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BEN FRANKLIN TECHNOLOGY PARTNERS OF SOUTHEASTERN PENNSYLVANIA
BEFORE THE SUBCOMMITTEE ON TECHNOLOGY AND INNOVATION
UNITED STATES HOUSE COMMITTEE ON SCIENCE AND TECHNOLOGY
HEARING ON COMMERCE DEPARTMENT PROGRAMS TO SUPPORT JOB CREATION AND INNOVATION AT SMALL AND MEDIUM-SIZED MANUFACTURERS

JANUARY 21, 2010

Mr. Chairman and members of the Committee, thank you for affording me the opportunity to address you today.

I am RoseAnn B. Rosenthal, President and Chief Executive Officer of the Ben Franklin Technology Partners of Southeastern Pennsylvania, one of four Ben Franklin Technology Partners created through Pennsylvania legislative action in 1982.

Ben Franklin is the Commonwealth of Pennsylvania's partner in innovation, technology and entrepreneurship, created at an earlier time of economic recession and job loss in our nation. The Ben Franklin Partnership mission was, and is, to catalyze efforts to rebuild Pennsylvania's economy through science and technology.

Our mission is consistent with the mission of the Department of Commerce's new Office of Innovation and Entrepreneurship. The newly-created Office, given the appropriate resources, presents an ideal opportunity for implementing new policies. We applaud its mission to "…unleash and maximize the economic potential of new ideas by removing barriers to entrepreneurship and the development of high-growth and innovation-based businesses."

The CEOs of the Ben Franklin Technology Partners had an opportunity to meet with Esther C. Lee, Senior Policy Advisor to the Office of the Secretary, and members of her team, shortly after the announcement was made. Since then, we have exchanged ideas around this Office's emerging priorities, which are fundamental in their support of high growth, innovative enterprises. We are encouraged that the Office will bring together representatives from the multiple agencies whose programs impact this important, national objective. We are also pleased to understand that the work of this Office will be informed by a national Advisory Council on Innovation and Entrepreneurship that will bring to the table the experience, insight and ideas of individuals representing national "Laboratories of Democracy" as David Osborne described such efforts, including ours, back in 1988.

Mr. Chairman, my partners and I applaud the Committee's leadership for holding this hearing and hope that the message you and your colleagues take away from today is that we, in the non-profit world, at the state and local levels, have been commercializing technology for many years, very effectively. We can offer concrete, practical, suggestions for redirecting existing federal dollars to update programs to maximize federal investment and generate increased job creation.

The Ben Franklin Technology Partners operate as private, independent, non-profit organizations, strategically located in four regions of our state. We represent a diversity of cultures, span geographies from urban to rural, and are in close proximity to Pennsylvania's respected research universities.

For over 25 years, the Ben Franklin Technology Partners, working both in our regions and as a statewide network, have assembled public/private partnerships and developed models that have supported the formation and growth of technology enterprises--from their earliest, idea stage, through proof of concept, growth, maturity

and reinvention. Our model has helped Pennsylvania enterprises create over 25,000[1] high wage jobs in the years 1989 through 2008…over 2100 of those in 2008; and we have worked to retain tens of thousands more. But, beyond the number, our model has helped to create and strengthen the culture for innovation and entrepreneurship in Pennsylvania.

The Pennsylvania Economy League, a nonpartisan research organization, conducted an independent, objective evaluation of the economic impact of Pennsylvania's Ben Franklin Technology Partners from 2002 through 2006. It found that the Network boosted Pennsylvania's economy by more than $17 billion. Its report documented that:

- ✓ ***For every $1.00 invested in Ben Franklin, $3.50 was returned to the state treasury.***
- ✓ ***Jobs created by Ben Franklin's clients paid 33% higher than the average nonfarm salary in Pennsylvania as a whole.***
- ✓ ***Over 125,000 job-years were created as a result of BFTP investments and services. Job years are the years of full-time work created.***

Over its history, Ben Franklin has been widely praised and modeled by other states and countries. The network was acknowledged by the U.S. Department of Commerce in 2008, our 25th Anniversary, with the Technology-Led Economic Development Award. In 2009, the International Economic Development Council named the statewide Ben Franklin program as the winner of its Excellence in Technology-Based Economic Development award.

Important to Ben Franklin's ability to effectively serve our constituents has been the flexibility of our enabling legislation that allows us to anticipate and respond to market changes and to evolve as the needs of our communities change. Often,

[1] 25,371 jobs created (1989-2008)
24,736 jobs retained (1994-2008)
2,113 jobs created (2008)
1,221 jobs retained (2008)

government-funded programs are overly prescriptive, with multiple, conflicting goals that confuse their purpose and cloud implementation. The Ben Franklin model charges each region to develop comprehensive strategies for the implementation of state resources based on the needs and opportunities of our region. We develop approaches that attract other investment to match the state funding, and then we assume responsibility for results, under the direction of our private boards of directors.

Today, Ben Franklin pursues its mission of growth through technology-based entrepreneurship and innovation by:

- Seeding emerging technology enterprises that have gone on to become leading technology employers and partnering to create private investment pools for seed and early-stage investment;
- Providing the facilities, business and technical advice, mentoring, coaching and the networks that help emerging and growing enterprises thrive;
- Developing new pathways to accelerate intellectual property discovered in universities and federal laboratories to the marketplace;
- Helping existing manufacturers and research development companies to source and fund the specific technical and business assistance they need to move a concept to the marketplace quickly, leveraging their existing capacity to generate new revenues;
- Working with leading technology corporations to identify open innovation partners and approaches that can help fill their new product pipeline; and,
- Collaborating with institutions and diverse constituencies in our areas to develop regional core competencies into robust economic development strategies that leverage our strengths to address regional challenges to future growth and prosperity.

The three part philosophy that drives our actions in Southeastern Pennsylvania is one that starts, **first**, with a focus on the ***entrepreneur*** as the agent of change and economic growth. Everything that we do is structured to assist the formation and growth of technology entrepreneurs across all sectors. Our strategy links **Capital, Knowledge and Networks** into a comprehensive framework for regional growth.

Second, we work at the margins. With limited resources, we seek to deploy just enough capital and support to stimulate the flow of other public and private investment to help insure sustainability; then we exit.

And, **third**, we operate through partnerships as a way to engage the community in the business of innovation, thereby strengthening the regional infrastructure for innovation.

The observations I share, today, are those of an economic development practitioner who has worked for just over 40 years to leverage and integrate public and private resources into coherent, effective, regional growth strategies, and who is gratified to see attention to science, technology development and innovative, growth enterprises move closer into the mainstream of policy and economic development agendas.

There are many federal economic development programs, tools, and structures that seek to spur growth. However, some, designed to address needs identified 40, 50, or more, years ago, warrant a fresh look and some retooling to accommodate the challenges we face, today, in assembling the assets required for sustained innovation.

The formation and growth of technology enterprises requires access to patient capital at the very earliest stages…for translational research, for pre-seed and seed capital for enterprises, for the business and technical assistance needed by both emerging and re-emerging companies, and for the work of planning and network building that is critical to

insure returns on the public's investment. Yet, that capital is in short supply…or in forms that do not quite fit the bill.

Federally-funded research at universities is vital to technology breakthroughs and advancement. The goal of this work, however, is not the development or commercialization of a new product…or the establishment of a new enterprise. The "product" of that work is the knowledge generated. The process of transforming new discoveries into technology that has commercial application…the translational process…is not adequately encouraged or supported through federal funding, nor does federal research funding support partnerships with economic development organizations or private entities able to advance this work. The result is that many discoveries remain undeveloped…and economic opportunities are lost. With the right level and form of federal support, organizations like ours could bridge the gap between federally-funded university research and high-tech job creation in order to generate a greater return on the federal investment.

The work of identifying technologies worthy of further development, exploring the best application of any technology, and mitigating some of the early risks in order to attract private technology developers, are pre-competitive, technology development activities that could be accelerated through support of public/private partnerships incorporating market input at appropriate stages of development and enabling organizations such as ours, and others, to partner with large with small institutions in support of commercialization objectives.

The Nanotechnology Institute (NTI) is one such partnership. The NTI is a joint effort of Drexel University, the University of Pennsylvania and the Ben Franklin Technology Partners of Southeastern Pennsylvania, funded by the Commonwealth of Pennsylvania, with the participation of ten additional universities and research

institutions. It has put in place systems to accelerate the evaluation and further development of federally-funded research by reducing barriers to collaboration and partnering with private enterprises, both large and small.

A key accomplishment of the NTI is the establishment of its innovative legal and programmatic structure within which regional universities collaborate at all levels to promote nanotechnology research with potential payoff in economic development. The NTI model incorporates commercialization objectives through the expertise of BFTP/SEP. By breaking down barriers between institutions and disciplines, and focusing on technology transfer and commercial outcomes, the NTI brings the best talent to bear on specific technology areas, yielding a tangible increase in IP creation and commercial development. The NTI's efforts in increasing the research enterprise, linking research institutions, creating new intellectual property, fostering a vibrant environment for new ventures, and marketing the region nationally and internationally have been highly successful. These activities are generating steadily, accelerating, outcomes as measured by their ability to leverage federal research and development funding to generate new intellectual property, technology licenses, and new company spinoffs. [2] The accomplishments of the NTI became the impetus for the Commonwealth of Pennsylvania to support the creation of the Energy Commercialization Institute (ECI), managed by our organization, and based upon similar principles and practices.

The NTI and ECI operate at the earliest phase of the pre-enterprise formation capital gap. That gap extends as new companies are formed and seek investment capital to launch their enterprises…the oft-described "**Valley of Death."**

Capital for these emerging technology innovators has come primarily from the individual entrepreneurs themselves, often in the form of sweat equity, and from private

[2] NTI: 18 months 2008-2009: IP assets: 380; Licenses: 23; Spin-off companies: 11; federal leverage: $25M

investors. However, particularly over the past year to 18 months, we have seen angel investments decline as individual investors adjust to losses in their own financial portfolios. Several states have instituted favorable tax treatment designed to encourage the flow of such capital into emerging, growth enterprises. Consideration of such incentives at a national level could stimulate the flow of private, risk capital.

Venture capital is vital to many high-growth technology enterprises. However, the pace of investment from venture funds has also slowed and the number of venture funds making seed and early-stage investments has decreased. These funds are critical sources of follow-on capital…but, today, there are fewer of them. In recent years, successful repeat funds grew in size and moved further downstream, needing to deploy larger sums of capital into later-stage opportunities. Smaller, and first-time, early-stage funds find it difficult to attract private capital in today's market. Even when institutional investors were very active, they sought opportunities to place larger sums than could be effectively invested by small, early-stage funds. And, the funds that do exist are reserving more of their committed capital for follow-on investments in their current portfolio companies, understandably, and undertaking new investments selectively.

So, while venture funds remain an important source of follow-on investment once companies reach a certain scale and achieve critical milestones, by and large, they are not a source of investment capital at the earliest stages of company formation and development that are characterized by the triple threats of technology, market and management risk.

In some states, like Pennsylvania, pre-seed and seed capital has come from state-supported technology development programs. Over our 25+ years, the four Ben Franklin Technology Partners have seeded and invested in more start up and early stage technology ventures than any other similar organization in the nation…with investments

in over 3,000 companies and technical support and service to thousands more. The Ben Franklin Technology Partners co-invests with individual investors and, as our companies mature, with private venture funds. In 2008, companies funded by Ben Franklin attracted $872 million of follow-on investment.

However, with state revenues severely constrained, support for state technology-based economic development nationwide has suffered cuts, further depleting the capital available for innovative enterprises and initiatives, and straining infrastructures for innovation created over recent years. Combined with the decrease in angel investing and the reduction in venture activity…companies we seed have no where to grow.

This **Valley of Death**, a gap that stretches from the need to demonstrate proof of concept through to early revenue generation or sales, invites creative new approaches and a retooling of some existing federal programs. I recommend the following elements as part of a framework for retooling:

1) Goals that are few, clear and non-conflicting and that keep the ultimate objective…economic growth through entrepreneurial innovation…at the forefront;
2) An approach that is less prescriptive and more receptive to new models, and allows program design to be driven by the specific challenges and opportunities at regional, state and local levels;
3) Flexibility in implementation, enabling timely response as conditions change;
4) Programs that focus on reducing the barriers to collaboration and innovation; and,
5) Designs that catalyze institutional and private involvement and investment over time.

The core areas: 1) Access to capital and 2) Creating effective pathways to commercialization.

Some examples:

1) The Department of Commerce Economic Development Administration (EDA) has revamped many of its programs over the years to support innovation…funding incubators and technology partnerships. However, the resources available to it for regional strategic planning and high-growth innovation are insufficient, may not be available on a consistent basis, and are encumbered by regulations that limit local creativity and ultimate effectiveness. I encourage EDA to reach out to regional and local organizations as part of its process of continuous reinvention.

   EDA's **University Center Economic Development Program** could be modified and boosted to enable the formation of **"Commercialization Partnership Centers."** These partnerships could bring together multiple universities and research institutions, with regional technology development organizations and/or private commercialization entities to drive technology to commercialization. Unlike traditional university centers of excellence, the Commercialization Partnership Centers would not require up front research funding, but be structured to leverage university expertise and resources by funding, on a cost-share basis, commercialization engagements that produce defined outcomes. Federal support could co-fund the engagement activity and the related technical and business assistance.

   We have found that this form of direct, targeted, assistance is as beneficial to mature, established enterprises, who may not be comfortable or have a history of

working with universities, as it is of benefit to emerging firms. In addition, it offers ways to extract the often, specialized, core competencies of small educational and research universities and partner them with other institutions to form larger, more robust commercialization centers.

EDA has capitalized Revolving Loan Funds for over 30 years. While they were innovative and effective tools designed back then, to provide debt financing to existing businesses in distressed areas, they are not a fit for today's equity-based investments in pre-revenue, technology enterprises, that have no hard assets, and whose choice of location is often determined by cost and access to needed technical resources. I recommend consideration of a pilot version that updates and retools this program as a viable source of co-investment capital, managed by qualified, experienced, technology organizations.

2) The SBIR and STTR research-support programs are useful to advance technology development; however, they have a limited focus on commercialization. Many recommendations have been offered regarding these programs. I would urge action on measures that: a) increase funding, particularly for later, commercialization phases; b) enable companies to enter the process at any phase; c) recognize the role of private capital to the growth of enterprises that require significant capital, such as in the life sciences and energy sectors; and d) insure consistency of administration to address non-significant, yet real barriers such as the form and source of other capital investment in enterprises.

3) The Small Business Administration's New Markets Fund offers a template for the creation of a **New Markets Innovation Fund.** Investments in innovative, growth opportunities could be its driving principal, and it could offer organizers the

operational assistance funds needed to support the outreach, coaching and portfolio management functions that are time and cost intensive at the seed stage.

4) The National Science Foundation's Partnership for Innovation Program is a creative, yet sorely underfunded and lately, dormant, tool that provides incentives for innovative, effective public / private partnerships. It should be brought back and updated to enable technology-based organizations to lead collaborative, multi-institutional, commercialization focused efforts.

5) NIST's Technology Innovation Program that funds "high risk" research and solutions that address areas of critical national need and societal challenges and that encourages collaborative industry / university approaches is an example of a successful program reinvention…but it is sorely underfunded. It could implement measures to encourage partnerships with state technology development organizations who can aid the partnering between large and emerging enterprises.

6) Our nation's federal laboratories have a wealth of discoveries that can be the basis for commercial growth; however, there is no mechanism to help absorb the local cost of transforming those possibilities into economic opportunities.

7) And, finally, the new Department of Commerce Office of Innovation and Entrepreneurship. It could be funded to launch even broader, comprehensive, regional models, in partnership with states. It could be the impetus for a **National Innovation Network**, with funded public / private partnerships able to develop the integrated strategies and programs necessary to drive innovation through growth companies that create high-wage jobs. Special incentives could be provided to encourage multi-state partnerships that can stimulate the growth of natural clusters. In our region, the EDA funded the planning effort for the Mid Atlantic Nanotechnology Alliance, one such multi-state partnership, and efforts

are underway to create *Power Valley*, bringing together the region's substantial energy assets.

The Ben Franklin Technology Partnership was launched in similar fashion… with a state Challenge Grant to the regions across Pennsylvania, to organize and compete for the Ben Franklin designation and to match the Commonwealth's investment.

Thank you, again, Mr. Chairman, for holding this important hearing and for the opportunity to share Ben Franklin Technology Partners' experience in stimulating innovation, enterprise formation and job creation. My colleagues and I stand ready to assist the Committee and the Administration in every way possible to advance these important goals.

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