

JAPAN CHAIR PLATFORM

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Clustering to Win: Push, Pull, Drag, and Jump Factors in New Technology Entrepreneurship in Japan

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Japan's lackluster economic performance in the 1990s and into the 2000s saw low points that included the closure of NASDAQ Japan in 2002, after less than two years in operation. While the JASDAQ took on some of the function of the defunct market in promoting new business ventures, the number of new initial public offerings (IPOs) in Japan remains modest. Is entrepreneurship doomed to failure in Japan? Recent findings in new technology industries tell a different story, albeit in the seemingly unlikeliest of places.

Kyoto, ancient cultural capital of Japan, home to kimono-clad women and wandering Buddhist monks, is also home to generations of highly innovative entrepreneurial firms. A few examples include Nintendo, creator of the Wii gaming system; Shimadzu, a medical device manufacturer; and Kyocera, maker of precision electronics. Somehow, the region has remained at the forefront of new technology industries and produced highly profitable new firm start-ups, surpassing other regions in Japan. Already strong in traditional manufacturing, Kyoto has been shifting into frontier sectors including nanotechnology and biomedical devices. This move into so-called convergence technologies builds on the region's strengths in medical devices and analytical instruments. In fact, Kyoto has become the nation's major hub of development in a number of new technology industries.¹

Around the world, select local communities like Kyoto have become innovative centers of entrepreneurial activity in new technology industries, particularly biotechnology, nanotechnology, and medical devices. In conjunction with sources of support, such as universities, incubators, and venture capital, these regions have created a critical mass, or cluster, of new technology businesses—that is, enough firms to maintain and produce additional new firm start-ups over time.

Clusters are geographically concentrated economic activities organized around a single or several overlapping fields (e.g., software, nanotechnology) where the bulk of economic benefits from such activity remains in the same region.² Further, industrial clusters have important multiplier effects in supporting high standards of living for the local communities within which they are embedded and are an important source of employment and tax revenue for local governments.³ Looking at the basic ingredients for high-technology clusterization—research-oriented universities, existing skilled workforce, presence of incubators, sources of capital, and the like—we might expect to see many more regional clusters than actually exist today. Meanwhile, some regions lacking in one or more seemingly basic ingredients (e.g., a virtually nonexistent formal venture capital in the case of Kyoto) can somehow surmount these obstacles and surpass their resource-rich competition to create and sustain clusters.

Why these regions and not others? Further, what is the best way to get a grasp of the best practices and pitfalls to avoid in stimulating new business creation in emerging sectors?

¹ Kyoto has become a subject of analysis due to its seeming propensity for entrepreneurship and innovation. Chihiro Suematsu, *Kyoto Yoshiki Mojuruka Senryaku (Kyoto System of Modulization Strategy)* (Tokyo: Nihon Keizai Shinbun, 2002). Kathryn Ibata-Arens, *Innovation and Entrepreneurship in Japan: Politics, Organizations and High Technology Firms* (Cambridge: Cambridge University Press, 2005).

² Another way of describing clusters is whether they are “traded” or not, that is, that a region exports more than it imports in a particular sector. Generally, clusters have a 50–100 mile (80–160 km) radius, whose hotbed of growth is often confined to a several-mile radius. Examples include Silicon Valley in the United States and Kyoto's southeastern corridor in Japan.

³ A recent analysis by the Brookings Institution, for example, found that “clusters are the key organizational unit for understanding and improving the performance of regional economies.” Joseph Cortright, “Making Sense of Clusters: Regional Competitiveness and Economic Development,” Brookings Institution, Washington, D.C., http://www.brookings.edu/reports/2006/03cities_cortright.aspx

Push, Pull, Drag, and Jump Factors

Utilizing case study analysis in conjunction with social network and spatial mapping technologies yields standardized metrics for identifying best practices (and misses) for international comparisons of clusterization.⁴ In applying this multitiered analytical framework, we can get a sense of important *push* (e.g., policy stimuli), *pull* (market demand), *drag* (capital and institutional weaknesses), and *jump* (targeted community-level strategies) factors underlying a region's ability (or inability) to foster clusterization. In terms of best practices, push (policy) and jump (strategy) factors are of most interest.

Push Factor: Policies Stimulating Venture Capital Formation: Japan has been working hard to stimulate venture capital and new firm formation at national and local levels through a number of initiatives including creating tax incentives for angel investors. The Ministry of Economy, Trade, and Industry (METI) launched its “Cluster Initiative” and “Cluster Plan” in 2000 and 2001 respectively. The Plan intends to promote innovation and new business creation, particularly in high-technology industries. Related policies by the Ministry of Education, Culture, Science, Sports, and Technology (MEXT) are aimed at encouraging more science and technology-based university start-ups via two main measures: establishing technology licensing organizations (TLOs) and expanding MBA programs. Within the Cluster Initiative (whose main growth targets are informatics, biotech, nanotech, and eco-bio) is an emphasis on promoting the biotech industry, particularly in the Kinki and Hokkaido regions.⁵ Other initiatives include the establishment of a Small Business Innovation Research (SBIR) program, modeled on the SBIR program in the United States, as well as measures targeting improvements in *jinzai* (personnel skills). The latter includes such activities as the New Energy and Industrial Technology Development Organization (NEDO) fellow program, which places young scientists and other professionals in small businesses, with salaries paid for a time by the Japanese government.

At the same time, Japanese government officials and venture fund managers have watched China's economic rise, trying to stay on the radar of international investors, who have become enamored with China's potential and therefore are spending more time and money on the mainland while occasionally squeezing in a stopover in Tokyo or Osaka. Though current trends indicate that the international venture capital market seems to be pulling away from Japan, pockets of world-class innovation remain in local regions, which are having no trouble attracting international investors and customers. These regions have become quite adept at harnessing jump factors.

Jump Factor: Innovative Coalitions of Local Stakeholders: In some regions, local leaders have done their homework, starting in the mid-1990s if not before, getting the right people (respected, successful, often serial entrepreneurs, scientists, and civic leaders, and the like) together to make strategic growth plans and follow through with the will and the wherewithal to stay the course. An important early admission is that not all industries can be winners and that limited resources should be channeled into the best local bets.

In Kyoto, the work of the Kyoto Venture Forum (京都市ベンチャー企業目利き委員会, or KVF) stands out. KVF evolved out of the Kyoto Venture Business Club, a network of local firms established in the late 1980s by Osamu Tsuji, founder of Samco International, and Masao Horiba, founder of Horiba Manufacturing. The goal of the club was to allow members to learn from the best practices *and* mistakes shared by others in the network.⁶ KVF hosts a competition (currently twice per year) for new entrepreneurs, who seek to obtain “A-rank” status from the group. KVF A-rank “seal of approval” serves as a powerful signaling device to the financial community, as the latter understands that the A-rank is not mere lip service about “firms with potential” but instead is backed by a network of extremely capable and successful entrepreneurs, including the founders of Horiba, Murata, and Samco.

A-rank status is the means to a further end for these select firms; Horiba, Tsuji, Murata, and others function as management consultants of a sort, advising new entrepreneurs on product development, market targeting, distribution, and financial management. In other words, these entrepreneurial leaders volunteer their time to help new entrepreneurs succeed, “to the extent that we are able,” says Masao Horiba.⁷ A number of A-rank recipients report that KVF members have helped with everything from technical advice to introducing them to investors and customers. Social network and

⁴ How this social, spatial, and substantive methodology is applied to emerging clusters in Japan and the United States is the subject of the author's book *Clustering to Win* (forthcoming).

⁵ “Sangyo Kurasuta Kenkyukai Hokokusho Heisei 17 Nen 5 Gatsu Sangyo Kurasuta Kenkyukai” (Industrial Cluster Group, May 2005).

⁶ Ibata-Arens, *Innovation and Entrepreneurship in Japan*, 154–155.

⁷ Masao Horiba, Interview by Kathryn Ibata-Arens, July 13, 2007.

geospatial analysis of these kinds of ties illuminate key strategic interactions and future opportunities.

What is the role for government policy in encouraging these developments? The national level is important in terms of providing the appropriate tax incentives for venture investment, for example.⁸ Japan's Cluster Initiative policies have made inroads. At the regional and local level, however, is where the most important on-the-ground activity takes place, involving innovative coalitions of people and institutions such as those identified in Kyoto. The rub is in extrapolating replicable best practices for use elsewhere. A new social, spatial, and substantive (case study) methodological approach to understanding how push, pull, drag, and jump factors operate in leading clusters might prove a useful tool in designing more effective entrepreneurship policy at both national and local levels. Japan is learning from its high-flying regions and applying these lessons on a national level. The United States might be wise to do the same.

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⁸ For example, the SBIC (Small Business Investment Corporation) in the United States has proven an important supporter of small businesses, as well as CAPCOs (Certified Capital Corporations), in recent years at the state level.