CHAPTER 5

Private Sector Initiatives

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Summary

Private sector participation is an important ingredient in successful high-technology development (HTD) programs by State and local governments, and both individual firms and business organizations have undertaken similar initiatives of their own. Recent changes in public policy have made their participation more valuable and more welcome. The business community has practical reasons for encouraging community and economic development, as well as the desire to be a good citizen, and high-technology firms in particular have many resources that can be applied to community needs and problems. The nature of their efforts vary with the size and nature of the firm, but in general their initiatives fall in one of four categories:

- *business investment and operations,* notably site location decisions, but also including targeted bank deposits and real estate development, preferential hiring or procurement practices, and expanded employee services;
- *education development,* including philanthropic contributions, loaned personnel, donated equipment, technology-transfer mechanisms, and cooperative research arrangements;
- *business development and risk capital,* including entrepreneurship training and assistance, small business incubators, and geographic investment pools for venture and seed capital; and
- business/civic advocacy, usually through trade or business executive associations, to express support for public leaders or policies, encourage participation by other firms, and promote community involvement by individual employees.

Social and economic conditions, as well as the political and business climate, affect the willingness of business to participate in HTD programs. Perhaps the most important factor is the history of public/private collaboration, but local government has a number of policy tools with which to remove barriers to private sector initiatives. Three factors appear to contribute to the success of these initiatives:

- an organizational culture that promotes a *common civic perspective* and a positive attitude about the attributes and prospects of the region;
- an environment that nurtures *leaders, both public and private,* who combine an established track record for innovation and entrepreneurship with a broader view of their community's resources and promise; and
- a network of *business/civic advocacy organizations* that attracts the membership of top officers of major companies and receives from them the commitment to work on efforts of mutual. concern, including cooperation with the public sector.

Introduction

The Changing Environment

The preceding chapters have shown that private sector participation is an important feature in the design, operation, and success of HTD initiatives at the State and local levels. The targets of these efforts, after all, are the decisions of individual entrepreneurs and firms about where to start, expand, or relocate their business activities. The private sector, however, is seldom a passive player in these initiatives; increasingly, corporations and individual executives play an active role as a stimulus or collaborator in HTD efforts of State governments, universities, and local communities. Recent changes in public policy, including the new emphasis on HTD, have made their participation more valuable and

more welcome. The past 15 years also have produced a variety of successful business efforts that can serve as models for future initiatives by the private sector in this area of economic development.

Business is directly affected not only by business conditions but also by conditions in the external environment. For most of the past 30 years, these conditions have been assumed to be the responsibility of the public sector, and during the 1960's the Federal Government created a number of development-oriented agencies including the U.S. Economic Development Administration (EDA), the U.S. Community Services Administration (CSA), and the various regional commissions, as well as other programs in the U.S. Small Business Administration (SBA) and the Departments of Commerce and Housing and Urban Development (HUD). The 1960's also saw an increase in grass roots activism that led to the creation of numerous community-based development organizations.

During the 1970's, however, State and local governments and the private sector began to assume a larger role in community development. In part this was due to changes in Federal policy, exemplified by the Community Development Block Grant (CDBG) and Urban Development Action Grant (UDAG) programs, which required matching or leveraged funds from other sources. The effort to secure additional public and private resources led to the creation of local "partnerships" involving Government, community groups, and the private sector. Growing public concern about the cost and effectiveness of government programs has led, in the early 1980's, to further reductions in Federal funding for economic development and a further transfer of responsibility to local jurisdictions. This trend, reinforced in many cases by similar changes in State policies, is expected to continue.

Studies by SRI International indicate that this changing environment represents both a challenge and an opportunity for the private sector. On the one hand, responsibility and the burden of performance are being shifted to local governments, which sometimes lack the manpower and experience to deal with economic development problems as complex as high-technology industrial growth. At the same time, growing fiscal constraints at all levels of government make it increasing clear that public resources are insufficient to meet all of the problems faced by local communities. The public sector therefore must find a way of collaborating with the private sector to bring its resources to bear on these problems. In short, "there appear to be no viable alternatives to an increased corporate community involvement and private/public partnership in dealing with local problems."[1]

On the other hand, there are several problem areas in which corporate action or public/private partnership has been especially successful. These include economic development, job creation, and education and training. SRI also found that it is no longer as difficult as it once was to launch such initiatives and that there are several different approaches that any company can undertake, regardless of its size.

Reasons for Business Involvement

Business involvement in regional economic development often results from company policies that reflect the personal beliefs and commitment of their executives. In other cases, business involvement addresses community problems that affect the general business climate or the particular firm's operating costs and profits. In general, however, the private sector has three practical reasons for participating in community and economic development initiatives:

- "business" motives strictly defined, such as reducing the cost of doing business, expanding markets, and increasing return on investment;
- meeting the social needs of its employees, in order to make them more reliable and productive; and
- improving the quality of life in the community.

Research cited by SRI indicates that companies pay, directly or indirectly, for community problems that are not strictly part of the business environ-

[1] Tom Chmura, et al., *Redefining Partnership—Developing Public/Private Approaches to Community Problem Solving: A Guide for Local Officials* (Menlo Park, Calif.: SRI International, January 1982), p. 6; see also SRI International, "Developing Public/Private Approaches to Community Problem Solving," *Management Information Service Report*, International City Management Association, vol. 14, No. 7, July 1982, whole issue. Both reports are based on research conducted by the Public Policy Center of SRI International, with funding from the Office of Community Planning and Development of HUD.

ment. Business needs adequate public services and facilities in order to operate and grow; it also needs adequate protection for its plant and personnel. Business requires a well-trained labor force and social and health services to help it be more productive but business also wants to control its local tax burden and the costs of employee services to reduce operating expenses. Roads that need repaving, police and fire departments without funds to respond to emergencies, school systems too poor to improve teaching, service agencies that cannot provide treatment or counseling, high rates of unemployment and business failures, shrinking tax bases and rising rates—all of these community problems result in identifiable costs on the firm's balance sheet.

At the same time, business wants to be perceived as a good citizen, and an important byproduct of public/private ventures is the improved communication and understanding that results between participants from local government and the business community. Finally, SRI suggests that business "will probably benefit by keeping its end of the implicit bargain with the Federal Government that social problems can be better handled by the private sector if taxes are reduced and Federal programs cut, as the Federal Government has done. "[2]

High-technology firms appear to benefit particularly from economic development and the creation of new firms or branch plants, both as a source of specialized production inputs and as a potential market for their innovative products and services. They also benefit from the cultural and recreational amenities that attract and retain scientific and managerial talent. The following material addresses the resources that the private sector brings to bear on local problems, the roles each has played in economic development, and the typical strategies it employs. In each case examples are provided that relate these general topics to specific HTD initiatives.

[2]Chmura, et al., Op. cit., p. 6.

Private Sector Roles and Initiatives

Introduction

Private sector firms and executives have a wide range of resources that can be applied to problem-solving and economic development in their communities.[3] Different types of firms possess different kinds of resources, and these resources often determine the roles firms play, the problems they address, and the specific initiatives they launch. In general, however, these strategies can be classified as follows:

- *business investment and operations,* notably site location decisions, but also including targeted bank deposits and real estate development, preferential hiring or procurement practices, and expanded employee services;
- *education development,* including philanthropic contributions, loaned personnel, donated equipment, technology transfer mechanisms, and cooperative research arrangements;
- *business development and risk capital,* including entrepreneurship training and assistance, small business incubators, and geographic investment pools for venture and seed capital; and
- *business/civic advocacy,* usually through trade or business executive associations, to express support for public leaders or policies, encourage participation by other firms, and promote community involvement by individual employees.

These four strategies are generic to all businesses, but the resulting initiatives show distinctive patterns associated with particular industries. Financial institutions, for example, find investment and business development a logical extension of their normal activities; their decisions are motivated by profit, but they also take into consideration the special needs of the community, such as housing or neighborhood revitalization. Nonfinancial corporations, on the other hand, are more likely to use philanthropic contributions as the mechanism for community involve-

[3]The following material is based on the contractor report, *Private Sector Initiatives: High Technology and the Local Economy,* prepared for OTA by Renee A. Berger with research assistance by Robert Guskind, April 1983.

ment. In addition, the patterns of involvement often reflect the particular self-interest of the firm: pharmaceutical companies make donations to medical schools, accounting firms give to business schools, and high-technology firms focus their donations on engineering or computer science programs.

High-technology firms have made use of all four of these strategies. As nonfinancial institutions, they seldom make use of special investment strategies, but high-technology businesses have made substantial contributions to educational institutions, often commingled with investments in cooperative research and development (R&D) programs (see ch. 3). Company size affects the firm's ability to draw upon internal resources: large, well-established firms such as IBM, Honeywell, Sperry, or Xerox are able to draw upon vast amounts of capital, personnel, and business experience, as well as a longstanding network of contacts. Also, as with other corporations, high- technology firms tend to focus their involvement near the headquarters, although there are numerous examples of company involvement at branch sites.

The sections that follow will explore these strategies and roles, providing examples of initiatives that have been carried out by high-technology firms and entrepreneurs in various regions and communities. They demonstrate that, although local economies are affected by forces over which they have little control (e.g., demographic shifts, structural changes in industry, and State and Federal policy), local initiatives by the private sector frequently have made a difference in regional economic development by influencing the factors that can be controlled (e.g., business climate, labor pool, and quality of life).

Business Investment and Operations

New enterprises and business expansions strengthen the local economic base by creating jobs and generating revenue. Deciding to start a company or locate a plant in a particular community is the most direct way of making this contribution, but other investment approaches also can enhance particular aspects of a local economy. In some cases these initiatives involve targeted business operations; others are based on a company philosophy of making "socially responsible" investments.

Site Location. -Some high-technology companies have contributed to community development through a deliberate decision to locate in a depressed or disadvantaged area.

- Wang Laboratories, Inc., after outgrowing its location in Tewksbury, Mass., decided to locate its new headquarters in nearby Lowell. Wang made its decision based on Lowell's proximity, its highly skilled labor pool, and the tax and financing incentives provided by the city. However, Wang is now building both a new office building and a downtown research center in Lowell without further tax breaks, and its presence has attracted numerous suppliers who create additional high-technology employment.
- Digital Equipment Corp. (DEC) has sited a plant in the Roxbury-South End area of Boston, near a poor and predominantly minority neighborhood. The startup cost to the company was $4.2 million, of which $2.9 million for land acquisition was financed by an industrial revenue bond. The plant, which began operations in 1980, now has an annual payroll of $4 million and its work force is 63 percent minority.

Site location activity in the greater Boston area, however, may well be unique to that region. MIT and Harvard have been the incubators for numerous entrepreneurs who have started their businesses in or near Boston. Over 80 percent of the chief executives in the Massachusetts High Technology Council (including An Wang and Kenneth Olsen of DEC) received their degrees from schools in the greater Boston area. These people are now part of a tightly knit network of local entrepreneurs who are devoted to strengthening the economic base of Massachusetts. In addition to this entrepreneurial network, Massachusetts provided a highly skilled labor pool, available financing (public and private), and land ready for adaptive reuse (particularly mill facilities). The Wang and DEC decisions result from this mix of economic factors and chief executives' personal preferences. The desire to stay in Massachusetts was a powerful factor in these decisions and, while they have had a positive impact on the local economy, they may not be replicable.

Business Operations.—Companies can also address special needs and provide opportunities for particular populations through selective real estate

development (see above), targeted banking or bidding procedures, and working with minority-owned businesses. Large companies such as Xerox and IBM, as suppliers to the Federal Government of standard commercial products, are required to implement affirmative action purchasing programs.

- Xerox has for many years had an affirmative action program that targets contracting with minority owned businesses. Their policy states that "(l) small businesses and (2) small businesses owned and controlled by socially and economically disadvantaged individuals shall have the maximum practicable opportunity to become suppliers of materials and services. " Xerox's program predates Federal Government requirements.
- Numerous companies that donate equipment to schools and universities (see below) also see this as a marketing opportunity. Executives at Honeywell, Sperry, and Texas Instruments acknowledged that they had expectations of selling their equipment in markets that had been created in this way.

Company Philosophy.–Some high-technology companies pursue strategies that combine business investment with broader community objectives. Control Data Corp., for example, has adopted a business strategy of "addressing society's major unmet needs as profitable business opportunities. " Rather that advocating philanthropy, this approach calls on corporations to use their business skills to address such needs in partnership with government and other sectors of society. For instance, Control Data is a founder and principal investor in City Venture Corp., a for-profit consortium that plans and invests in inner-city development projects emphasizing better housing, job creation, and more effective education and vocational training. Rural Venture addresses these same social needs in rural areas.

Similarly, Control Data's Business and Technology Centers (BTCs) address the need for job creation by providing "incubators" for small businesses, which create the most jobs. BTCs provide entrepreneurial firms with basic shared services (e.g., computer time, office and laboratory space, and manufacturing facilities) on an affordable basis. These and other Control Data efforts (see below) are designed to earn a fair return on investment, and to create a larger market for Control Data products and services, by helping communities set up "job creation networks" that promote innovation at the grass roots level.

Education Development

Corporate practices regarding education can be viewed as initiatives to create the innovations and intellectual infrastructure-the raw materials—they need to survive. Several research studies have concluded that the presence of a major university research facility is essential to fostering HID. Executives of high-technology firms also note that the lack of high-quality engineering talent could be a constraint on their future expansion. As a result, business executives–working as individuals, participating on advisory councils, or as members of a business organizations—have focused their attention on ways to strengthen educational institutions, promote R&D, and encourage entrepreneurship. Business benefits by expanding the labor supply, getting tax benefits from contributions, and speeding the flow of innovation. Universities see a means of achieving several objectives: upgrading education, providing research opportunities for faculty, finding jobs for students, and generating income. Businesses are also working with public school systems to improve primary and secondary science and mathematics instruction. The initiatives they have launched to achieve these goals may be classified in four general categories:

- philanthropy;
- lending personnel;
- donating land and equipment;
- technology transfer; and
- cooperative R&D.

Philanthropy.–Many high-technology firms contribute funds to universities and other nonprofit organizations. Investments like those described above may lead to direct and visible enhancements of the local economy, but philanthropy involves a simpler administrative mechanism (and greater tax benefits) while still making a longer term (if less visible) contribution to the community's physical and human capital. Mature high-technology firms such as IBM, General Electric, and Xerox tend to have diversified giving patterns, ranging from the arts to

education and health. The second-generation high-technology firms increasingly are channeling their contributions to university-affiliated R&D institutes (see ch. 3). Several trade associations have issued policy statements encouraging their membership to give at the "2-percent level."

- The American Electronics Association has set a goal of 2 percent of each member firm's annual research budget to be contributed to universities for supplementing faculty salaries and developing research facilities.
- Stanford University has received grants from 20 corporate cosponsors for the construction and operation of its $12-million Center for Integrated Systems.
- The Massachusetts High Technology Council in January 1982, asked its members to raise their level of support for higher education to 2 percent of their annual R&D expenditures. In December 1982, they announced they had met their $15 million goal.

Lending Personnel.–Another method of providing resources for economic development is by lending personnel. Company personnel have technical skills that may be of assistance to prospective entrepreneurs or to educational institutions. Numerous corporations lend personnel, and high-technology companies such as IBM and Xerox have been leaders in this area, particularly for training endeavors. There are two principal motivations for lending personnel: improving the local labor pool and providing technical assistance to potential entrepreneurs.

- The Harris Corp. in Florida operates an extensive program with local junior and senior high schools. Company personnel give lectures and work with school personnel to promote interest in science and mathematics. Harris' activities are motivated by a desire to retain their present employees (whose children attend these schools) and to engender positive attitudes toward technology among high school students (who are potential future employees).
- Honeywell is involved in the creation of a new magnet program in a local high school in Minnesota. This program will focus on science and math skills but also will promote a broad skills base. Honeywell has worked with the school system to develop a strategic plan for technical skills development, and the company has contributed funds as well as lending personnel.
- The Minnesota Cooperation Office (MCO) is a nonprofit corporation with directors from business, labor, education, and government that helps entrepreneurs who want to start a new company. A small permanent staff draws on a volunteer advisory panel of engineers, scientists, and executives to help clients prepare and evaluate business plans and obtain financing. Financed in its early years by contributions and grants, MCO's goal is to become self-supporting from client fees and return on investment in client companies. MCO has served as a model for similar initiatives in many other communities, including Competitive Wisconsin and Cleveland Tomorrow (see below), both of which are civic advocacy groups initiated by chief executives.

Donating Equipment.–Donating equipment represents a comparatively small but growing component of education development initiatives by high-technology firms. According to Independent Sector, an association representing nonprofit organizations, the value of corporate noncash giving (equipment and materials) was approximately $6 billion in 1983. Deductions created by the Economic Recovery Tax Act of 1982 are expected to increase corporate equipment donations. Though data are not available, it appears the principal beneficiaries of high-technology equipment donations are university science and research centers (see ch. 3). Corporations also view donating equipment as cultivating a market for their high- technology products.

- The Massachusetts High Technology Council estimates that the 1982 value of equipment donations by member companies will reach $40 million.
- Harris Corp., Sperry, Motorola, and Honeywell have contributed equipment valued in excess of $2 million to the new Center for Engineering Excellence at Arizona State University.

Technology Transfer.–Technology transfer is a means of moving an invention to market and generating sales or royalty income. Traditionally, technology transfer has been handled by university administrations, but more recently this important commercialization function has been assumed by private nonprofit alumni foundations. Some of these foun-

dations are independent of the university, others are not; but all of them rely on university research capability for inventions that can be commercialized.

- The Wisconsin Alumni Research Foundation is the largest and oldest university technology-transfer operation. It is a multimillion dollar operation. Its 1929 patent of vitamin D has provided $14 million in license income.
- More typical is the University of Virginia Alumni Patent Foundation. Funds for the program were provided initially by the alumni foundation, but subsequent funds were raised from the private sector and from royalty and licensing agreements. Patent income averages between $50,000 and $100,000 per year. The foundation has processed approximately 200 faculty and alumni inventions, working with patent attorneys, arranging for licensing, and identifying market opportunities.
- The Washington Research Foundation (WRF), a nonprofit organization established in 1982, seeks to increase Washington State's share of the market in high-technology products and processes. WRF plans to work closely with the State's universities as well as other research centers. A bank loan of up to $1 million has been guaranteed by pledges from individuals, law and accounting firms, and manufacturing establishments.

Cooperative R&D.–Numerous universities have established cooperative relationships with industry and government to expand the high-technology labor pool and to promote research. The relationships vary greatly, from simple corporate grants to complex contracts giving the private sector firm control over intellectual products. This is a promising source of income for the university (and therefore the community) as well as for the firm. It is also a highly sensitive matter because of ethical concerns and questions over academic freedom. (See ch. 3 for more detailed information on cooperative R&D initiatives.)

- The direct grants approach is exemplified by the $6 million, 5-year immunogenetics program sponsored by DuPont at Harvard; the $7 million, 10-year combustion science grant from Exxon to MIT; and the $5 million, 5-year robot development project sponsored by Westinghouse at the Carnegie-Mellon Robotics Institute. These grants are are targeted for specific research and have a turnback arrangement so that the corporation can benefit from inventions.
- A few universities, seeing the potential for income from cooperative research, have become entrepreneurial. Stanford University, in 1981, created Engenics, a for-profit company to develop large-scale chemical processing techniques, and the Center for Biotechnology, a nonprofit research organization provided with $2 million by the six corporate supporters of Engenics. Stanford holds 30 percent of the equity in Engenics.
- There are other university programs sponsored by individual firms to target particular problems. For example, IBM has a launched a $50 million program of grants and equipment donations to improve manufacturing engineering, and Exxon sponsors a $16.8 million engineering faculty assistance program to supplement junior faculty salaries.
- Recently, several companies have organized into consortia to pool resources for several universities and special programs. For example the 10 major makers of semiconductors (including Honeywell, Hewlett-Packard, and IBM) have established the Semiconductor Research Cooperative, which will identify generic research needs and work with university research departments.

Business Development

Private industry also contributes to regional HTD through business development initiatives. These efforts, which are often associated with the educational efforts outlined above, take three forms:

- entrepreneurship assistance;
- small business incubators; and
- geographic investment.

Entrepreneurship Assistance.–One of the most highly developed set of initiatives for promoting high-technology entrepreneurship and small business development has been created by the private sector in Minnesota, in cooperation with the University of Minnesota and State and local governments. StarCo (Start-a-Company), sponsored by the Minnesota Business Partnership (see below), is a program through which established firms assist in the creation of new small businesses through technology spinoff, management consulting, and/or equity in-

vestments. Some 35 large corporations have already committed to assist in the startup of two new companies apiece, and smaller firms will assist in the startup of one new company. A related initiative is the Minnesota Project Innovation (MPI), launched in November 1983, which in addition to technology spinoff and entrepreneurship assistance will help the State's small high-technology firms compete for grants under the Federal Government's new Small Business Innovation Research (SBIR) program. MPI, created at the recommendation of the Governor's Commission on SBIR Grants and initially funded by a State grant, will be coordinated through and use the resources of the Control Data BTC in Minneapolis (see above). Private sector participation in such initiatives is encouraged by State legislation passed in 1983 that provides tax credits for technology transfers or investments in qualified small businesses, as well as for contributions to private sector organizations like StarCo., MPI, the Minnesota Cooperation Office (see above), and the Minnesota Seed Capital Fund (see below).

Programs in entrepreneurship have also been created at numerous universities, typically supported by private sector contributions and individual executives loaning their time (see ch. 3). Conferences and referal services connected with these programs have been helpful in mobilizing local professional networks and finding financing for aspiring students and local entrepreneurs.

- Wichita State University established a Center for Entrepreneurship and Small Business Management in 1977. The force behind the creation and development of the program is a professor who is also a successful entrepreneur, but the Center is supported by over 50 area businesses. In addition to seminars and publications, the Center has an executive series that has brought in the heads of Federal Express and Mellon National Corp., as well as local entrepreneurial talent. The Center is about to start a small business incubator.
- The Institute for Constructive Capitalism at the University of Texas is supported by Mobil, Shell, Tenneco, and others.
- Cornell University's Chair in American Enterprise was endowed with funds from the Olin Corp. and the Continental Group.

Small Business incubators.–Another recent innovation in business-university relationships is the small business incubator or technical assistance center. Recent data on the role small business plays in innovation and job creation has sparked interest in this mechanism, which is modeled on the success of the University City Science Center in Philadelphia. In order to sustain the entrepreneur as he brings his invention into the marketplace, these facilities often provide technical and financial assistance as well as low-cost office and laboratory space (see ch. 3).

- The Advanced Technology Development Center (ATDC) at the Georgia Institute of Technology is a new effort to promote indigenous high-technology industry in the Atlanta area. The effort is State-initiated, but the private sector will contribute $1.7 million of the projected $5.1 million budget. Facilities now under construction will provide low-cost space for entrepreneurs. As of 1982, the Center was working with 30 companies. One of its most successful programs is an annual venture capital conference that brings together start-up hopefuls with potential investors.

Geographic Investment.–Geographic investment is a method of channeling risk capital and other financial resources to targeted areas and opportunities. Several State initiatives involve venture capital mechanisms with explicit requirements to fund in-State endeavors (see ch. 2), but because the private sector generally prefers operating with no strings attached, geographic criteria historically have been shunned. Recently, a few private sector initiatives in this area have emerged. Organized venture capital is composed of independent firms (55 percent), corporate subsidiaries (27 percent), and small business investment companies (18 percent). As of mid-1983, the total pool under management was $9 billion. Large venture capital firms play an important role in financing high-technology endeavors, but the opportunities they identify often are not local, so their investments do not stay local.

Seed capital, on the other hand–at least when flowing from organized seed capital firms-does tend to stay local. (Seed capital is also available from large venture firms, but in this case it is difficult to define

and more difficult to trace.) It has been estimated that less than 2 percent of venture activity is targeted for seed efforts, and there are only a few firms that specialize in seed investments, although the number is growing. Interviews conducted with four firms in the San Francisco-Palo Alto corridor indicated that they tend to invest in enterprises within a one-hour drive. In the case of *formal* seed capital firms, therefore, there appears to be a local economic impact; and the tendency may be even more pronounced for *informal* seed capital investments.

- Bay Venture Group was established and completed its first deal in 1976. The limited partners are primarily wealthy individuals (in excess of $40-million net worth). They assume that from concept (seed) to public offering will take from 8 to 12 years. Their deals are made on the market promise of "several hundred million dollars" in sales per year. Ideas are found "word of mouth," and the firm provides significant technical assistance.
- Alpha Fund is based in Palo Alto and raised $13 million from individuals, corporations, and endowment funds to support seed investments. Its brochure states that "because of the close interaction between Alpha and its investments, preference is given to opportunities in the San Francisco Bay Area."

Where there is little local venture capital activity, the private sector can seek to establish a "presence" by creating an investment vehicle to pool local risk capital and encourage local entrepreneurs. This approach, however, doesn't necessarily apply a geographic criterion. There is a greater likelihood that locational criteria would be specified at the State level (by a State government-initiated firm, or by a private sector pool with a specified aim of serving State economic needs) than locally.

- The Minnesota Seed Capital Fund was an outgrowth of the Minnesota Business Partnership, a statewide business executives group (see below). The fund has attracted initial capitalization of $10 million from individual investors and several pension funds and support from major Minnesota corporations. It was formed because capital from more conventional sources like venture capital companies and banks is often not available to new firms in their startup and early development phase. It invests exclusively in Minnesota and works closely with the Minnesota Cooperation Office, a nonprofit organization that provides technical assistance to new businesses (see above).
- The Michigan Investment Fund (MIF) is a limited partnership that was initiated by the Charles S. Mott Foundation. The Foundation, working with a nonprofit small business expert, developed a blueprint for a limited partnership to primarily serve the economic needs of the State. MIF plans to direct 60 percent of its investment in-State, but not all the funds will be invested in high-technology firms. The remaining 40 percent will be used to establish relationships with out-of-State venture firms in hopes that those investments will lead later to capital returning to the State of Michigan. (The Mott Foundation has a blueprint for a similar endeavor that will involve three Michigan counties. Presently in the planning stage, the Flint River Capital Fund will work closely with the General Motors Institute on new technologies.)
- The Cincinnati Chamber of Commerce, with the aid of the Gannett Foundation, is in the planning stage of creating a venture capital firm. The firm will not be required to invest in Cincinnati. The Chamber feels that a local presence will enhance the likelihood of promoting entrepreneurship but will not be directly responsible for generating this capability.
- In Cleveland, on the other hand, the Gund Foundation sponsored a study of the city's economic profile that recommended the creation of three entities—one for research coordination, one for technical assistance, and one to provide local venture capital. The first two initiatives are in the planning stage; the third, Primus Capital Fund, has $30 million capitalization and will start making investments in early 1984. These investments will be limited to Ohio, with an emphasis on the greater Cleveland area, and will be targeted for "high-growth" opportunities in medical technologies and factory automation.

Business/Civic Advocacy

one of the most powerful resources that high-technology firms can utilize to influence public policy is the prestige of their executives. Corporate execu-

tives, because of their position, visibility, and business connections, have the capacity to influence their peers and suppliers as well as public policy. The "new" entrepreneurs—in California, David Packard and Stephen Jobs; in Massachusetts, Alex and Dee D'Arbeloff, Kenneth Olsen, and An Wang—have had considerable influence on public policy, both as individuals and through the business groups they join. These organizations provide a broad-based network for building consensus, generating ideas, and implementing programs. They also provide a meeting ground for government officials and their private sector counterparts and thereby play a crucial role in shaping the economic priorities of States and localities.

- A prominent example is the Massachusetts High Technology Council (MHTC), one of the most successful business/civic advocacy organizations in the Nation. In 1979 they established a "social contract" with the Massachusetts government to create 60,000 jobs if the State brought total taxes to a level competitive with the 17 other States against which local high-technology firms competed for technical talent. Taxes have dropped, and MHTC has fulfilled its part of the contract.

Trade Associations. -Trade associations, which try to influence both public policy and the practices of their member companies, can be broad-based or specialized. National trade associations tend to focus on Federal policy, but State groups promise to have increasing influence as the locus of governmental responsibility for economic development shifts to State and local governments.

- The National Association of Manufacturers (NAM) and the American Business Conference (ABC) are broad-based associations. NAM has over 13,000 member companies, over 80 percent of which are small businesses (employ under 500 people). NAM has issued a white paper on the impact of HTD. ABC was established in 1980 and is comprised of mid-size high-growth firms. Membership is limited to 100 firms, and, although ABC covers all industry sectors, high technology is a particular interest. The chairman of ABC, Arthur Levitt, Jr., has promoted 2-percent giving.
- The Computer and Communications Industry Association and the American Electronics Association (AEA) are examples of specialized trade associations. AEA produced a highly publicized study on the shortage of engineers and has issued a policy statement encouraging 2-percent targeted giving by member firms.
- MHTC is an example of a State-level specialized trade association. Several governors have also established high-technology task forces with business members, but these groups are often temporary bodies that function in an advisory capacity (see ch. 2).

Business Executive Associations.–These organizations, which operate at the national, State, and local levels, usually are made up exclusively of business executives, although some include representatives of labor, education, and government. They typically have a small staff, rely on borrowed executives, and play an initiating role, although a few have implemented ongoing programs. These associations provide a locus of power for business executives, and in the past few years several local business-executive groups have included high-technology in their development planning. State business-executive associations are also likely to become a focal point for geographically motivated high-technology programs in the future.

- Cleveland Tomorrow, Inc., created as the result of a study of the Cleveland economy, is spearheaded by the business community. It has three efforts underway: a venture capital firm that will invest exclusively in Ohio, a research program that will specialize in applied manufacturing, and a program to provide technical assistance to local businesses.
- The Cincinnati Chamber of Commerce received a grant from the Gannett Foundation to establish a venture capital firm. This effort began in partnership with the city, the *Cincinnati Enquirer*, and the chamber. Now in the planning stage, the firm will seek private capital but will not have geographic restrictions on investment. The chamber is also working with the University of Cincinnati to develop a research center specializing in applied manufacturing processes.
- The Santa Clara County Manufacturers Group, established in 1978 as a mechanism for business people to work with government on issues of mutual concern, has a diverse membership including banking, technology, and real estate com-

panics. The organization has established a task force with the county district attorney's office to explore ways of preventing the loss of high-technology trade secrets.

- Competitive Wisconsin, Inc. (CWI), established in 1981 to strengthen the State economy, is composed of representatives from labor, business, agriculture, and education. It has established a for-profit venture capital subsidiary that will invest in Wisconsin enterprise. CWI will work with Wisconsin for Research (WFR), a new group designed to coordinate university research with the business community. WFR already has created a subsidiary that will be establishing business incubators in the State.
- The Minnesota Business Partnership, founded in 1981, is credited with fostering the creation of the Minnesota Seed Capital Fund and the Minnesota Cooperation Office, as well as several other HTD initiatives in the State (see above).
- A 1981 *Harvard Business Review* article noted that, "Besides California, whose organization was founded several years before the Minnesota Business Partnership, business executives in Ohio, Massachusetts, Pennsylvania, and Delaware have joined to create similar groups. . . . Activity is stirring also in New York, New Jersey, Connecticut, Virginia, Indiana, and a few other States."[4]

[4]Judson Bemis and John A. Cairns, "In Minnesota, Business is Part of the Solution," Harvard *Business Review, vol. 59, No. 4,* July-August 1981.

Factors Affecting Success

Different regions and communities have different needs and different resources with which to address them. What works in one area may not work in another, and it is unlikely that a single, all-purpose approach or program design will work in all settings. While individual communities can learn from the successes of others, local organizations and individuals will have to experiment and innovate in order to find their own approach to successful public/private partnership. This calls for creativity and determination, but it also requires a detailed knowledge of local conditions and factors that are likely to influence the success of their efforts.

Research conducted by SRI International has identified a number of factors affecting private sector initiatives and joint public/private ventures for community economic developments Perhaps the most important of these is the past history of public/private development initiatives in the community: a strong history of collaborative efforts provides a base of positive experience to build upon, as well as building trust and understanding among business, government, and community groups. Social and economic conditions will also influence what initiatives are needed and possible: tensions in the community or weakness in its economy can inhibit private sector initiatives and cooperation. Stable political climate and local government with a efficient, probusiness image are positive influences, as is the existence of intermediaries, brokers, or organizational mechanisms to bring together public and private leaders.

However, no single factor explains why some communities and regions have been more successful than others in nurturing and benefiting from private sector initiatives for HTD. For every locational determinant identified in economic theory or implicit in government practice, examples can be provided of cities that have several or all of the ingredients but have not yet achieved success. A strong research university, skilled labor pool, available financing, the presence of corporate headquarters, transportation, good climate, cultural amenities—all may be desirable or necessary preconditions. But it appears that sustained effort and innovative behavior by public and private individuals and organizations provide a catalyst to bring the ingredients together.

OTA's investigation of private sector initiatives for HTD indicates that the local communities that

[5]SRI International, op. cit., pp. 2-3.

have benefited the most have had three characteristics in common:

- an organizational culture that promotes a common *civic perspective* and a positive attitude about the attributes and prospects of the region;
- an environment that nurtures *leaders, both public and private,* who combine an established track record for innovation and entrpexeneurship with a broader view of their community's resources and promise; and
- a network of *business/civic advocacy organizations* that attracts the membership of top officers of major companies and receives from them the commitment to work on efforts of mutual concern, including cooperation with the public sector.