometimes organize teams or labs with the goal of creating novel products and technologies. However, these teams and labs, although they may have different goals and operating procedures from other parts of the

company, function within the same corporate habitat. If the corporate habitat is not supportive of EI, the efforts of special teams and labs will be muted. The SIBU is a way to create a new habitat well-suited to the creation and growth of new businesses. Within the SIBU, the new ideas of special teams or research labs can develop rapidly into thriving businesses. Since the SIBU is a whole new corporate habitat, it requires more effort to organize than a team or lab that operates within the old corporate habitat.

The SIBU is located in its own building about fifty to one hundred kilometers from corporate headquarters. Distance is important: the SIBU should be far enough away to develop its own culture, but not so far as to isolate it from the rest of the company. If the SIBU is too far from headquarters, it will be difficult to integrate successful SIBU businesses into the core of the company.

The SIBU will be managed by a small committee. An executive vice president will chair the committee and serve as head of the Unit. The SIBU head should report directly to the president of the company to avoid bureaucratic entanglements. The other members of the committee will be recruited from outside of the company. They will be selected for their experience in the venture capital industry and entrepreneurial business.

To enable the SIBU to recruit and retain the most qualified employees possible, the SIBU will have its own, highly flexible human resource policies. The SIBU committee has control over all hiring and firing decisions within the unit. Qualified personnel may be recruited wherever they can be found, within the company or without. No employee can be transferred into or out of the SIBU without the mutual consent of the employee and the unit. The SIBU will be exempt from corporate job rotation policies, so that employees can develop specialized skills. To deploy its human resources as

efficiently as possible, the SIBU will not be constrained by seniority in promotion decisions.

SIBU businesses will be organized as autonomous entities. The SIBU committee has a role much like that of a startup's Board of Directors. Managers of the SIBU businesses will meet with the committee periodically to report on their progress and get advice on strategic decisions. If managers do not meet the board's performance expectations, they will be replaced by transferring them out of the SIBU.

In terms of purchasing, sales, and accounting, SIBU businesses will be treated almost as independent companies. Neither SIBU businesses nor other divisions of the company will be obligated to buy each other's products. Product quality and cost should take precedence in purchasing decisions. The SIBU must calculate profit or loss for all its businesses as if they were independent firms, charging them for the services provided by the SIBU as well as for any products obtained from other divisions of the company. This will allow the SIBU to gauge the success of its businesses and shut down those that perform poorly.

Most new businesses enter the SIBU from elsewhere in the company. Employees of the large company may propose a new business idea and submit it to the SIBU committee, which will evaluate the idea and determine whether or not to build a business around it. If the idea seems promising, the SIBU committee will assemble a small team of people and give them a small budget—"seed funding"—to develop a business plan for the idea. The employees who submitted the idea will serve on the team under an internal agreement that provides for employees whose ideas are approved by the SIBU to be

loaned to the unit for a six month trial period. The team will also include a manager selected by the SIBU committee to head the new business.

As new businesses begin to grow, they will need to apply to the committee for additional rounds of funding. This approach simulates the process of starting a new company. The SIBU does this to avoid wasting resources on projects that no longer appear sufficiently promising. It also puts pressure on the new businesses to develop solid business plans. New businesses remain in the SIBU until they reach 5 billion yen in revenues, at which point they are set up as new divisions.

The SIBU also has the authority to acquire startups. A team of analysts will evaluate acquisition opportunities and make recommendations directly to the SIBU committee. The analysts will be recruited from within the company, from successful startups, and from leading venture capital firms.

#### 7.4.1 Effective Innovation In Large Companies Is Important To Japan

A children's story pattern that appears in many cultures tells of the small person whose extraordinary skill allows him to overcome the strong but slow giant. But the real world is not a children's story. Usually the giant is victorious. Japan's economy is so large, and the share of the economy that is produced by the giant companies is so large, that effective innovation by these giants is essential to a vigorous Japanese economic recovery.

We believe that the principles and skills of habitat design apply to large industrial firms as they apply to startups. One might argue that it is difficult to do habitat design because a company has a culture into which a SIBU must be situated. There are behaviors and rules and policies that must be shaped. But then so has a region in which a

SEZ is to be situated, and potential habitat players—governments, banks, VCs, employees, and so on—all have behaviors, rules, and policies that must be shaped. We are as optimistic about SIBUs as we are about SEZs.

In the late 1990s, a Japanese giant with an business unit in Silicon Valley thought that it had learned the lesson of effective innovation. It decided to start in Japan a “New Business” center, similar to the SIBU we have proposed. Unfortunately, it implanted the “New Business” center into the existing rigid corporate culture with no thought of habitat design or change. Predictably, the new unit did not perform well. The spirit of innovation died, and the execution was ineffective.

The Japanese economic malaise speaks loudly that it is time for some Japanese giants to perform the experiment correctly-- to engage in habitat design, to bring into being SIBUs, and hopefully to create corporate success stories of effective innovation that rival the growth stories of earlier times.

## **Afterword: What Must Japan Do Now**

Brunner and Feigenbaum have laid out a compelling call to action for Japan. The contribution of new business formation to growth in GDP and growth in employment has been thoroughly demonstrated in many studies so that the major issue as discussed by Brunner and Feigenbaum is how to stimulate the new business formation.

The growth part of the world economy is largely concentrated in the new industries and new services. Although there is still opportunity for growth through increasing productivity and through trade, it is entrepreneurship that creates new companies and whole new industries. Entrepreneurs matter; and habitats in which they can develop matter. Countries that wish to participate in the major growth part of the world economy need to stimulate entrepreneurship and new business formation.

Japan must participate in this growth economy, but can it do so? Japan has many outstanding assets as a basis for entrepreneurship. It has a very highly educated workforce, great technical knowledge, excellent intellectual property, and a treasure of (mostly) young would be entrepreneurs. This talent and knowledge needs to be unlocked to contribute to new business formation. The way to do this is to facilitate the creation of entrepreneurial communities. Brunner and Feigenbaum's proposal of Special Entrepreneurial Zones is directed toward just that goal. These are not Special Economic Zones but are Special **Entrepreneurial Zones** whose focus is on new business formation.

An entrepreneurial community builds on itself by organically developing the features of a favorable "Habitat" for entrepreneurship. We have seen this happen in Silicon Valley, Austin Texas, Boston Massachusetts, and the Hsinchu Science Based Park in Taiwan. We even see the beginning elements of this in the three industrial

clusters in China, that is Zhu Jiang Delta of Guangdong Province, Chang Jian Delta of Shanghai, and the Zhongguancun area of Beijing, as well as in the Multimedia Super Corridor in Malaysia.

The Hsinchu Science Based Park in Taiwan is especially instructive. Here the government separated the Park from the existing industries in Taipei. The result was that the technologists and entrepreneurs in Hsinchu interacted with each other and developed an entrepreneurial “Habitat” that was conducive to much new business formation.

Japanese entrepreneurship is frozen in place. There is some entrepreneurship in the computer games area and in the entertainment sector, but entrepreneurship in the industrial and business sectors is stalled. The government has taken a significant number of regulatory steps that are favorable to entrepreneurship. I believe the government should take seriously the suggestion of establishing Special Entrepreneurial Zones.

There is an enormous amount of technology locked up in large corporations that will not be exploited within the company. Companies should find ways to make these technologies available to entrepreneurs through licensing or joint venture arrangements. Companies as well as governments need to encourage entrepreneurship.

Now is the time and now is the opportunity to unlock the enormous strengths in talent, technology, and the desire to contribute that resides in the spirit of the many would be entrepreneurs in Japan. I have met many young Japanese at Time 24, in Bit Valley, at universities, and at conferences such as the recent Asia Technology Initiative Conference held in Tokyo. They have the talent and the spirit for entrepreneurship. They are a national treasure that needs to be unlocked.



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