

# Japan Responding to Globalism: Innovation & Entrepreneurship

By *William F. MILLER*

The Economist (December 1, 2007) presented what I consider a justifiably optimistic report on business in Japan. It said that Japan has not sufficiently embraced globalism and that Japan ranks low in entrepreneurship compared to other OECD countries. The good news is that both of these features are changing for the better. Let us look behind what is bringing on these changes.

Winston Churchill once said that “Empires of the future are empires of the mind.” The evidence of this in the developed world is quite strong and we see the developing world moving rapidly in that direction. Technology is the embodiment of knowledge, an embodiment of creations of the mind. Our world economy is increasingly an economy of the mind, an economy that is dominated by knowledge rather than commodities. Technology includes hardware, the kind of knowledge we normally think of when we say the word technology, but it also includes software knowledge, methodologies, business models and strategies, and the mental skills (tacit knowledge) of the workforce.

## Two Major Challenges

The impact of knowledge is nowhere more evident than in California. In California, the largest agricultural state in the United States, agriculture contributes less than 2% to the GDP of the state. One company, Hewlett-Packard, has a revenue three times all the agricultural output of California. Agriculture is vitally important, but the growth part of the world economy is in high tech and services.

The two major challenges facing companies, countries, and regions are: (1) responding to globalism and (2) fostering an innovative and entrepreneurial culture. These two challenges are clearly interrelated.

According to Thomas Friedman, the

world is flat. Indeed there are strong forces of “deglomeration” that are leveling playing fields and facilitating a broader distribution of the factors of production. At the same time, there are forces of agglomeration that are giving rise to concentration of activities into clusters and regions.

On closer inspection the world is a waffle. The peaks in the waffle are “steeples of excellence,” representing excellence and specialization in design, manufacturing, research, marketing, etc. The clusters themselves add value to the companies in the cluster because of the dense labor market and the concentration of financial resources and other value-added services.

The national system of innovation and the “habitat” for entrepreneurship are critical in positioning a country to participate in the growth part of the world economy. High-quality advanced education, frontier research, and advanced training for the workforce are essential ingredients for the national system.

## Open Innovation

The development of innovation networks and the practice of open innovation have become common for existing companies. Open innovation entails looking outside the company for new technologies and new components to integrate into current product lines as well as to find opportunities for new product lines based on technologies externally developed. “Open innovation means looking outside your organization for partners, suppliers, and customers for new innovative ideas,” says Jonathan Swartz, CEO of Sun Microsystems. Our studies at Stanford of the electronics industry have shown that successful companies have two to three times as many alliances as unsuccessful companies. Universities and research institutes are always a part of the networks of these

alliances. A recent OECD report says: “As knowledge and innovation become more important components of regional development, the role of universities and access to their resources will become critical social issues.”

In order for universities to become effective contributors to economic development, “It takes two to tango.” That is, industry must be willing and capable of capitalizing on university research and universities must be willing and have the mechanisms to foster commercialization of academic research.

## University-Industry Collaboration

For effective use of innovation networks, the role of the technology transfer professional is crucial. Procter and Gamble, in implementing their system of open innovation, appointed a Director of External Innovation whose role is to seek out external opportunities and match them with strategic needs of the company. According to Rick Rashid, who oversees Microsoft Research worldwide, “...we also work with our product teams to move technologies into our products.” Microsoft has a team of a dozen people whose sole responsibility is to handle technology transfer.

From the university side, at Stanford University the ongoing success of the Office of Technology Licensing is due in large part to the effectiveness of the first director, Niels Reimers. He understood what academic researchers could do and what they could not do and he recognized for industry where results of academic research could become important for a company.

Effective university-industry collaboration entails a two-way interaction between the university faculty and students on the one hand and industry researchers and product developers on the other. At Stanford University one of the most effective mechanisms for pro-

ducing the intimate two-way interactions necessary to be effective in such collaborations is what we call the Industrial Affiliates Programs. Let me describe one of them, the Computer Forum.

### Computer Forum

The Computer Forum was formed in 1968 and is thriving to this day. It was a program between the Computer Science Department and the Computer Engineering Program with companies that were producers and users of computing equipment. The Forum held an annual general meeting and a number of special topic meetings throughout the year. Companies paid a membership fee to join the program. At the general meeting, the faculty and students would present their research and the industry researchers and product developers would describe their activities. The companies always sent very good people. Before the advent of the Computer Forum, the faculty and students were not very interested in industry problems.

After the Computer Forum had operated only a few years the faculty and students began to recognize that there were many interesting problems in industry and that they had something to contribute to industry. The Computer Forum fostered an environment that gave rise to such companies as Silicon Graphics, Sun Microsystems, Cisco, Yahoo!, and Google as well as a number of lesser well-known companies that were acquired by other companies.

There are two parts to the equation of high-tech economic development. One part is having the right resources, that is having high-quality research and high-quality research-trained scientists and engineers, and experienced business managers. The second part of the equation is to have the right environment to use the resources effectively.

**Table Important policy actions taken by Japanese government**

1995	Stock options were introduced partially and then totally in 1997 MITI (now METI) revised the Law on Temporary Measures to Facilitate Specific New Businesses
1997	Corporate pension funds were allowed to make prudent venture investments, thereby making significant amounts of funds available for venture capital The government relaxed the rules on temporary staffing and placement services The Angel Tax Incentive measure was introduced
1998	The Limited Partnership Act for Venture Capital was enacted The OTC market was reformed, generally relaxing the listing criteria across the OTC market The Act of New Business Creation was enacted that introduced government loan guarantees for start-ups The government established the Act for Promoting University-Industry Technology Transfer
1999	The Small and Medium Enterprise Technology Innovation Scheme was introduced
2005	The national universities were privatized so university professors are no longer government employees
2005   2007	Japan has undergone the reform of corporate governance laws, reformed the postal savings system, and seen the growth of foreign private equity firms to enhance the M&A markets

Source : Compiled by author

### Japan Needs More Reforms

Japan is well positioned on the first count and has made significant progress on the second. On the first count, Japan has outstanding universities, a well-trained workforce, and experienced business managers. What has been lacking over the past several years is the generation of new start-up companies and a “habitat” that fosters a culture of entrepreneurship. Fortunately the stage has been set for a new generation of start-ups.

Since the mid-1990s Japan has made a significant number of policy changes that establish an environment, or “habitat,” that is beginning to show results in the number of new venture companies. The *table* shows some of the important policy actions taken by the Japanese government.

This is an impressive list of measures whose full effect will not be evident for some time, and some of the measures will have more impact than others. Some of the measures may have to be adjusted, but overall they set a good regulatory environment to foster an entrepreneurial habitat.

Through these reforms, Japan has made exceptionally good progress to match the characteristics of an innova-

tive and entrepreneurial habitat as set forth in *“The Silicon Valley Habitat, Chapter 1, The Silicon Valley Edge”* (Chong Moon Lee, William F. Miller, Marguerite Gong Hancock, and Henry S. Rowen, Stanford University Press, 2000).

Japan should continue to seek additional reforms and develop ways to support the growing entrepreneurial community. In the first half of Silicon Valley’s existence as a high-tech center, it had very little impact on the GDP of California. It has taken time to come to its present level of impact. With time and persistence, Japan can rebuild the strong entrepreneurial culture it once had in different circumstances from today’s world conditions, an entrepreneurial culture that is appropriate for today’s world economy. **JS**

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