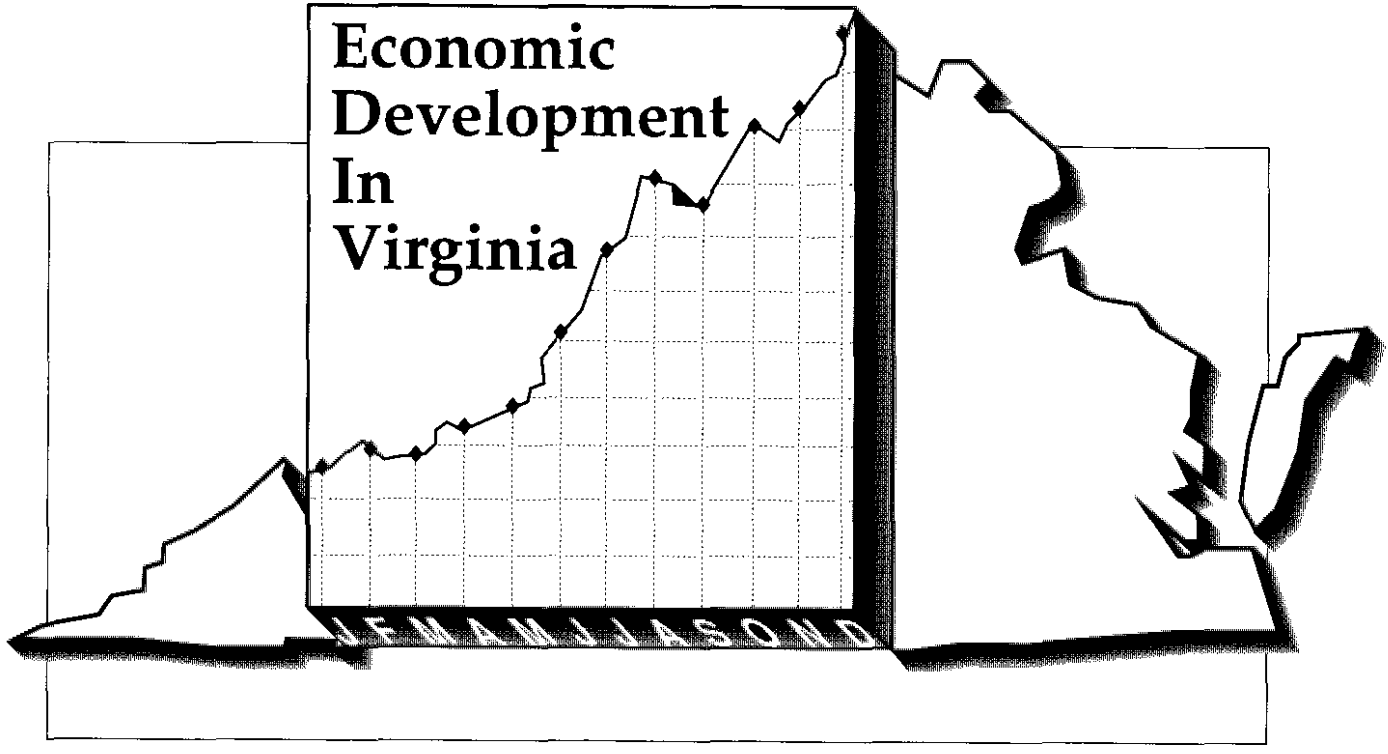

An Interim Report and Invited Papers on Economic Development
Presented to the Joint Legislative Audit and Review Commission

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COMMONWEALTH of VIRGINIA

Joint Legislative Audit and Review Commission
Suite 1100, General Assembly Building, Capitol Square
Richmond, Virginia 23219

January 3, 1990

Delegate Robert B. Ball, Sr.
Chairman, Joint Legislative Audit and Review Commission
General Assembly Building
Richmond, Virginia 23219

Dear Delegate Ball:

House Joint Resolution 262 of the 1989 Session of the General Assembly directed JLARC to study the Commonwealth's economic development policies and the organization, management, operations, and performance of the Department of Economic Development. The resolution directed the Commission to present an interim report to the 1990 Session of the General Assembly and a final report to the 1991 Session.

This document, consisting of an overview of study activities and the proceedings of our recent workshop on economic development, comprises the JLARC interim report. It is being transmitted to all members of the General Assembly.

Sincerely,

Philip A. Leone
Director

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ECONOMIC DEVELOPMENT IN VIRGINIA
AN INTERIM REPORT TO THE 1990 VIRGINIA GENERAL ASSEMBLY

House Joint Resolution 262, passed during the 1989 Virginia General Assembly, directed the Joint Legislative Audit and Review Commission (JLARC) to study economic development in Virginia. The resolution specifically directed JLARC to conduct a review of:

- The Commonwealth's economic development policies;
- The organization, management, operations, and performance of the Department of Economic Development — to include planning, budgeting, staffing, procurement, mission, and policy and program functions.

The resolution also directed JLARC to make an interim report to the 1990 Session of the General Assembly and a final report to the 1991 General Assembly.

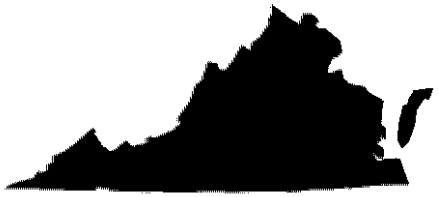
JLARC is one of several organizations currently studying the State's involvement in economic development. The 1989 General Assembly requested 12 studies, including the JLARC study, related to economic development policies and programs. In addition, the Joint Subcommittee Studying Economic Development has been active since 1986. It is important to note, however, that the JLARC review will consider the findings of current and previous study efforts and will build on this information as appropriate during the study.

Economic Development in Virginia

As in other states, the Commonwealth's involvement in economic development activities has increased in recent years. The structure for economic development in Virginia is complex because of the number and types of organizations involved. Economic development activities are undertaken by a myriad of governmental, quasi-public, and private entities at the State, regional, and local levels.

The primary State governmental structure used to implement economic development policy and programs in Virginia is the Secretariat of Economic Development. This Secretariat has evolved since its creation in 1986 to encompass the Secretary's Office, 14 agencies including the Department of Economic Development, and three political subdivisions. Appropriations for the Secretariat during the 1988-1990 biennium totaled $1.1 billion, with approved staffing of 3,361 for FY 1990.

While the Department of Economic Development is not the only State agency dedicated to economic development, it has a principal role. The *Code of Virginia* charges the department with two primary responsibilities: (1) industrial development services and (2) tourism



and travel services (§§2.1-548.9 *et seq. Code of Virginia*). The Department of Economic Development is configured into two divisions, the Division of Industrial Development and the Division of Tourism, which carry out the statutory responsibilities of the agency. Total funding for the 1988-1990 biennium was $60.7 million for the department.

JLARC Review

JLARC initiated the study of economic development policies and the Department of Economic Development in March 1989. To learn about economic development issues and trends, JLARC sponsored a workshop on economic development for JLARC members and staff. This workshop, in conjunction with guidance from the resolution, helped generate areas of interest and issues for the JLARC review.

As of December 1989, JLARC staff had developed the issues of concern for the review and identified the specific research activities to address these issues. As part of this process, the Secretary of Economic Development was interviewed to determine the overall policy focus of the Secretariat of Economic Development. In addition, preliminary interviews were completed with all 14 agencies within the Secretariat and with the Center for Innovative Technology and the Virginia Department of Transportation to determine their roles in economic development and to learn about the programs they administer. Many of the interviews at these agencies included an on-site exploratory file review. More extensive interviews were conducted with staff at the Department of Economic Development. Interviews were also conducted with local and regional economic development groups to learn about their roles and interactions with the State.

Staff have also attended economic development training seminars and other conferences to learn more about the economic development actors and activities within the State. These have included four quarterly seminars sponsored by the Department of Economic Development, two sessions at the Institute for Economic Development, and the Governor's Conference on Travel and Tourism. An industrial training course sponsored by the Department of Economic Development has also been observed. JLARC staff will initiate other research activities in January 1990.

JLARC Workshop on Economic Development

JLARC staff sponsored a workshop on economic development for Commission members and staff. The purpose of the workshop was to highlight some of the complex issues in economic development as well as the

trends across the country for addressing these issues. The workshop focused on national initiatives rather than a critique of Virginia's economic development initiatives.

The Secretary of Economic Development, representatives from each of the agencies within the Secretariat, and representatives from the Virginia Community College System were invited to attend the workshop. The workshop was held in Richmond on June 12, 1989.

As preparation for the study and the workshop, JLARC staff identified national issues in economic development. At the workshop, JLARC members and guests heard presentations from five nationally recognized experts on the major issues in economic development. Presenters and titles of presentations included:

- *Economic Development in the Fifty States*

  William Schweke, Vice President
  The Corporation for Enterprise Development

- *Developing an Internationally Competitive Workforce: Lessons from Europe*

  William E. Nothdurft, Consultant

- *State Efforts in Rural Economic Development: A National Perspective*

  Judi Hackett, Director
  Center for Agriculture and Rural Development
  Council of State Governments

- *Science and Technology Programs for State Economic Development: The Central Role of Government-University-Industry Collaboration*

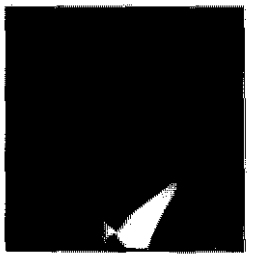
  Don I. Phillips, Executive Director
  Government-University-Industry Research Roundtable, National Academies of Sciences and Engineering and the Institute of Medicine

- *The Role of the Legislatures in State Economic Development*

  Dan Pilcher, Program Manager
  Economic Development
  National Conference of State Legislatures

The following sections of this report contain the presentations made during the workshop.

ECONOMIC DEVELOPMENT IN THE FIFTY STATES



Presented by:

William Schweke

Vice President
The Corporation for
Enterprise Development

During the last ten years — and particularly during the last five — there has been a revolution in state economic development policy. The focus of development efforts has shifted from luring branch plants of large manufacturing firms — known as "smokestack-chasing" — to cultivating in-state entrepreneurs and businesses. Though still in their experimental stages, these policies are not only proving effective, they also are forming a fundamentally new paradigm for state and federal action.

Although largely ignored by the national press and the national political and economic debate, and called by various names — entrepreneurial policy, innovation strategies — this new direction in public policy offers one of our greatest hopes for achieving long-term growth with equity. This set of state programs operates between macroeconomic fiscal and monetary policies and the investment decisions of individual firms. It includes initiatives to reform taxation, development finance, trade, procurement, research and development, education, training efforts, labor-management relations, and employee ownership. These and other programs are designed to improve the competitive position of U.S. firms in global markets; to reduce the costs of economic change for workers, communities, and businesses; to speed technological innovation; to foster independent entrepreneurship and the revitalization of older firms in the state's economic base; and to expand economic opportunity.

Crosscutting this programmatic variety is a consistent set of themes. The new policies and programs possess the following features.

- Investment Oriented: They are premised on the idea that we must invest resources now in order to gain growth, health and increased returns later. The assumption of risk is inherent in this process.

- People Centered: The policies recognize that the central dynamic in a changing economy is people with ideas about how to do something better.

- Market Perfecting: The policies recognize both the effectiveness and power of private markets, as well as their shortcomings. The policies aim at improving market functioning, focusing on areas where there are identifiable market imperfections.

- Public-Private Cooperation: The policies comprehend that we live in one economy — part

private and part public. The role of the public sector is neither simply to "get out of the way" nor to respond with bureaucratic programs; instead, it is to help perfect markets and to act as an entrepreneur as well.

- Cross-Political Lines: The policies are pursued by both Democratic and Republican governors, and attract and repel constituencies across the political spectrum. They are neither laissez-faire conservatism nor welfare-state liberalism.

- Bridge Economic and Social Policies: The policies recognize that social problems need economic solutions and that the key to a revitalized economy is to bring new people and products to the marketplace.

Yet despite the progress in the field, best practice is still held back in three ways. First, the new economic development paradigm is only now being applied to the problems facing economically disadvantaged areas. Much more needs to be done here. Second, the new development framework is still inhibited by the influence that the old view has over policymakers. Much money is still wasted on inappropriate efforts, and too little money is invested in more promising institutions and programs. Third, program management and delivery needs to be upgraded if policymakers and the citizenry are not to be disappointed in the result of the new efforts. The rest of this paper expands upon these remarks.

Investing In Disadvantaged Communities

Far too few state initiatives genuinely target poor communities or areas hit by plant closures or economic restructuring, despite claims that they do. Product development corporations, venture capital tax incentives, R&D challenge grants, and other new development tools, even if effective are "trickle down" strategies, not "bottom up" alternatives. At best, these approaches finance some needed projects and deals, but they fail to animate a self-sustaining development process that restores a disadvantaged community's economic vitality.

Policymakers who want to move in a new direction and combat these problems more effectively do not know where to begin. Good programs are few and isolated; evaluation information is scattered; program design is complicated; and political support is weaker than in the past.

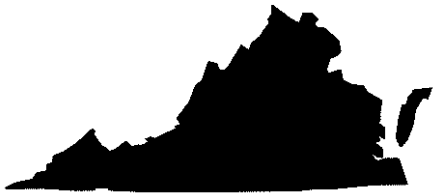
Those left out of the economic mainstream must be dealt into the new entrepreneurial paradigm. Fortunately, there are some existing new examples for states to ponder and emulate.

A state that has been especially successful in this new arena is Massachusetts, which has developed an extremely comprehensive community development corporation (CDC) program. In peak years the state has provided close to $150 million to community-based non-profit developers (mostly for housing ventures). The state operates two quasi-public corporations with substantial resources, the Massachusetts Community Development Finance Corporation and the Massachusetts Land Bank, which provide equity and debt capital to CDC sponsored ventures. In addition, the Executive Office of Communities and Development offers core grant support to 34 groups each year, financing for the state CDC association, and training workshops on a range of development topics. Other agencies, especially in the housing field, provide grant support for low-income housing projects.

New private sector partnerships are emerging as well. The Michigan Strategic Fund is experimenting with a new type of financing vehicle, the Minority Business and Industrial Development Corporation (BIDCO). If a group that wants to start a BIDCO raises $500,000 in equity capital and a few million dollars in private debt financing, the group can obtain a $3 million loan from the state. The loan converts to a grant if certain performance standards, such as job creation in a distressed area, are met. The first Minority BIDCO is a $6.5 million institution and more are in the works. This approach to building financial institutions not only results in institutions that can be more sensitive to local needs, but can also leverage a small amount of state dollars into a program that can have significant impact.

The South Shore Bank is an interesting experiment in stabilizing a Chicago neighborhood. In August 1973, when a small group of investors purchased the Bank, the South Shore neighborhood was undergoing disinvestment, large scale population change, and physical deterioration. From 1960 to 1974, the neighborhood changed from almost exclusively white to 95 percent black. Median family income was nine percent higher than the national median, but by 1978 incomes had plummeted to substantially below the national median. In this "white flight" climate, city-wide financial institutions withdrew financing from the area.

South Shore Bank's purchasers pictured a new type of commercial banking institution which could help revitalize the deteriorating neighborhood. They created a holding company (Shorebank Corporation) con-



sisting of South Shore Bank and three affiliates — City Lands Corporation, The Neighborhood Institute, and the Neighborhood Fund. While the Bank is run conventionally, the subsidiaries undertake complementary activities inappropriate for a bank, including housing and real estate development, higher-risk small business financing, and human development and social services programs. Together, the Bank and its affiliates have invested $127 million in the neighborhood, most of it in housing.

Initially, the Bank focused on single-family mortgage lending. As other lenders moved into that market, South Shore Bank redirected its resources to multi-family buildings, a much riskier market. All totalled, Shorebank Corporation has financed rehabilitation of 6,000 housing units, about one-quarter of the neighborhood's housing stock.

By stabilizing the housing base, South Shore Bank has helped stop the migration of the black middle class out of the neighborhood. Property values, once plummeting, are now growing faster than the city-wide average. The Bank has also helped improve the neighborhood's indigenous development capacity. Its multi-family housing lending has helped create a successful class of local "rehab entrepreneurs" who own, manage, and develop buildings in the area. The Bank has improved linkages between the neighborhood and outside lenders. Whereas 15 years ago most outside banks would not make single family mortgage loans in the neighborhood, now they do. Last but not least, the Bank makes a respectable profit.

Shorebank management, with assistance of the State of Arkansas and the Winthrop Rockefeller Foundation, has bought a bank in Arkadelphia and is launching a new effort, which focuses on fostering entrepreneurial development in rural countries.

What Kind of Business Environment Is Needed to be Competitive in Today's Economy?

As stated earlier, the traditional conception of a good business climate also hinders best practice. Indeed, the reason we began our annual survey of state economies is that for too long, the traditional view of a healthy "business climate" has been asking the wrong questions and, consequently, getting the wrong answers.

The traditional view has it that a good business climate is measured by the absence of things — the absence of high wages, high taxes, government services, and unions. The goal of development policy, according to the traditional wisdom, is to reduce COSTS.

Those old-line indexes are stuck in a time when:

- America was the unchallenged leader in an expanding world marketplace.
- The economy was dominated by big, smokestack factories and mass production — the economy of Henry Ford and the "Arsenal of Democracy."

But the economic times have changed:

- Today we stand toe-to-toe with international competitors for virtually every good and service we produce.
- The mass production economy is evolving into a generation of businesses that rely on quality, customized products, innovation, flexibility, timeliness, and adaptation for successes.

What the best businesses say they need, above all, in today's economy is:

- A skilled and adaptable labor force.
- Access to technology and start-up/expansion capital.
- A well-maintained and modern infrastructure.

That is, a business climate defined not by the absence of things, but by the presence of things.

The key to economic development is not a low cost environment, but a profitable environment. The key is quality not cost. But that doesn't mean you lose sight of the bottom line.

As it turns out, competing on the basis of quality helps reduce costs. Over 30 percent of the cost of a typical manufacturing good depends on quality control — the cost of rejects, lost production time, and supervision.

Three companies recently awarded the U.S. Commerce Department's National Quality Award — Motorola, Westinghouse, and Globe Metallurgical — concur:

"To do things perfectly is the cheapest thing to do."

Robert W. Galvin
Chairman, Motorola

"Higher product quality has reduced many costs. Customer complaints have virtually been eliminated. Last year, none of our products was returned. None! Our safety record is now much better than the industry average."

Arden C. Sims
President, Globe Metallurgical

"[The award]demonstrates that dedication to quality can enable an American producer of high technology products to compete anywhere in the world."

John C. Marous
President, Westinghouse

The 1988 North American Manufacturing Futures Survey of top manufacturing executives, conducted by the Boston University School of Management, found that "as in previous years quality and the dependability and speed of delivery are the most important competitive capabilities from the average manufacturing manager's point of view." This survey reported that the manufacturers surveyed have averaged a 19 percent improvement in quality over the last three years compared to just an eight percent improvement in cost competitiveness.[1]

A survey of the members of the American Business Conference (ABC), representing the chief executives of 100 high-growth mid-sized firms in the U.S., found that "ABC" companies compete on "quality, value, innovation, service, and marketing" and that for "ABC members the most important factors in locating a new plant are the education system in the community and the ability to access the right kinds of capital at the right times."

We at the Corporation for Enterprise Development felt it was time for a new index — that asked the right questions and measures precisely the kinds of factors that successful businesses say they need to succeed.

We arrived at four questions that correspond to the four subjects or indexes in the Report Card:

- How well is the state's economy performing in terms of its primary purpose — which is providing its citizens with a decent standard of living?

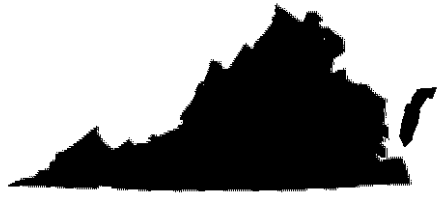
We then look at range of measures in the areas of: employment, earnings and job quality, equity, environmental health, and safety.

To us, high wages or high per-capita income is a primary objective of economic development. The trick is to make sure that productivity increases faster than income.

- Next we ask: How vital are the businesses in a state?

We look at how competitive the state's existing businesses are, how well new businesses are growing, and how diversified the economic base of a state is.

[1]*Jeffrey G. Miller and Aleda V. Roth, Manufacturing Strategies Summary of the 1988 North American Manufacturing Futures Survey, (Boston University School of Management, 1988.)*



We look at these measures because the best data available suggest that between 75 and 80 percent of all net employment growth comes from either existing businesses or new businesses.

In fact, over the last 15 years, half of all new jobs created in this country came from independent firms under five years of age — so if the next five years are at all like the past five, then half of all new jobs created by 1994 will be created by businesses that don't now exist, by people not now in business but who are overwhelmingly living in the communities where they will start their businesses.

- Our third question is: Are the resources in place and of sufficient quality to fuel the growth of existing firms and business start-ups?

We now look at a range of measures of the education level of the workforce, and the technological, financial, and infrastructure amenities.

Far and away, all the evidence we have suggests that the key resource in economic development is the human resource. Edward Dennison at the Brookings Institute believes he can account for 75 percent of gross national product (GNP) growth in this country over the last 50 years through increase in human capital.

Indeed, it seems to me that the heart of economic development process is people — people with ideas about how to do something better. You need access to capital, you need access to technology, and you need lots of different kinds of support. But at the center is the person who figures out a way to combine resources, and creates a new way to add value.

- Finally we ask: What is the level of effort on the part of the state government to invest in the basic building blocks of its economy and to create new economic development initiatives? Is the state an active and intelligent partner with the private sector?

What we look at in the Policy Index is investments in education, infrastructure, and amenities as well as the balance and fairness of a state's tax and fiscal environment. The development initiatives we consider include those to mobilize capital, promote new businesses and strengthen existing ones, and aid distressed communities and individuals.

We believe that the Report Card can be a tool to help you in your efforts to develop your economies and make progress. It can:

- Provide a context for understanding what is important to promote a strong and healthy economy.

- Help you make an initial assessment of the strengths and weaknesses of your economy and development efforts. It doesn't provide a complete assessment, nor does it portray the full, complex dynamics of an economy. Rather it is a starting point for further inquiry and, hopefully, will raise more questions than it answers.

But let me be frank about some of the data limitations of the Report Card:

- It only captures the "look" of a state economy at just one moment in time — and for a study of all 50 states that moment tends to be at least 12 months out-of-date.

- Given its statewide nature, it does not adequately measure the variation within states.

- It is constrained by what data are actually available — and it's not a surprise that when you ask the right questions about an economy for the first or second time, no one has been collecting the best information to answer them.

The Limits To Current Economic Development Strategies

The first wave of modern state economic development policy began in 1936 when Mississippi launched its Balance Agriculture With Industry (BAWI) program. It was a manufacturing recruitment strategy, marketing Mississippi's low costs of labor, land, government, and living. This approach to development spread to other states, including Virginia. And although it worked, at least for a while, it began to produce more limited results by the late seventies and early eighties.

The second wave of modern state development began in New England, where the impact of economic restructuring in the apparel and footwear industries was most harshly felt. It focused on home-grown economic development. Massachusetts, perhaps the leading state of this second wave, began crafting quasi-public financial institutions aimed at plugging capital market gaps, creating new joint university-business research and technology transfer programs, and focusing on building a base of community development organizations in depressed communities, among other

initiatives. The purpose of each of these initiatives was to strengthen the existing business base and promote new business growth.

The second wave spread quickly to industrial states in the Midwest and Mid-Atlantic in the early 1980s. Virginia, in particular, has been one of the more active states in the second wave of development policy.

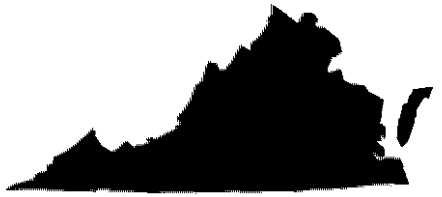
Now in the late 1980s one can begin to look back on the success of the second wave. The new development policies have had a positive effect on the now much stronger economies of states in New England, the Mid-Atlantic, and the Midwest. But the pattern of recovery is too consistent, and the message of these results is clear: home-grown economic development policies add value, and states should not rely solely upon industrial recruitment.

While the achievements of the Second Wave appear self-evident, the limits of that approach to economic development are becoming equally clear. Among the prime limitations of the second wave are:

- Lack of scale. Many of the new initiatives are, at best, modest interventions that reach only a few businesses and have limited impacts on communities. These initiatives frequently rely on the public sector to deliver services to businesses that could more efficiently and effectively be delivered through the private sector (or through non-profits or quasi-public corporations). Oftentimes these initiatives are also created without clear measures of the magnitude of the issues they are confronting.

  In particular, the current state of home-grown strategies has not proven that they are able to raise the general business practice in their state or community to a global standard. American businesses are doubly buffered from meeting international standards — by the size of our domestic market and by the lower standards of most of their visible domestic competitors. When the National Federation of Independent Businesses surveyed its 500,000 small firm members last year, they ranked exporting as 75th out of 75 problems they faced; it wasn't a problem because they didn't do it.

- Fragmented and insensitive to client needs. The current state of home-grown strategies often reflects a fragmented approach to development that neglects the total needs of a business or a community, and instead provides separate and



uncoordinated assistance in areas such as technology, financing, training, etc. Development programs have the tendency to view the needs of the business or community through the narrow perspective of what their program can offer rather than what the client needs. It is not unusual for a training program, for instance, to see all the problems as training problems. In short, economic development efforts are fragmented rather than integrated.

Also, the actors involved in economic development are often kept apart. Economic development is increasingly everybody's business — chambers of commerce, universities, nonprofits, government agencies, school boards, and so on. And tackling the complex obstacles that constrain our development potential, from inadequate labor force skills to insufficient investment in new R&D, entails the creation of more and better public/private/nonprofit partnerships, where each actor is positioned to do what it does best.

- Lack of integration of social and economic policy. Social problems need economic solutions, and the key to a revitalized economy is to bring new people and products to the marketplace. Keeping social issues isolated from mainstream economic development efforts perpetuates a vicious circle of a faltering economy blocking further social progress. Meanwhile, increasing rates of poverty, crime, ill health, and poor education undermine our economic dynamism.

  It is also clear that these home-grown strategies do not reach the most chronically distressed communities, whether urban or rural, or those economically disadvantaged individuals left out of the economic mainstream. Inequalities continue to grow in this nation. The pattern of results in The 1989 Development Report Card for the States reveals the growing disparities across the nation — income inequality grew over the course of the 1980s in all but three states (Hawaii, Alaska and North Dakota), and 12 of the 13 states receiving no grade higher than a "C" in any broad indicator of economic health were rural states.

- Lack of accountability. The most fitting characteristic that describes the shift to a home-grown economic development strategy is broad experi-

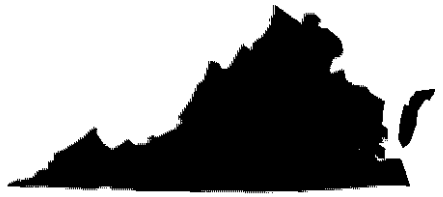
mentation. States across the nation have been trying to craft programs to promote and sustain economic growth among existing and newly formed businesses. But it was experimentation that too often placed an emphasis on innovation to the neglect of evaluation. At the end of nearly a decade of this second wave, there is a paucity of indicators to measure the successes and failures of the approaches undertaken. This lack of performance data makes it difficult to refine or adapt these newly crafted initiatives — that is, to learn from the experiences of these initiatives.

A related concern is that many of the initiatives created during this period of experimentation failed to clearly articulate who their intended clientele was and why. And even those initiatives that set clear and reasonable eligibility standards often neglected ways to promote ownership of these initiatives by their intended clientele and to require a client investment in the services being offered. By not emphasizing a client matching investment of some sort, these initiatives missed an opportunity to create an automatic and self-enforcing feedback loop in their services.

Each of these limits to the current state of homegrown economic development strategy represents different facets of the same problem: change has been too focused on the what of policy intervention and not the how. The Third Wave requires a great leap forward — the discovery and implementation of new ways of stimulating and harnessing the creative capacities of a wide variety of actors and types of assistance toward common ends.

What is needed is a new, comprehensive approach to ensuring an environmental support system in which businesses can thrive — that is, viewing development efforts as a "family of services" rather than as unrelated initiatives. This requires development efforts to have a strategic focus — that is, a clear understanding of their objectives and how program resources (staff, activities, etc.) are used to generate specific program results that affect these objectives.

Moving towards a family of services approach requires more than just a strategic focus — it calls for an increased sensitivity to how economic development policy is designed. Such a system is as much concerned with how policy is implemented, as what policy is undertaken. It seeks not only to bridge the worlds of the business enterprise and state policy initiatives, but also



to bring together a large number of small programmatic steps into a much more fundamental change.

There are four key design objectives to a family of services approach, which reflect the four limitations we see with the present home-grown strategies of economic development:

- Scale - whether an initiative is designed to meet the full scope of need for its services, and whether it is mobilizing the degree of resources that would make a difference.
- Client Sensitive - whether an initiative is designed to serve each client in a manner that recognizes the unique needs of that client.
- Holistic - whether an initiative is designed to link economic and social concerns.
- Accountability - whether an initiative is designed so that there are clear performance measures and on-going evaluations which ensure the effectiveness of the services delivered.

Conclusion

The economic development field has changed exponentially in the last few years. The shift toward programs that seek to build a state's home-grown economy is a significant and necessary change. But the full promise of these new efforts will not be realized if the new paradigm is not more consistently applied to disadvantaged communities, if the old conception of business climate does not pass away, and if program management and delivery are not upgraded significantly.

Section Three

Developing an Internationally Competitive Workforce: Lessons From Europe

Presented by:

William E. Nothdurft

Writer and independent consultant specializing in state economic development policy

I understand from the joint resolution of January 16, 1989, that the Joint Legislative Audit and Review Commission is charged with the responsibility of evaluating the policies, programs, and management of Virginia's Department of Economic Development. In and of itself, that is no easy task. I have been asked to help you, to the extent that I am able to do so, with sorting out the issues associated with the challenge of international economic competitiveness. Instead of making your task easier, however, I suspect I'm only going to make it more difficult. Here is why:

Your Department of Economic Development could create the most enlightened and advanced development strategies in the nation and still fail the test of competitiveness, unless its programs are backed up by equally enlightened and advanced workforce education and training programs — because the challenge of competitiveness is fundamentally a challenge of competence.

During the past decade, while many of us have been scrutinizing the Japanese, the advanced industrial nations of Western Europe have quietly pulled themselves out of the doldrums and into the forefront of the global economic competition. In West Germany, Sweden, France, Italy, even Great Britain, long called "the sick man of Europe," productivity has soared, employment has risen, personal income has grown, and exports have increased steadily.

Last year, I spent several months analyzing the roots of this demonstration of economic competitiveness, and I've been asked to share with you the results of that study. They can be summarized in this statement:

While many European countries have developed highly innovative economic development policies — flexible manufacturing networks and self-employment schemes, among many others — they are competitive principally because they are committed to creating a continuous stream of well-educated, highly skilled workers.

U.S. Competitiveness and the Global Economy

Before we plunge into the details of the workforce competence issue, however, I'd like to offer a few observations on the relationship between the changing global economy and state economic development policies and programs.

Currently, some 85 percent of all U.S. exports are accounted for by only 250 companies — huge, multinational corporations based in the United States. But as trade has globalized, the connections between the inter-

ests of these corporations and the interests of the United States have weakened. Gilbert Williamson, President of the NCR Corporation, said recently: "I don't think about U.S. competitiveness at all; we are a globally competitive company that happens to be located in the United States." Increasingly, the top U.S. corporations are locating their production capacity wherever in the world it serves them best. There is no loyalty to the United States.

- ITEM: According to the National Science Foundation, spending by U.S. corporations on research and development (R&D) is rising much faster overseas than in the United States.

- ITEM: More and more of the highest paying jobs, especially engineers and professionals, are going overseas.

- ITEM: These companies repeatedly cite the quality and skill of the overseas workforce as one reason for their shifting allegiance.

Obviously these trends pose some serious problems for reducing the national trade deficit and raise troubling questions about U.S. employment growth should another global recession occur.

But they also present some interesting opportunities for state economic development programs. I would suggest that these trends mean, among other things, that the issue of U.S. economic competitiveness — and its implications for state and local jobs and economic development — has become a small business issue. That is, since there are few reasons for multinational corporations to act in ways explicitly designed to benefit the U.S. competitive position, the challenge of ensuring that the U.S. economy is vigorous and competitive and provides increasing economic opportunities for Americans falls to smaller, non-multinational companies — the very companies state economic development policies and programs have the greatest chance of reaching.

Few of these companies export, and according to a recent INC. magazine poll, the principal reason is that they simply don't know how. Were this workshop being held six months from now, I could give you a detailed presentation on how to help small businesses identify and penetrate export markets, but that study is just underway. As a short-term alternative, let me suggest that you contact my colleague Jerry Levine, President of Mentor International in San Francisco and currently Scholar-In-Residence at the Western Governors' Association, who has just completed a study on how the western states can strengthen their international trade position through regional cooperation.

Creating an Internationally-Competitive Workforce

Getting back to the issue of workforce competence and your Department of Economic Development, I want to begin with a short story. In 1851, an international industrial exhibition was under way in London's Crystal Palace, and British industrialists — who had grown rich and comfortable through years of dominance in trade and industrial development — suddenly found their exhibits overshadowed by American exhibitors whose products were stealing the show. Worried that the upstart Americans had developed important new process technologies, they arranged a fact-finding tour.

What they discovered, however, was even more worrisome: American manufacturing excellence wasn't due to better technology, but to the high educational level of the American workforce. In 1851 in New England, 95 percent of all adults could read and write, compared to only two-thirds in Old England. Quality workers were producing quality products; it was that simple.

Today, international economic competitiveness is still built upon a foundation of educated and skilled workers, though the level of knowledge required is much higher. Meanwhile, the percentage of Americans who can read and write has declined. Here in Virginia, and elsewhere in the Mid-Atlantic and Northeast, we face a peculiar problem: job listings in newspapers that take up more pages than the news itself, and increasing welfare caseloads. Jobs going begging and people going begging.

One cause of this situation is the educational system itself: the failure of secondary schools to keep young people engaged in schoolwork and to provide them with the kind of educational and skill credentials that enable them to move smoothly into the workforce, and a chaotic vocational education and job training system that often has little connection to the world of work. Even for those who go on to college, the path between school and work is haphazard; for those who do not go on to college, or who are burdened with other handicaps, the path is often invisible.

But there are demographic reasons as well: the postwar baby boom is over, and the entry of women to the workforce has begun to peak. Over the next ten years, more than half of all new workers will be immigrant and non-white men and women — that is, minorities will be the majority. And I needn't tell you that this emerging workforce approaches the world of work with significant personal and educational handicaps.

At the same time that the education and skill levels of the workforce are dropping, the knowledge and skill requirements of the job market are increasing rapidly.

This mismatch is our economic Achilles Heel. Create all the economic development programs you wish; if you do not correct this mismatch, economic development will fail.

Allan Larsson, Director General of Sweden's National Labor Market Board (and lately a consultant to Michigan's Department of Commerce), is fond of saying: "We must create not a 'high tech' but a 'high skill' economy, through competence building at all levels of education and business." This commitment to competence-building is the key to the economic success of Sweden, West Germany, and several other European nations, and it holds some important lessons for Virginia as you seek to strengthen your economic development programs.

- Sweden's public education system begins introducing children to the world of work by the second grade. By the time they reach upper secondary school, young people will have chosen from among more than 400 lines of study aimed at credential-building in a specific trade or line of work. By their final year of secondary school, these students may spend as much as 60 percent of their school day working in a specific industry and putting the finishing touches on their work skills. Ninety percent of Sweden's young people go through this process; the balance are given special attention and gently guided to a course of study and skill-building that suits them. Once in the labor force, a national employment service links them with jobs and a nationwide, but private, training company assures them that they can always upgrade or alter their skills. Education and training curricula are developed jointly with employers and labor unions, and all employers participate in the employment service.

- West Germany has the world's best developed apprenticeship program — called the "dual system" because it is jointly operated by industry and the vocational education system of every German "Land" or state. Like the Swedes, German children are introduced to the world of work at an early age. By the equivalent of the 10th grade, roughly 80 percent of these young people will enter the Dual System. They will choose from among hundreds of occupations, acquire an apprenticeship in a private company in their

chosen field, and spend the next three years developing skills — four days a week on-the-job to gain practical skills and one day a week in a local vocational school to gain theoretical skills. Industry-run Chambers of Commerce operate their own schools to ensure that young people apprenticing in small shops receive as broad an education as those in bigger and better-equipped factories. The partnership between business and public education is long-standing and carefully protected.

- Great Britain, with perhaps the weakest workforce in Europe, embarked several years ago on a multi-billion dollar package of programs to ensure skill development in school, remedial skill-building for out-of-school young people, and retraining for adults as well. Keenly aware of the challenge presented by the 1992 integration of the Common Market, the British realize that competitiveness will be judged on product quality and that product quality will be determined by worker quality.

In addition to these and other individual workforce competence-building programs, there are at least three action programs currently under way throughout the European Economic Community (EEC): (1) a program to smooth the transition of young people from school to work with a special emphasis on industry partnerships; (2) a program to raise the standards of post-compulsory school vocational training to ensure that it results in recognized qualifications; and (3) a parallel program to upgrade and keep current the working world-relevance of compulsory school curricula. While competing with each other, EEC countries are cooperating with each other as well on the workforce competence issue, even to the extent of establishing a special fund to provide technical assistance to lesser-developed members such as Spain, Portugal, Greece, and Ireland.

Given the integration of Europe, it might be useful to think of Europe as a federated union, like the United States, and to think of individual nations as similar to American states. There are limits to this analogy, but it does help to sort out basic principles and possibilities. Well-developed states like Virginia compare favorably to small European nations in terms of scale, economic output, and — with respect to education and training — relative degree of control over content and administration. If Virginia were to acknowledge the competence challenge and make it a cornerstone of its economic development program, it would have wide discretion and remain largely unfettered by federal government

meddling. I can't give you the details of the book I wrote about this study in a short speech, but I can present to you a few basic principles drawn from the successes in Europe:

- Principle #1: Work is the defining element of human existence; cash income maintenance payments do not substitute for work.

European education and skill development systems are aimed at assuring the currency and marketability of the skills of every single adult, not just those who are unemployed. But they also take pains to move those who have been shunted aside, for whatever reason, back into the mainstream. The priorities are as follows: (1) make sure basic needs are met, (2) provide education or training immediately, (3) provide a clear path to a job and placement assistance, and then and only then (4) provide welfare payments for those who cannot secure work, but make it contingent upon continued participation in training and employment efforts. Investments are significant, but felt to be far less than the cost of widespread welfare and associated social pathologies.

- Principle #2: The key to producing a work-ready workforce is a first-rate educational system with an explicit and significant work experience component.

In the absence of connections with the world of work, education flirts with irrelevance. In addition to assuring that young people leave school with recognized credentials, the connection to the world of work also helps the educational system to adapt to change in the real world, keeping it fresh and current. How European nations make the connection between school and work varies with their experience and cultural traditions, but the commitment to a seamless transition from school to work is absolute.

- Principle #3: Public education and job training programs must provide their clients with recognized and accepted credentials.

The 1992 integration of markets for products and services has forced European countries to implement what in the U.S. is still a theoretical notion: that people should have "portable skills" — that is, that their credentials should be universally recognized and respected. The competition created by 1992 demands such a system. In the U.S., competition — from Europe, the Far East, and elsewhere — is not yet immediate enough to force this issue, yet it is just as real. We know that recognized quality is what creates competitiveness; we must understand that recognized workforce skill is what creates quality. Since we can no longer survive

simply by trading with ourselves, we must respond to this principle.

- Principle #4: Creating a competitive workforce requires partnerships between labor, business, and government.

Not even the most centralized of the European governments pretends that creating a highly skilled workforce can be accomplished by government alone. In one form or another all of these programs are jointly conceived and executed by labor, business, and government, and the role of business owners is crucial — both in the development of policy and in its operation.

- Principle #5: There are no quick fixes; building workforce competence requires long-term investments and a patient, experimental attitude.

Especially in Sweden, but elsewhere as well, establishing first-rate education and training systems has involved steady and patient planning, trying, evaluating, revising, and trying again — recognizing that no one has the answer and that, in any event, the target is constantly moving. What's more, the best programs are customer driven and must change as customer needs change. The best programs require a commitment and investment by participants and, in turn, must assure participants that they will have the flexibility to craft their own futures. In contrast, U.S. programs are forever in search of the single sweeping solution and typically force clients to jump through eligibility hoops that have little to do with their real needs or interests. As a consequence, they fail, expensively.

- Principle #6: Compulsory school cannot produce fully-prepared workers; everyone needs further training.

Even Europe's best, most working-world-relevant compulsory school systems — and they are very, very good — don't expect their graduates to be fully prepared for the world of work. In every case, some post-compulsory school training system is in place — both for students entering the workforce, and for workers who wish to, or must, change jobs. Where the concept of "life-long learning" is a trendy bit of theory among education professionals in the U.S., it is an accepted fact of life for individuals in many European countries and in the businesses for whom they work.

Initiatives and Issues

The Commission's staff asked me to identify initiatives under way elsewhere that might provide guidance to you as you consider Virginia's economic development programs. My first recommendation, of course, is that you consider some of the programs under way in Europe. They are described in my book Schoolworks, which will be published in a few weeks. The Commission staff has a copy of the original manuscript. The book examines the details of the programs in four countries — Sweden, West Germany, France, and Great Britain — and, perhaps more importantly, identifies the basic policy issues involved in the workforce competence challenge, and describes a half dozen or so key lessons to be gleaned from each country.

Closer to home, there are few places to direct your attention. The book describes a local program in West Philadelphia, full of innovations — some of them drawn from Europe — that may help you in your deliberations. The only other place I am aware of that has integrated the workforce competence issue into its mainstream economic development program is Michigan, one of the nation's leaders in economic development innovation. Michigan officials traveled to Sweden, Denmark, and West Germany, reviewed their labor market policies and educational and training programs, and have begun creating their own statewide system for upgrading workforce competence. They are explicitly linking economic development, education, vocational education, and community college investments with the competence needs of business and labor as an essential part of their long-term economic development strategy, begun some six years ago. It is, to the best of my knowledge, the only state to have undertaken such an initiative.

In the end, the European and American approaches to economic competitiveness boil down to a simple distinction: while the United States worries about the competitiveness of companies, many European nations focus on the competitiveness of individuals, believing — I think correctly — that when individuals are competitive, companies and nations will be competitive as well.

Section Four

State Efforts in Rural Economic Development: A National Perspective

Presented by:

Judi Hackett

Director
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Thank you for inviting me to speak to you about rural economic development. I congratulate you for including the subject on your economic development agenda, as it is emerging as an important area for state action, not to mention the subject of considerable discussion in Washington today. I will cover four main points: first, a working definition of rural economic development; second, the problems of establishing successful state rural policy and programs; third, a review of various approaches states can use to stimulate rural economies; and finally, some thoughts on measuring success.

A Working Definition of Rural Economic Development

Academics and bureaucrats have debated for years about a definition of the word *rural*, and the debate will probably continue for many years to come. The Council of State Governments believes each state must establish its own definition for policy and program purposes, and we use the U.S. Department of Agriculture (USDA) Economic Research Service's designation of "non-metropolitan" counties to define rural in national studies. Metropolitan counties are those surrounding core standard metropolitan areas (MSAs) or those with a population of 50,000 or more. Non-metropolitan counties are all the rest. As you might imagine, state definitions vary widely. The State of New York, for instance, through its Joint Legislative Commission on Rural Resources, defines rural as any county with a population of less than 200,000.

For many years, the word rural was synonymous with agriculture. However, since the turn of the century our economy in the United States, both in rural and urban areas, has shifted from primarily producing food to producing goods and services. The USDA's Economic Research Service, in 1985, produced a report, The Diverse Social and Economic Structure of Nonmetropolitan America, which classifies nonmetro counties by several economic and social factors, and that report is one of the most important foundations for rural policy research today. In easy-to-read maps, this report identifies seven key types of rural counties: farming, manufacturing, mining, government, poverty, federal lands, and retirement. These maps clearly illustrate that rural America as a whole is no longer just agricultural, although some regions remain very dependent on agriculture.

What is the basis of the rural economy today? It is varied across the country and across each state. Of the 3,155 counties in United States, 2,420 or almost 80 per-

cent were non-metropolitan according to the 1980 Census. About 30 percent of these were classified by the USDA study as farming-dependent; the same number were manufacturing-dependent. Mining-dependent counties, which include those relying on oil and gas, are about ten percent of the total, and government-dependent counties and diversified counties account for approximately 15 percent each. About one-fourth of all non-metropolitan, or rural, counties are considered retirement destinations, and about ten percent have persistent poverty.

The study found just as many manufacturing-dependent counties as agriculture-dependent counties. Nowhere is this transformation from farming to manufacturing more apparent than in the South which has gone from a region of small farms to one of factories. The growth of manufacturing jobs has transformed the rural South, allowing many households to rise out of poverty. At the same time, however, this industry brought a high proportion of low-wage, low-skilled jobs to our region. Textile, wood products, leather goods, shoes, apparel, and a few other low-wage industries account for 40 percent of total nonmetro employment in the South, but only 19 percent nationwide.

How does rural Virginia stack up compared to these figures? Sixty-eight of your 98 counties are nonmetropolitan, about the same as the national average. As you might expect, manufacturing-dependent counties make up close to half of your nonmetropolitan areas, and retirement destination counties are about double the national average. The figure which really surprised me, however, is that only three of the 68 nonmetro counties were considered farming-dependent. In most parts of rural America, and Virginia is no exception, economic stress and dislocation of the '80s has been concentrated in those areas which depend on goods-producing industries such as agriculture, mining, and manufacturing.

I cite these statistics to illustrate a point you will need to consider in rural economic development: agriculture is a key ingredient in the rural economy, but is not the only ingredient. In fact, research continues to show a steady decline in the importance of farming as a source of income to rural residents across the country. Therefore, the state needs to consider the needs and conditions of individual areas of the state in crafting rural policy; a regional approach to rural development will be much more successful than one focusing on any particular industry or type of job.

Establishing Successful State Rural Policy and Programs

The Council of State Governments recommends each state incorporate the following three goals into its economic development policy:

- Create and retain jobs in rural areas;
- Assist resource-based businesses, especially agriculture, to adjust to changes in the economy, in markets, and in consumer behavior;
- Help rural community leaders sustain a decent quality of life for their citizens.

In the 1930s, when most federal farm and rural policies were created, rural problems were agricultural problems. The next round of interest in rural problems came during the 1950s and 60s, and the focus turned to solving poverty and unemployment problems. Then the early 1970s saw the emphasis turn to regional planning and federal funds for local initiatives. Finally, during the mid-to-late 1980s, the dominant theme is economic development, and we believe states — because of their more localized perspective — may be able to succeed where the federal government has failed in creating effective and lasting rural policy initiatives.

Unlike Congress, states have been reluctant to create new programs to address agriculture and rural development needs, and with good reason. The needs of farmers and rural communities are not different than those of their other citizens, they are merely harder to address because of remote locations. Some rural areas are trying to cope with growth, others with decline. Nevertheless, within the framework of existing programs and policies, states have been creative in their approach. In those cases where new programs and agencies have been created, careful thought and consideration came first.

Approaches to Create and Retain Jobs in Rural Areas

Small businesses are the driving force for growth in our economy today. During the 1980s, at least six out of every ten new jobs created were in small firms. According to the U.S. Small Business Administration's research, 40 percent of our gross national product (GNP) comes from small businesses, as does half of all major innovation. Small firms have produced ten million new jobs during the decade of the 1980s, many of these offsetting jobs lost by large firms.

Small business development may be the most important strategy for rural economic development in the United States today. Unless we establish an explicit policy of encouraging small firms to grow and develop in rural areas, they will continue to lose their population and economic vitality. For while small businesses have created millions of new jobs, they are not equitably distributed between urban and rural areas. Rural areas contain about one-fourth of the U.S. population, yet only ten percent of the new small business jobs of the 1980s were created in rural areas. Urban areas, with 75 percent of the population, had 90 percent of the new jobs. Rural small businesses are only growing at about one-third the rate of urban small firms.

What can states do to encourage small business development in rural areas? The answers fall into eight categories identified last year as part of Assisting Committed Communities with Effective Solutions for Success (ACCESS), the U.S. Small Business Administration's rural initiative: Capital, Training, Technology, Information, Markets, Education, Infrastructure, and Leadership. The following are a few examples of programs to bring ACCESS to these key ingredients to rural areas.

Capital. In Arkansas a private foundation, the Winthrop Rockefeller Foundation, with help from other private investors and the state, created a rural development bank, the Southern Development Bancorporation. This company has a for-profit land development company as well as a nonprofit development company as subsidiaries and operates out of a bank it bought last year, the Bank of Arkadelphia. The Southern Development Bancorporation is a model rural one-stop resource center for capital in rural areas. It offers every type of financial assistance: seed capital, venture capital, traditional loans and a high risk "good faith fund." It has succeeded in capturing local money and investing it in local entrepreneurs, a key to rural economic development success.

Training. Tennessee is testing a unique approach to delivering business training and consultation services in rural areas, a Mobile Small Business Assistance Center. Dreamed up at the Tennessee Valley Authority and the U.S. Small Business Administration (SBA), a trailer has been converted to a rolling office capable of showing the latest training films, demonstrating computer software, and holding private counseling sessions. Twelve communities have signed up for a week-long visit this year, hosted by the local government and chamber of commerce. Each community tailors the offerings to the interests and needs of its businesses; often bankers participate with the latest loan information, and special programs are held for young entrepreneurs.

Technology. One discussion at the Center for Agriculture and Rural Development's annual conference last year stands out in my mind as the best way to bring access to technology to rural areas: the small business incubator. Often built in abandoned schools or utility buildings in rural areas, incubators can give newly started small firms low-cost research and development laboratories and discounted office space for the first few tough years. An important factor in their success is access to good quality advice, so much so that the state of Pennsylvania's Ben Franklin Partnership program has arranged a circuit rider program for each incubator from its best research university.

Information. While I was with the SBA last year, we discovered over 700 state and federal programs which can be used for rural economic development. Many of these programs are more often used for urban development but could be just as useful in rural areas if the communities knew they existed. But rural governments, with smaller tax bases and smaller staffs, seldom know about everything available to them, and often don't pay someone to do the research to find out.

The SBA published the information about state and federal programs in a book called Working Together funded by Southwestern Bell, and we recommend each state put together its own version of state and local programs. State-level guides to rural programs should be published and distributed widely to banks, development groups, farm organizations, chambers of commerce, and others interested in rural development.

Markets. Small businesses often need help with two quite different aspects of marketing: understanding and responding to consumer preferences, and selling their product in new markets. Non-profit programs which represent local small firms, such as the Oregon Marketplace recently featured in the Washington Post, or procurement technical assistance programs run by local development organizations and community colleges, are effective ways to overcome the second problem. It appears that cooperatives have great promise as a means to get more small business products to market as well, although most of them are single-purpose. The most noteworthy programs to help small businesses respond to changes in the marketplace are found in the agriculture sector, which I will discuss in a minute. I hope our Small Business Development Centers and the Cooperative Extension Service will be adapting these approaches to the needs of other types of rural businesses in the future.

Education, Infrastructure, and Leadership. Access to an educated and literate workforce and the leaders who will bring rural communities into the future, the

human capital of rural America, is beyond the scope of my talk today. However, many experts believe the human dimension of rural development is every bit as important as the jobs dimension. Infrastructure, we could call it physical capital, also plays a key role in successful rural development. Each state should regularly assess its infrastructure needs and the programs available to meet them.

Before I leave the topic of creating rural jobs, I want to mention one other approach states have found useful in rural development. In 1988, with financial assistance from the U.S. Department of Commerce's Economic Development Administration, the Center for Agriculture and Rural Development produced a series of Technical Assistance Bulletins giving examples of successful state strategies to accomplish the rural policy goals I stated earlier: to create and retain jobs in rural areas, to help agriculture-related businesses cope with the economic transition, and to sustain a decent way of life in rural communities.

The first of these Bulletins describes a state program which helps create rural jobs as well as urban jobs: Business Retention and Expansion Programs (written by George Morse of Ohio State University).

Business Retention and Expansion. There are several different models for business retention and expansion programs, but all have one thing in common, they regularly visit existing firms and try to help them solve problems before they become crises. The state of New Jersey program has developed in close cooperation with the private sector, and involves business-to-business assistance. In Ohio, the county extension agents play a role, while in Georgia, the state economic development agency takes the lead.

Approaches to Help Agriculture and Other Resource-Based Businesses

Three issues of the Bulletin series addressed the major approaches to helping agriculture become more profitable: attracting value-added business, agricultural marketing, and agriculture diversification.

Attracting Value-Added Businesses. A cooperative effort between state government and universities typifies successful value-added business development programs which link entrepreneurs with research and financing. The unique feature of the value-added approach is to attract new businesses from within the state by adding value to the food or natural resource product already produced there. Michigan did so with its Food Industry Institute and Biotechnology Institutes in the early 1980s, and several other states have followed their example. I understand the Rural Virginia Development

Foundation incorporates the value-added perspective into its goals.

Agricultural Marketing. For many years, state departments of agriculture had been little more than convenient political subdivisions for the federal government or commodity groups. This is no longer true, as Commissioners of Agriculture have become actively involved in creating new market opportunities for farmers and providing leadership in identifying and promoting new crops. Farmers markets, state-grown promotions, wine festivals, and state fairs have become ways to get more rural products into the hands of urban-dwellers. One of the best investments a state can make in its farm economy is in an improved agriculture marketing budget.

Agriculture Diversification. State agriculture diversification programs respond to the needs of the farm sector by helping farmers identify and enter markets which are more dependable than foreign export markets, helping them develop new farm-based products and assisting in the use of new technologies, such as irrigation, needed in the fruit and vegetable markets. We recommend a diversified approach which includes incentives for farmers to try new crops (both loans and grants), funding for research, and a strong state-led market development and information program. Several states have established "linked deposit" programs for agricultural diversification and small business development which invest state funds in banks which agree to lend them at below-market rates for these purposes.

Sustaining the Quality of Rural Life

The third goal I mentioned earlier, sustaining the quality of rural life, is really up to local leaders. If a community's leaders want to stick their heads in the sand and hope the changes all go away, there is really very little the state or federal governments can do about it. But in my experience, that attitude doesn't last very long. Thanks to radio, television, and videotape (not to mention the grapevine) rural Americans have easy access to information about what's going on elsewhere.

That is not to say there is no role for the state, however. Far from it; the state has a critical role in helping rural community leaders organize for their futures, assess their strengths and weaknesses, develop goals, and access the grants, technical assistance, and other programs they need in order to be successful. A major accomplishment should be to raise the awareness of the needs of the rural areas and to reach a common understanding about strategy.

Several states have established special Commissions or Task Forces in order to do this. In Illinois, the Governor's Task Force on the Future of Rural Illinois was made up primarily of farmers and local officials. It held several dozen hearings throughout the state before issuing a report containing recommendations for every major state agency. The New York Joint Legislative Commission on Rural Resources was established in 1984 as a body of the state legislature and continues to operate today as a very effective voice for rural needs and issues. It held hearings and brainstorming sessions for several years, and introduces an average of 12 new bills each year.

We recommend that each state hold a summit on rural development. This idea was introduced at our last annual meeting by Mississippi Senator Rob Smith, Kentucky Representative Adrian Arnold, and Oklahoma Senator Gilmer Capps. Their resolution, adopted by the entire conference, called on each state to hold a New Alliance for Rural America Summit in order to bring together government and private sector leaders, and university and local officials, to jointly establish priorities. It should serve as a vehicle for coordinating at the highest levels of state government, with both the Governor and legislative leadership directly involved. Improved state policy should result from a Summit, rather than instituting a hodge-podge of new programs on a piecemeal basis. For example, you would be most likely to:

- Develop a rural development approach on a regional, rather than a sectoral basis. This should be less brittle when major problems in the rural economy, such as drought or devaluation of the dollar, occur in the future. Some large states are considering holding regional summits leading up to a statewide summit.

- Target existing resources rather than consider large new spending. In Illinois, the Governor enacted one of his Task Force's recommendations before the ink was dry on their report, a "Rural Fair Share" initiative which required state agencies to review their allocations to rural areas and to try and make it about equal to the percentage of the population in rural areas (25 percent in Illinois).

- Coordinate and consolidate existing programs rather than create new ones. There may already be too many programs, some of them inadequately funded, trying to serve rural areas.

The summit is not the ending point in state rural development policy, only the beginning. We believe, however, it will get states off to the right start if the top

state and private leaders are involved in a thoughtful way in setting priorities. The Center for Agriculture and Rural Development will be able to provide assistance to several states planning summits this year and next. We certainly hope Virginia is one of them.

Measuring Success

There has been little or no formal evaluation of the effectiveness of rural development efforts by state governments. There are several indirect measures which a state could use to see if its policies or programs have been successful in creating jobs or saving rural communities.

Should you adopt a policy of rural job creation, there are several state data sources which could be used to measure its effectiveness: retail sales and personal income improvement (from tax revenues), employment and unemployment (from unemployment insurance), or change in poverty and welfare (from welfare data).

The success of a policy to improve quality of rural life, to help local leaders keep their communities alive, might be measured by looking at changes in population, a slower outmigration, or lower vacancy rates in main street stores.

The real question we need to ask ourselves, though, is whether states can afford not to have a rural development policy. I think we are living with some of the results of not having an effective national rural development policy in this country today — high urban crime rates, traffic congestion, homelessness, decaying infrastructure, and overcrowding are all, at least in part, the result of the continuing migration of people from rural areas to the cities throughout this century.

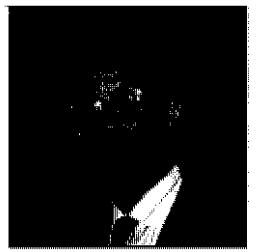
When we fail to invest in rural development, we pay much more in order to solve urban problems. Can we afford for our rural talent, our young people, to leave because they can't find jobs? Must we live with urban sprawl, with our farms turned into shopping malls, because small communities don't have a future? I don't think so — but it will take the vision and dedication of state leaders throughout the country to keep this from happening. Believe me, if we wait for the federal government to solve the problems of rural America, we will have an awfully long wait.

In closing, I want to encourage you to continue to think and talk about the future of rural Virginia and the role of the state. And please remember, as H.L. Mencken said, "For every difficult problem there is a simple solution ... and it is always wrong!"

Section Five

SCIENCE AND TECHNOLOGY PROGRAMS FOR STATE ECONOMIC DEVELOPMENT:

The Central Role of Government-University-Industry Collaboration*



Presented by:

Don I. Phillips

Executive Director
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National Academies of Sciences and
Engineering and the Institute of Medicine

The purpose of this paper is to describe what state governments across the country are doing to marshal their science and technology resources to promote economic development. I will describe the magnitude and breadth of this state activity, the central features of the strategy employed by most states, and the reasons states have turned their attention to science and technology as central elements in their economic development plans, and I will conclude by trying to put these new science- and technology-based activities into a larger perspective.

I will begin by recounting some recent history:

"Two years ago ten American high technology companies, including Control Data, Honeywell, Lockheed, Motorola, Sperry, and NCR, stepped forward to meet the Japanese challenge for supremacy in supercomputer development by pooling resources to form a research consortium called Microelectronics and Computers Corporation (MCC). The consortium hired a former deputy head of the Central Intelligence Agency, Admiral Bobby Inman, to run MCC, and the admiral set out to find a permanent home for his new company.

Admiral Inman and his associates toured the country like an imperial court as mayors and governors extolled the virtues of their respective sites and offered up such tangible inducements as real estate, research facilities, and endowed professorships. When the bidding finally peaked with an unbeatable offer from Texas, Inman had secured a multi-million dollar package, including 30 million dollars in faculty endowments at the University of Texas in Austin, 37 million dollars in equipment and operating expenses, 20 acres of land at nominal rent in the Balcomes Research Park, 20 million dollars worth of office space, subsidized home mortgages for MCC employees, a petty cash fund of a half-million dollars for country club initiation fees and other services, and a Lear jet with two pilots available at all times. Some 60 mayors and 27 governors complained about the unfair advantage of Texas oil money and promised their constituents a better showing next time.

The great MCC bidding war marks a special chapter in American industrial history. State and local governments across the county have discovered scientific research and technological innovation as the prime force for economic *growth and job creation."* [underline added]

Governor Bruce Babbitt
Issues in Science and Technology
Fall 1984

* The views expressed here are those of the author, and do not represent an official statement of the Research Roundtable nor of its sponsoring organizations, the National Academies of Sciences and Engineering and the Institute of Medicine.

What the States are Doing

The current scale of state technology programs across the country supports Governor Babbitt's observation. A survey of all states by the Minnesota Office of Science and Technology shows that 43 states have at least one program that specifically encourages technological innovation and that over $550 million were allocated for state science and technology initiatives for the 1988 fiscal year. I have included the major charts and figures from this Minnesota report because it is the best comprehensive picture of what is going on across the country. Let me review the highlights:

- State technology development programs are as varied as the states, and include efforts to stimulate research, introduce technology into firms, support capital acquisition, improve management, and determine overall state technology policy. Table I includes descriptions of the various types of state technology programs.

- Table II shows that each state develops its own strategy to meet its needs. The mix of programs varies with each state.

- Figure A shows that the largest amount of state funding (41.2 percent) was allocated to technology or research centers to promote research and development.

- The range of expenditures by the individual states in fiscal year 1988 went from zero to over $76 million, as shown in Table III. In general those states that have invested most are the traditional manufacturing states of the northeast and the midwest.

- The final table (Table IV) shows the per capita expenditures for state technology programs across the states.

In addition to this substantial activity undertaken by individual states, regional consortia of states also are forming to combine their science and technology resources for regional economic development. Governors of the six New England states passed a resolution to establish a New England Technology Advisory Council that will coordinate resources to address issues of regional importance involving technological research, development, and commercialization. Virginia is part of two such consortia, the Southern Technology Coun-

cil, which is a component of the Southern Growth Policy Board, and the Southeastern Universities Research Association.

Given that the benefits from the investments in science and technology can rarely if ever be limited to the boundaries of one state and that one state alone often cannot pull together all the financial, human, and technical resources necessary for advanced science and technology programs, it makes sense that regional consortia are becoming a part of state science and technology programs. The obstacles to forming such consortia — political, operational, and financial — are equally obvious, however, and while it is not easy to make them work, their advantages warrant the continued efforts of state leaders.

The ultimate goal of all of these varied activities across the states is economic diversification through the creation of new jobs, new firms, and a more competitive position for existing industries, that in turn will result in increased revenues for the state and increased per-capita income for its citizens.

Elements of a State Strategy

Although each state sets its own course and its own objective for its science and technology programs, there are central features of these state strategies common to most states. They are:

- The strategy is designed by groups of government, industry, financial, labor, and university and other education officials and representatives of the public. It is desirable that there be a focal point and capacity at the staff level within both the executive and legislative branches of state government to participate in this design and planning process, and in subsequent program operation. Strong political champions in both branches also are part of the process.
- The strategy is centered around identifying and designing programs to take advantage of the existing strengths of the state. Priorities are established; no one state can do everything.
- Toward the ultimate goal of increasing economic development, objectives include meeting the needs of existing companies for new technology and personnel, starting new technology-based companies, and providing a science and technology infrastructure that will help in attracting new companies to the state and additional federal R&D dollars and facilities. There are no silver bullets; a variety of approaches is used.

- In addition to a focus on specific areas for technological and economic development, strengthening university research and education, education in other postsecondary institutions, and the K-12 education system also is part of the strategy.
- The role of state government in program operation is to provide partial financial support and to serve as a catalyst for cooperation among industry, universities, and the financial sector. Government-university-industry cooperation is a characteristic that pervades all programs, with industry financial contributions a common element. These contributions are viewed as an indicator of the value and relevance of the programs.
- A difficult task for state government is devising ways to balance investments in centers of excellence and strength with those investments that are spread more broadly to all institutions in the state.
- Finally, and perhaps most importantly, the perspective in designing these programs is long-term. While there are near-term milestones—such as numbers of university-industry cooperative programs, amount of industry contributions, patents obtained, company start-ups financed, and responses to industry requests for information and technical assistance—these contribute to the ultimate goal of increasing jobs only in the long term (see Figure B).

Why a Science and Technology Strategy for Economic Development?

Judging by this list, the science and technology strategy for economic development does not appear to be the currency of political fortunes. The investments are for the long-term. Except for the rare example of an MCC, a SEMATECH, or a Superconducting Supercollider, there is not the visibility of ribbon cuttings and plant sitings. So, why are state elected officials staking their political reputations and investing significant amounts of resources in these types of activities?

The answer lies in the changing state of the U.S. and state economies over the past decade. The U.S. technological lead in the quarter century following WWII has badly eroded in many industries, and in some the U.S. now is a lagger. State governments feel this directly and saw it in terms of economic recession and increases in unemployment that began in 1980. Given the traditional concern of the states with jobs, these conditions

call for action. And in the early 1980s the states realized that the federal government did not have the resources nor the insights to help; a grass roots, locally generated and designed approach was required.

Furthermore, states realized that their traditional approach to job creation centered on smokestack chasing would be inadequate. Smokestack chasing is a zero-sum game that adds no competitive advantage to the nation. While in the past, individual states have been satisfied to realize their own short-term gains, the number of such plant relocations was expected to decline, and the competition among the states was expected to become more fierce — i.e., all states were becoming good at it and the advantage of states that had been at it for awhile, like Virginia, was diminishing. So, states sought new approaches. They responded to studies showing that helping new, small businesses creates more jobs than trying to lure giant smokestack industries. They came to the realization that the application of scientific and technological knowledge is a major factor in economic expansion and diversification, and a key to the formation of new businesses and the competitive survival of old ones.

Another factor contributing to the interest of state officials in science and technology strategies for economic development was their observation that states are particularly well suited to promote technological innovation. Think of these facts: two-thirds of the nation's research universities are public institutions, most of which are supported by state governments; elementary and secondary educational systems are the responsibility of state and local governments, which, regardless of action by the federal government, must take the lead if significant improvements are to be achieved; state and local governments are the prime points of contact with the many aspects of economic activity that entail industry-government interaction; and people are essential in technological innovation, and people can more easily relate to state and local governments than to distant federal agencies. While there are critical roles that the federal government must play, states can be particularly effective in forging relationships among universities and industry in research, technology development, training, and financing. And finally, it is more politically legitimate for a state to try to collaborate with industry in the quest to promote technological development. Many business and political leaders who are sensitive to federal intrusion on private sector prerogatives welcome the efforts by states.

Conclusion

During the 1980s states have changed the rules of the game for their economic development programs. Science and technology have become central elements of their strategies. They have demonstrated their effectiveness in mobilizing government, university, and industry collaboration in research and technological development directed to the needs of local and regional companies. State programs in research and its application are contributing to helping American firms compete in what is becoming a borderless and increasingly fierce market. These state programs are important for the states; they are important for the nation. The programs contribute to economic development; they contribute to needed improvements in our science and technology infrastructure.

It is obvious that I am an enthusiast for these programs. This enthusiasm needs to be tempered somewhat, however, in recognition of the larger context in which these programs fit. I would like to conclude with two cautionary notes and a recommendation.

The first cautionary note is the repetition of an earlier statement. Investments in science and technology are long-term approaches to economic development. How will they fare within the changing fortunes of state budgets? Will they become institutionalized beyond the terms of the initial political champions? The base of support for these programs is still forming and is not always aided by a highly visible bidding war such as Governor Babbitt described for MCC. A general acceptance of and patience with the long-term nature of the science and technology strategies for economic development by state government are absolutely necessary and I expect will be difficult to achieve.

The second cautionary note in a sense turns the total paper on its head. As much as I have said about the importance of science and technology to economic development, nonetheless it is important to add that economic development depends on much more than science and technology. The following comments by Harold Shapiro, president of Princeton, convey the point:

"...if we want to get economic growth out of new science and technology, we have to pay attention to what I call "everything else," and the everything else really could not be summarized better than by saying "how groups work together" — how we relate to each other, how we treat each other, and how we trust each other.

...what may not be in our best interest is the belief that superiority in science alone — at the expense of "everything else" — will ensure this country's economic strength

The lessons of history tell us otherwise. For example, it was not Britain's science and technology superiority that made it first in the Industrial Revolution. It was political stability, it was the society's concept of private property, it was decentralization of authority in British institutions. It was not that the British had better science than did Belgium and France. It is very, very seldom that a monopoly on science alone has produced a tremendous spurt in sustained economic and social dividends. Why is it that we do not read that lesson?[1]

I end with a recommendation: As you are considering a science and technology strategy for economic development, and as this consideration takes you into concerns about the science and technology institutions and programs within Virginia, I urge you to also consider that state investments in science and technology must be for purposes that go beyond economic development and include objectives such as environmental maintenance, a healthy citizenry, and energy efficiency. Just as in the area of job creation, states always have had an important role in each of these areas, and if anything their role is increasing. My only point is that just as state policy makers are concerned with the adequacy and the contributions of the science and technology infrastructure to job creation, they must also be concerned with the adequacy and the contributions of that infrastructure for these other purposes.

Note: Tables and figures for this essay follow.

[1]*Gomory and Shapiro, "A Dialogue on Competitiveness," Issues in Science and Technology, (National Academy Press, 1988)*

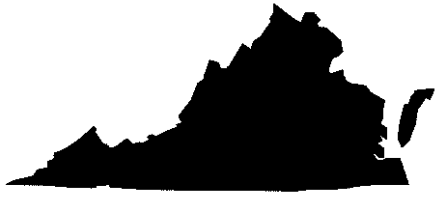


TABLE I

Descriptions of State Technology Programs

Technology Offices. These include boards, commissions, authorities, or offices that oversee or coordinate state technology initiatives. The most common type of structure is a public/private partnership of representatives from private firms, academia, and state government. Technology offices may operate as independent public agencies or private nonprofit corporations. The duties and responsibilities of technology offices range from the administration of multi-million dollar technology centers to information dissemination and advisory services.

Technical/Managerial Assistance. Technical or managerial assistance programs assist in the development of business plans and marketing strategies, advise firms on personnel, accounting, and legal matters, and identify sources of financing. Professionals also evaluate product lines and manufacturing processes, assist in the use of state-of-the-art design and manufacturing tools, and identify special expertise at universities and other research centers.

Technology/Research Centers. These centers, also known as "Advanced Technology Centers" or "Centers of Excellence," are usually located at universities or affiliated with them. They strive to increase cooperation between academic institutions and state-based industries. These centers generally concentrate on a particular field of research that draws on the strengths of a university and/or the major industries in the state. Technology or research centers assist in the creation of new firms through the development and enhancement of products and processes, attracting new industries to the state, and enhancing the competitiveness of existing industries through the application of advanced technology processes or products.

Technology Transfer. Technology transfer programs facilitate the transmission of new technologies from the laboratory to the private sector. These technologies can become the impetus for the creation of new business, the introduction of new products lines for established firms, or the revitalization of mature industries. Technology transfer is achieved through information exchange and active outreach programs that seek users for existing and newly-developed technologies.

Research Grants. Research grants are usually made to universities based on joint proposals from the university and a private sector sponsor. Most often, these grants require a certain level of matching funds from the private sector. Grant approval usually depends on its potential for economic development and future job creation.

Incubators. Incubator facilities provide below-market rates for office and lab space for start-up companies. In addition, these facilities offer shared support for clerical, reception, and computer services. Once a company has progressed to a specified development level, it is expected to leave the incubator in order to allow the facility to accommodate new start-up companies. Incubator facilities are usually located in or near advanced technology centers and commercial research parks.

Research Parks. Research parks are planned groupings of technology companies, often near universities, that encourage university/private partnerships. They draw industry to a particular location

and provide incubator facilities and services that encourage the development of new business. Generally, states provide initial capital with the requirement that future funds come from private sources.

Seed/Venture Capital. Seed and venture capital programs provide risk financing to early-stage companies that are unable to secure funds from traditional sources. Funding is provided to start-up companies whose projects have commercial and/or job creation potential. Seed capital is provided to companies that have yet to develop a marketable product. Venture capital financing is available to developing companies with established business plans and commercially feasible projects.

Technical Training. Realizing the significance of a skilled workforce for attracting high technology businesses, states offer various training programs. States either sponsor programs through an institute for higher learning or provide financial assistance to private companies to implement their own training programs.

Equity/Royalty Investment. States with equity or royalty investment programs provide risk capital to new start-up businesses and developing firms. Funding is generally available to companies with commercially feasible products and processes. Typically, funds are used as working capital for land and equipment purchases, organizational expenses, and research and development efforts. Equity investments provide the state with a share by ownership in the financial success of the firm. Royalty investments require a repayment to the state based either on a dollar amount per unit sold or a percentage of gross or net revenues.

Source: Minnesota Department of Trade and Development, Office of Science and Technology, 1988.

TABLE II

Science and Technology Programs By State

State	Technology Offices	Technical & Managerial Assistance	Incubators	Seed Capital Programs	Venture Capital	Tax Incentives	Equity Programs
Alabama	✓	✓	✓				
Alaska	✓	✓					
Arizona		✓					
Arkansas	✓	✓	✓	✓		✓	
California							
Colorado	✓						
Connecticut	✓		✓	✓			
Delaware	✓	✓				✓	
Florida	✓			✓			
Georgia	✓	✓	✓		✓		
Hawaii	✓	✓	✓		✓		
Idaho		✓					
Illinois	✓		✓		✓		✓
Indiana	✓	✓		✓		✓	
Iowa	✓	✓	✓			✓	
Kansas	✓	✓		✓			
Kentucky	✓	✓	✓				
Louisiana							
Maine	✓						
Maryland	✓	✓	✓				
Massachusetts	✓						✓
Michigan	✓	✓		✓		✓	
Minnesota	✓	✓			✓	✓	
Mississippi		✓					
Missouri	✓		✓			✓	

TABLE II *(continued)*

State	Technology Offices	Technical & Managerial Assistance	Incubators	Seed Capital Programs	Venture Capital	Tax Incentives	Equity Programs
Montana	✓	✓		✓			
Nebraska	✓	✓			✓		
Nevada							
New Hampshire		✓	✓				
New Jersey	✓	✓	✓				
New Mexico	✓			✓	✓		
New York	✓	✓			✓		
North Carolina	✓	✓	✓				
North Dakota		✓					
Ohio	✓		✓				
Oklahoma	✓					✓	
Oregon	✓	✓		✓		✓	
Pennsylvania	✓	✓	✓	✓	✓		
Rhode Island	✓						
South Carolina	✓	✓					
South Dakota							
Tennessee	✓	✓			✓		
Texas		✓					
Utah					✓		
Vermont			✓				
Virginia	✓	✓	✓			✓	
Washington	✓	✓	✓			✓	
West Virginia							
Wisconsin							
Wyoming	✓						

TABLE II *(continued)*

State	Royalty Programs	Technology & Research Centers	Research Grants	Technology Transfer	Technical Training	Research & Technology Parks	Information/ Networking
Alabama			✓		✓		
Alaska							
Arizona		✓				✓	
Arkansas				✓			
California			✓				
Colorado		✓		✓			✓
Connecticut	✓		✓			✓	✓
Delaware		✓			✓	✓	
Florida			✓	✓	✓		
Georgia		✓		✓			✓
Hawaii		✓			✓	✓	
Idaho		✓					
Illinois	✓			✓		✓	
Indiana			✓	✓			
Iowa	✓	✓	✓			✓	
Kansas		✓	✓	✓			✓
Kentucky		✓	✓	✓		✓	
Louisiana							
Maine			✓	✓			✓
Maryland		✓					✓
Massachusetts		✓			✓		
Michigan	✓	✓	✓		✓		✓
Minnesota		✓	✓	✓	✓	✓	
Mississippi				✓	✓		
Missouri		✓		✓		✓	✓

TABLE II *(continued)*

State	Royalty Programs	Technology & Research Centers	Research Grants	Technology Transfer	Technical Training	Research & Technology Parks	Information/ Networking
Montana			✓	✓			
Nebraska		✓					
Nevada							
New Hampshire							
New Jersey		✓	✓	✓			
New Mexico		✓		✓			
New York		✓	✓				✓
North Carolina	✓	✓	✓				✓
North Dakota		✓		✓			
Ohio		✓	✓	✓			✓
Oklahoma		✓	✓	✓			✓
Oregon			✓	✓			✓
Pennsylvania		✓	✓				
Rhode Island			✓	✓			
South Carolina						✓	
South Dakota			✓				
Tennessee		✓		✓		✓	
Texas			✓	✓			✓
Utah		✓					✓
Vermont			✓	✓			
Virginia		✓	✓	✓			
Washington		✓		✓			
West Virginia		✓			✓		
Wisconsin		✓	✓	✓	✓		
Wyoming							

Source: Minnesota Department of Trade and Development, Office of Science and Technology, 1988.

TABLE III

1988 Fiscal Funding for Technology Initiatives

State	Total State Funding	State General Funds	Initial State Funding	Bond Issue	Miscellaneous Funding Source*
Alabama	$ 2,855,205	$ 1,055,205			$1,800,000 (a)
Alaska	30,000	30,000			
Arizona	7,000,000	7,000,000			
Arkansas	3,150,000	3,150,000			
California	5,900,000	5,900,000			
Colorado	3,700,000	3,700,000			
Connecticut	12,550,000	9,450,000		$ 3,100,000	
Delaware	1,650,000	1,550,000		100,000	
Florida	27,958,000	27,958,000			
Georgia	11,094,430	11,094,430			
Hawaii	2,851,000	2,851,000			
Idaho	0				
Illinois	13,540,000	12,540,000		1,000,000	
Indiana	10,637,500	10,637,500			
Iowa	4,895,000	1,395,000			3,500,000 (b)
Kansas	3,550,000	3,425,000			125,000 (c)
Kentucky (FY89)	560,000	560,000			
Louisiana	0				
Maine	184,280	184,280			
Maryland	7,365,750	7,365,750			
Massachusetts	14,665,000	14,665,000			
Michigan	13,063,500	13,063,500			
Minnesota	39,439,200	39,439,200			
Mississippi	9,300,000	9,300,000			

*Miscellaneous Funds: (a) State Trust Funds (b) State Lottery (c) State Gaming Funds

TABLE III *(continued)*

State	Total State Funding	State General Funds	Initial State Funding	Bond Issue	Miscellaneous Funding Source*
Missouri	28,566,000	28,466,000	100,000		
Montana	3,550,000	3,550,000			
Nebraska	858,500	858,500			
Nevada	0				
New Hampshire	200,000	200,000			
New Jersey	76,345,000	19,345,000		57,000,000	
New Mexico	7,654,000	7,654,000			
New York	22,129,300	22,129,300			
North Carolina	23,357,000	23,357,000			
North Dakota	207,000	207,000			
Ohio	18,000,000	18,000,000			
Oklahoma	12,046,375	12,046,375			
Oregon	2,215,000				2,215,000 (d)
Pennsylvania	49,050,000	49,050,000			
Rhode Island	2,000,000	2,000,000			
South Carolina	0				
South Dakota	3,050,000				3,050,000 (e)
Tennessee	13,109,400	13,109,400			
Texas	60,690,000	60,690,000			
Utah	5,187,000	5,187,000			
Vermont	0				
Virginia	9,400,000	9,400,000			
Washington	11,000,000	11,000,000			
West Virginia	150,000	150,000			
Wisconsin	18,978,000	18,978,000			
Wyoming	0				

*Miscellaneous Funds: (d) State Lottery (e) Future Fund

Source: Minnesota Department of Trade and Development, Office of Science and Technology, 1988.

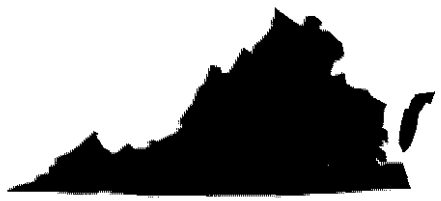


TABLE IV

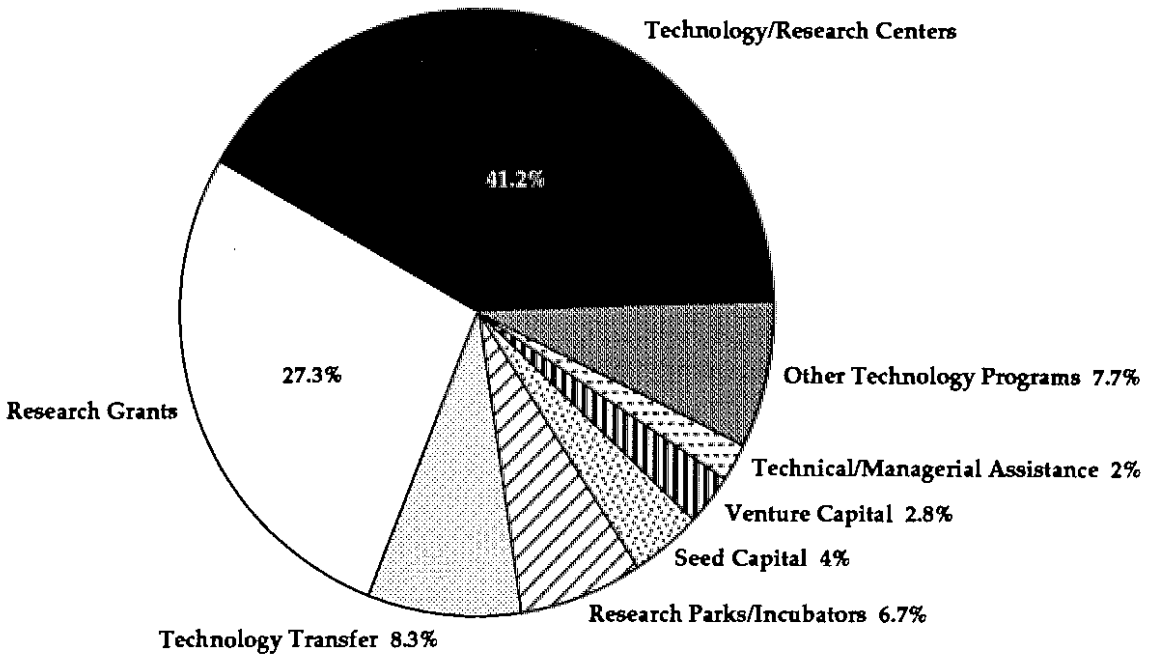
1988 State Technology Per-Capita Expenditures

State	Funding	Population	Per-Capita	State	Funding	Population	Per-Capita
Alabama	$ 2,855,205	4,083,000	0.70	Montana	$3,550,000	809,000	4.39
Alaska	30,000	525,000	0.06	Nebraska	858,500	1,594,000	0.54
Arizona	7,000,000	3,386,000	2.07	Nevada	0	1,007,000	0
Arkansas	3,150,000	2,388,000	1.32	New Hampshire	200,000	1,057,000	0.19
California	5,900,000	27,663,000	0.21	New Jersey	76,345,000	7,672,000	9.95
Colorado	3,700,000	3,296,000	1.12	New Mexico	7,654,000	1,500,000	5.10
Connecticut	12,550,000	3,211,000	3.91	New York	22,129,300	17,825,000	1.24
Delaware	1,650,000	644,000	2.56	North Carolina	23,357,000	6,413,000	3.64
Florida	27,958,000	12,023,000	2.32	North Dakota	207,000	672,000	0.31
Georgia	11,094,430	6,222,000	1.78	Ohio	18,000,000	10,784,000	1.67
Hawaii	2,851,000	1,083,000	2.63	Oklahoma	12,046,375	3,272,000	3.68
Idaho	0	998,000	0	Oregon	2,215,000	2,724,000	0.81
Illinois	13,540,000	11,582,000	1.17	Pennsylvania	49,050,000	11,936,000	4.11
Indiana	10,637,500	5,531,000	1.92	Rhode Island	2,000,000	986,000	2.03
Iowa	4,895,000	2,834,000	1.73	South Carolina	0	3,425,000	0
Kansas	3,550,000	2,476,000	1.43	South Dakota	3,050,000	709,000	4.30
Kentucky (FY89)	560,000	3,727,000	0.15	Tennessee	13,109,400	4,855,000	2.70
Louisiana	0	4,461,000	0	Texas	60,690,000	16,789,000	3.61
Maine	184,280	1,187,000	0.16	Utah	5,187,000	1,680,000	3.09
Maryland	7,365,750	4,535,000	1.62	Vermont	0	548,000	0
Massachusetts	14,665,000	5,855,000	2.50	Virginia	9,400,000	5,904,000	1.59
Michigan	13,063,500	9,200,000	1.42	Washington	11,000,000	4,538,000	2.42
Minnesota	39,439,200	4,246,000	9.29	West Virginia	150,000	1,897,000	0.08
Mississippi	9,300,000	2,625,000	3.54	Wisconsin	18,978,000	4,807,000	3.95
Missouri	28,566,000	5,103,000	5.60	Wyoming	0	490,000	0

Source: Minnesota Department of Trade and Development, Office of Science and Technology, 1988.

FIGURE A

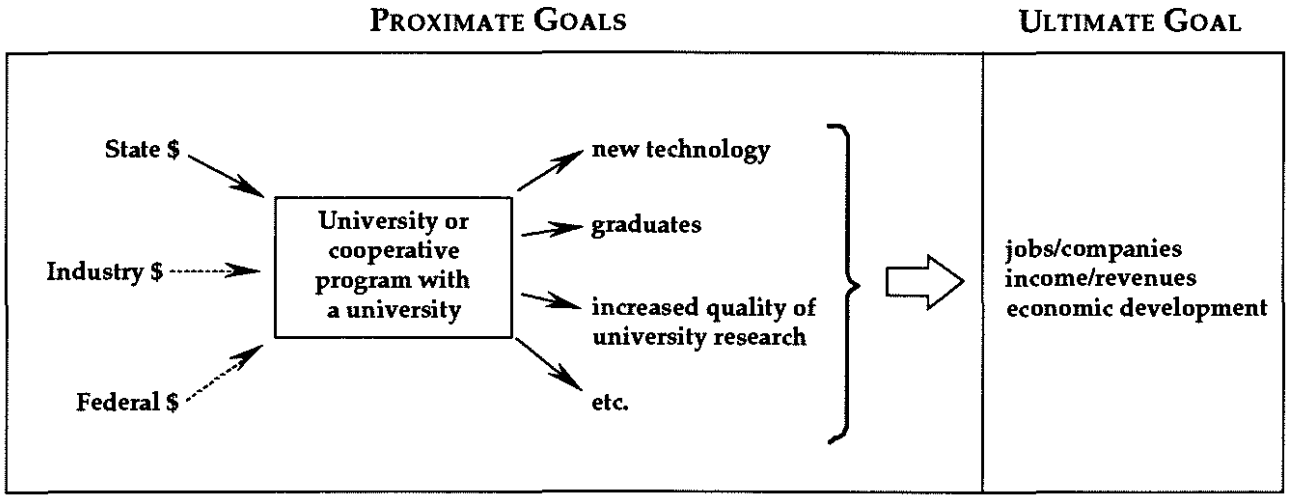
Science and Technology Initiatives
Distribution of State Expenditures in the U.S.
Fiscal Year 1988



Source: Minnesota Department of Trade and Development, Office of Science and Technology, 1988.

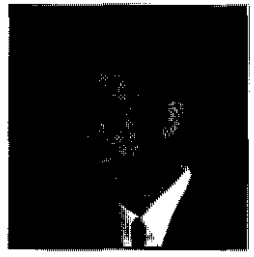
FIGURE B

Common Elements of State Government Programs in Science and Technology for Economic Development



Source: State Government Strategies for Self-Assessment of Science and Technology Programs for Economic Development, *April 1987, Government-University-Industry Research Roundtable.*

The Role of Legislatures in State Economic Development



Presented by:

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National Conference of
State Legislatures

"The talk today is of the 'changing world economy.' I wish to argue that the world economy is not 'changing'; it has already changed—in its foundations and in its structure—and in all probability the change is irreversible.

Practitioners, whether in government or in business, cannot wait until there is a new theory. They have to act. And their actions will be more likely to succeed the more they are based on the realities of a changed world economy."

Peter Drucker
"The Changed World Economy"
Foreign Affairs, Spring 1986

This paper will provide an overview of state legislative involvement in analyzing a state's economy and in creating, implementing, funding, and evaluating state economic development strategies, policies, and programs.

The thesis of this paper is that the active and informed involvement of the legislature is essential for a successful state economic development effort. The legislature should work in a cooperative partnership with the governor and his staff, the state economic development agency, local units of government, the academic community, and the private sector (large corporations, small business, labor, agriculture, finance, and other major economic sectors).

The intense nature of international economic competition, the rapid pace of technological change, the often painful transformation of the U.S. economy, and the withdrawal of the federal government from a role in economic development has driven a central point home to the states: it is up to each state to respond.

The Changed World Economy

The two forces that are driving the global economy today—and causing the structural changes in the U.S. economy—are the rapid changes in technology and the fierce level of global economic competition. In 1970, only 20 percent of U.S. goods and services faced foreign competition. In 1980, 70 percent of U.S. goods and services faced foreign competition. Other facts that illustrate the transformation of the U.S. economy:

- Since 1987, the U.S. has lost 27 percent of its jobs in manufacturing. Yet the percentage of gross national product that is due to manufacturing remains at about 21-22 percent. Only nine percent of U.S. workers remain in manufacturing.

- The number of Americans who are self-employed or run their own firms now is equal to the number that belong to unions.

- Since 1980, the Fortune 500 companies have lost three million jobs—while firms of less than 100 employees have gained ten million jobs.

- The U.S. can no longer compete in industries that produce basic, standardized products because they can be produced overseas where labor costs are dramatically less. Workers in Asia earn in one day what American workers earn in one hour.

- In 1970, imports were only nine percent of all goods bought by Americans; by 1980, imports totaled 22 percent.

- The average time that elapsed between a research breakthrough in a laboratory of the industrial era and commercialization of that breakthrough was 15 years. That time lag by the mid-1970s had dwindled to three to four years.

- During the industrial era, the average life of a new product was measured in decades. It is now three to five years for electronic products.

The U.S. has been undergoing an economic transformation because of the twin—and related—forces of international competition and changing technology. At the foundation of these two forces is the advent of the computer and the way in which the microelectronic revolution has changed the U.S. economy as well as that of its competitors.

The industrial economy of the U.S. is transforming from one based on large-scale, stable corporations to one characterized by rapid change, technological innovation, and intensive use of knowledge. As David Osborne writes in Laboratories of Democracy, published in 1988, the competitive advantage for the U.S. lies in "sophisticated new products and services that depend on advanced technologies and skilled workers." According to Osborne:

"In a world awash in low-wage labor, our future rests upon our ability to make research breakthroughs in the laboratory, to translate those breakthroughs into new products and processes, and to manufacture the results using the kind of technological sophistication and skilled labor that is still rare in developing countries. In a nutshell, our future rests upon our ability to compete.

Although most solutions to this economic challenge will be found in the private sector, the states can play a role as broker, catalyst, and partner."

State Initiatives in Economic Development

Since the mid-1970s, but especially during the 1980s, most states took a very active role in economic development by adopting a wide range of initiatives as they sought to revitalize their economies, diversify, and become more competitive in the global marketplace. Economic development, however, has often been characterized by a lack of agreement on what is "economic development," including such issues as:

- The changes that have taken place in the world economy, the U.S. economy and the economy of individual states,
- An objective understanding and consensus on the strengths and weaknesses of a state's economy,
- The indicators and measurements of a state's economy to determine the so-called "business climate" or its economic competitiveness,
- The roles of the public and private sectors in economic development as well as the nature of the "partnership" (such partnerships have become one of the most important characteristics of state economic development) between them,
- An explicit definition of economic development,
- A "vision" of what the state's economic future could be with concerted public-private action,
- The nature of goals and objectives in economic development,
- The types of initiatives and strategies (both short- as well as long-term) that should be taken to try to reach the goals.

Because of the lack of agreement on these major questions, a small but growing number of states have taken steps to craft strategic economic development plans. Not all have been successful. As Scott Fosler of the Committee for Economic Development points out, "The challenge is to identify which combination of actions will have the highest economic impact in the context of a changing world economy and the condition of a state's own economy."[1]

[1]*Fosler, R. Scott. "Strategies for State Economic Development." Presentation to the Leadership Conference, Maryland House of Delegates, Annapolis, Md., Dec. 14, 1987. Committee for Economic Development, 1700 K Street, N.W., Washington, D.C. 20006.*

Innovation: The Key to State Economic Competitiveness

Traditional economic development (known as industrial recruitment or smoke-stack chasing and more recently as micro-chip chasing) has been turned upside down by the revolution in thinking about economic competitiveness and sources of job growth.

In most states, according to Roger Vaughan, co-author of The Wealth of States: Policies for a Dynamic Economy, which was published in 1985, relocations and new branch plants account for less than 5 percent of new job growth. The rest comes from the expansion of existing firms and the start-up of new, small businesses. Consequently, states have concentrated on "growth from within."

State policymakers have become increasingly critical of industrial recruitment and the costs of the tax and other incentives that states offer to attract businesses. For example, the Volkswagon plant which cost Pennsylvania $100 million only reached half of the promised workforce level—and now it's shut down. It became known as the "Rabbit that ate Pennsylvania."

The key to state economic competitiveness is rapid innovation in quality of products and in producing new products. How well the U.S. performs economically against its global competitors will depend on how well it innovates. Thus, its most important resource will be "entrepreneurs," those willing to innovate and take risks.

To innovate means to emphasize the "home-grown" economy and to build from within. It means putting industrial recruitment in perspective and giving it a more balanced emphasis. In addition, the selling points for recruitment are becoming the intellectual infrastructure, research universities, and public-private technology partnerships that transfer the fruits of research to the marketplace as new products or new manufacturing processes.

During the mid- to late 1970s, in a few pioneering states (Pennsylvania, California, Massachusetts, and Connecticut), the emphasis in economic development shifted to the start-up and growth of new, technology-intensive businesses.

Key characteristics of these state innovations are that they seek to change the way the market (whether in R&D and technology transfer, capital, labor-management relations, job training, etc.) operates and to fill in the gaps as a last resort. It means investing in the process of change—but not subsidizing individual firms.

State Spending on Economic Development

In fiscal year 1988, the states spent more than $1 billion on economic development, according to the National Association of State Development Agencies. (This figure, however, is only for state economic development agencies. It does not take into account state expenditures in other areas on behalf of economic development or appropriations to quasi-public organizations involved in such areas as capital financing, job training, technology innovation and transfer, research and development, and strategic planning.)

The average state spent $21 million in FY 1988. One state appropriated more than $246 million. Since 1982, the average state appropriation for economic development has doubled every two years.

As mentioned, recruitment used to be the primary strategy of state economic development. Now, however, the average state spends 54 percent of its economic development agency funds on in-state business start-up, expansion, and retention, while 15 percent is spent on foreign recruitment and 31 percent on domestic recruitment, according to the NASDA survey.

The Role of Legislatures in Economic Development

State legislatures have been involved in economic development in at least five major ways:

- Enactment of programs. Whether the proposals come from the governor, the economic development agency, individual legislators, or from others, the legislature will enact the statutes that create the programs.

- Program funding. Through the budgetary and appropriations process, the legislature appropriates funds to run the economic development agency and its programs.

- Executive agencies. Legislatures create or restructure, or both, the state agencies and quasi-public organizations that are responsible for economic development.

- Strategic planning. In a small number of states, the legislatures have participated in the creation of a broad, long-term economic development strat-

egy. In some of those states, the legislature was the primary force behind the plan.

- Evaluation. Legislatures traditionally have fulfilled their oversight responsibility for enacted programs through the budgetary and appropriations process, when agency officials seek to justify their budget requests by detailing their accomplishments. Within the last three years, however, more and more legislatures that possess program evaluation/performance audit offices have begun to take a look at economic development programs. NCSL has created a clearinghouse of such evaluations, which now total more than 45. Some evaluations have examined only specific programs. Others have studied the economic development agency. A few have tried to examine all state programs and agencies that are involved in economic development.

Rationale for Legislative Involvement

As discussed, legislatures are responsible for enacting bills that create and fund economic development agencies and for providing oversight. Consequently, the active and informed participation of the legislature in economic development can assist in developing the critical public-private consensus on the state's overall economic development strategy, specific policies and programs, and priorities for tackling issues.

Without the involved cooperation of the legislature, a state's efforts will be less than optimal because it may be damaged by political and institutional rivalries between the legislature and the governor and between chambers. Such divisions also enable various interest groups to advocate their definition of economic development and to put forth their initiatives, which naturally reflect their self-interest.

Politicizing the policy-making process for economic development has hindered the initiatives of some states. Consensus and pragmatism appear to be the bywords for state economic development today.

Structural Changes in Legislatures

Just as governors' offices and economic development agencies have been restructured to meet the new economic challenges, so have the legislatures. There are at least four major ways in which legislatures have changed:

- Many legislatures have created standing committees on economic development, which also have jurisdiction for international trade promotion. These new committees provide a clear focus to examine issues and proposed legislation.

- Along with the new committees has come increased expertise in economic development by both legislators and staff, which lays the foundation for legislative initiatives as well as informed oversight of the executive branch.

- In becoming pro-active, some legislatures—even some individual chambers—have issued their own strategic plans for economic development.

- A few legislatures have direct links to the permanent state quasi-public strategic planning commission. In Kansas and Oklahoma, for example, the chairs of the Senate and House Economic Development Committees serve by statute on Kansas, Inc., and Oklahoma Futures, respectively.

Lessons From the Experiences of the States

As Osborne points out, a state that seeks to implement an economic development strategy or to evaluate its programs can learn from the experiences of other states.

Don't copy anything—the process of creating something is critically important because the process (the interactions and the synergy) show those involved how to do it. How the policies and programs are structured and linked together, consequently, is as important as the specific policies and programs. The role of state government has become that of catalyst and broker.

State economic competitiveness today seeks to change the mindset of business, labor, universities, and government and thus create new linkages and approaches to solving problems. By changing the incentives, state government can shape behavior without imposing or mandating solutions from above that do not take into account local problems and conditions. The response will come from the grassroots—not from the state capital.

The lessons learned from such states as Pennsylvania and Michigan is that the key to success is how the various policies and programs are networked together, which creates synergy. The Ben Franklin Partnership in Pennsylvania is probably the best known. It involves public private partnerships in R&D, capital financing (seed and venture capital), business incubators, marketing, managerial advice, technical assistance, and job training.

Here are some principles of the new state economic development model as laid out by Osborne:

- Strengths and weaknesses analysis. Develop a detailed, thorough understanding of the state's econ-

omy and its strengths and weaknesses. Only a few states have done this: Pennsylvania, Michigan, Washington, Wisconsin, Indiana, Kansas, Oklahoma, and Texas.

The strengths-and-weaknesses analysis of a strategic economic competitiveness plan drives the subsequent policy and programmatic recommendations towards the long-term goals and objectives. Only a few states have succeeded at a truly comprehensive and dynamic strategic planning effort for economic competitiveness. In many states, the politics and process of devising a strategic economic development plan have been pivotal in the success or failure of the plan.

Establish priorities and then methodically address the problems. States that issue laundry lists of problems, policies, and programs risk accomplishing little because they are not targeting public resources to the most important problems in a methodical manner for maximum effect.

- Altering private sector behavior. The purpose of state action should be to change the behavior of the private sector and not to create government bureaucracies and programs. "Wholesale" instead of "retail." Public dollars are "invested" in changing the private sector behavior and not spent on individual firms. (The Michigan Strategic Fund, for example, provides an insurance fund for banks so they will make riskier loans.) By changing the incentives, states encourage a response and do not impose a "solution."

- Invest, don't spend. For example, the Michigan Strategic Fund is investing in BIDCOs (business and industrial development corporations) and will earn a financial return, as will the Michigan Strategic Fund's venture capital investments. The more important goal, however, is not the Fund's monetary return but the encouragement of the private sector to create new financial institutions to fill gaps in the state's capital market.

- Reward performance. Measure the return and fund programs based on performance. Use indicators to measure performance. Pennsylvania's Ben Franklin Partnership awards grants among the four advanced technology centers based on performance.

- Human resources. If people (human capital) are the key to innovation, then attack social and

economic problems at the same time. States are now linking such problems as child welfare, early childhood education, school dropouts, and teen pregnancy to state economic competitiveness. The welfare reform effort by states in recent years has been an example of this linkage.

- Strengthen local capacity. Build local/regional economic development capacity because economic development, in the end, is a local/regional matter. Encourage and nurture alliances and partnerships among business, labor, colleges and universities, and local governments, as well as non-profit organizations, to analyze economic problems and construct solutions. (The Regional Enterprise Development Program in Pennsylvania involves such local interests in providing management help, financial assistance, help with exporting, aid in competing for state and federal government procurement contracts, and industrial extension services.)

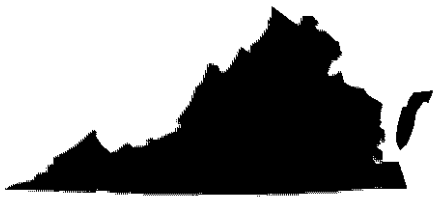
- Decentralize initiatives. Decentralize economic development programs around identifiable regional economies within a state.

- Comprehensive services. Provide comprehensive programs within each region because entrepreneurs have many interrelated needs: managerial, labor, marketing, technical, financial, etc. Many states have assumed that capital financing programs are all that is needed to encourage economic development.

- Begin small. Create programs first on an appropriate scale and, when they are successful, gradually expand them. The California export finance program is such an example.

- Long-term foundations. Keep in mind and address the long-term components of a state economic competitiveness strategy: environment and quality of life, education, job training, R&D and technology innovation, financial systems, state tax structure, state regulatory environment, telecommunications, public infrastructure (roads, airports, ports, bridges, water and sewage systems, mass transit), and so forth.

- Update the plan and evaluate. The state's strategic plan should be reviewed periodically to adjust



for economic and other changes. Specific policies and programs should be regularly evaluated. Measurement indicators should be built into the enabling legislation for programs to facilitate later evaluation. The legislature should specify who will evaluate the programs and when.

Conclusion

The competition among the states today is not about who can land a superconducting supercollider or a Saturn automobile plant or any of the other plums that the news media writes about. This is not to say that states should drop out of the recruitment game, by any means.

The real competition among the states is to effectively organize themselves to assist the private sector in facing the economic challenges of the 1990s. The active and informed participation of legislatures is critical to the success of such efforts.

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