



Towards a Self-Sustaining Venture Capital  
Continuum in Northeast Ohio

**A Report by the  
NorTech Early Stage Capital Task Force**

**September 2005**

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# **Towards a Self-Sustaining Venture Capital Continuum in**

## **Northeast Ohio**

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### **Executive Summary**

Across the United States, venture capital funded companies were directly responsible for more than 10 million jobs and \$1.8 trillion in sales in 2003. This corresponds to 9.4% of total U.S. private sector employment and 9.6% of total company sales. Over the period of 2000 – 2003 however, Ohio was the only state in the top 15 states (as measured by employment in venture backed companies) which experienced a decrease in employment in those venture backed firms.<sup>1</sup> This decrease can be directly attributed to an inadequate supply of early stage capital.

As Northeast Ohio's regional economy transitions from a traditional manufacturing-focused and "incremental" innovation economy to a more diversified economy driven by "disruptive" innovation across a wide range of industries (from bioscience, electronics and sensors, information technologies, nano-technologies, polymers/advanced materials, energy, power and propulsion and consumer product innovations), the role venture capital plays in fueling job growth and wealth creation—especially at the earliest stages of commercialization and new business creation—is critical to achieving the region's job growth and economic development goals. Attempting to meet our commercialization and entrepreneurship goals without an adequate amount of capital at each stage of company formation and development would be the economic development equivalent of trying to drive across the country on just one tank of gas.

This report provides a primer on the different stages of investment activity that need to occur in order to meet the requirements of our region's entrepreneurs through 2010. If our region is successful in securing the capital identified in this report, NorTech believes that we will have the ability to begin to dramatically change the landscape of our economy and launch a process that will, over the next twenty years, significantly change the direction of our regional economy.

NorTech recognized the importance of entrepreneurship in the late nineties and has focused on how the region, as a single economic engine, could develop the significant resources that are

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<sup>1</sup> Venture Impact 2004 – Venture Capital Benefits to the U.S. Economy. Global Insight Study July 2004.

needed to enable entrepreneurs to more effectively and efficiently begin to commercialize their innovations.

More recently, NorTech has defined a regional technology strategy for Northeast Ohio that is increasingly being recognized on a national basis. The strategy builds upon the web of technology based industry verticals outlined above and is supported by cross-cutting initiatives that underpin growth in the verticals. To NorTech's regional technology strategy, one of the most critical components of both entrepreneurship and innovation is the amount of capital that is available for commercialization of new products and services across the various stages of business development. Our region today has many entities in place that can assist and accelerate early-stage ideas and companies. However, expanded capital formation, at a sufficient scale across the stages of growth, is now the most significant challenge that faces the Northeast Ohio region.

NorTech's analysis indicates that we need to leverage the economic and financial interests of all the stakeholders in Northeast Ohio's future to raise at least an additional \$50 million in "grant-type" pre-seed and seed stage capital and \$250 million in "investment-type" seed and early stage capital to meet the current funding needs of entrepreneurs in our region. NorTech believes that securing this capital will enable the creation of new high-paying jobs and provide an overall economic impact of multiples of the amounts invested by 2010 and thereafter--thereby launching our regional economy onto a new trajectory of economic wealth creation, increased jobs and overall prosperity. Longer term, with the successful commitment and investment of these capital amounts, the region will enable the development of a Self-Sustaining Venture Capital Continuum which should reverse recent slow growth trends and help fuel longer term rates of entrepreneurially based regional growth that parallel the rapid growth regions of the country.

## **Introduction**

In 2002, NorTech (the Northeast Ohio Technology Coalition) convened an Early Stage Capital Task Force (Task Force) comprised of experienced and respected venture capital professionals active in Northeast Ohio. With a mandate to accelerate economic growth in Northeast Ohio through the promotion of technology-focused development, innovation and commercialization, NorTech's Task Force addressed the following specific goals:

1. Identify and define the primary stages of capital required to drive the development of technology-based businesses, and quantify the gaps in the availability of capital in Northeast Ohio, especially during the earlier stages of technology commercialization;
2. Increase the quantity and quality of Northeast Ohio's (a) pre-seed, seed and early stage deal flow, (b) capital available to fund the deal flow, and (c) venture capital professionals targeting and investing in the deal flow; and
3. Encourage state and local government entities, foundations, endowments, corporations, pension funds, philanthropists, individual investors and other sources of capital to expand their involvement as providers of pre-seed, seed, and early stage risk capital through both increased grant-making commitments and expanded investment asset allocation to these asset classes.

This report communicates the findings of the Task Force and highlights the critical next steps in capitalizing on the "window of opportunity" generated by recent Northeast Ohio successes.

## **Summary of Conclusions**

On the basis of a survey of seed and early stage venture capitalists, market experts, and the application of the Early Stage Capital Continuum (see "THE EARLY STAGE CAPITAL CONTINUUM – DEVELOPMENT AND FUNCTION" below), the Task Force reached the following conclusions:

1. Market demand for capital from "venturable" young companies in Northeast Ohio is robust and growing, with projected demand over the next four to five years of approximately \$50 million at the Pre-Seed and Seed stages and \$250 million at the Early Stage of investment opportunities (as these stages are defined below) for an aggregate capital demand of \$300 million;

2. Given comparable historical data that indicates a 9:1 leverage on Pre-Seed and Seed stage investments, and almost 4:1 leverage on Early Stage investments, the region's need for \$300 million of Pre-Seed, Seed, and Early Stage capital over the next four to five years, if left unfunded, could translate into billions of dollars of lost shareholder value and growth potential for Northeast Ohio;
3. Because the successive stages of the Continuum are so interdependent, Northeast Ohio must address the capital availability shortfalls in each of the Pre-Seed, Seed, and Early Stage phases in order to optimize the pace of new company formation and maximize economic development impact; and
4. To capture current opportunities and accelerate the growth of Northeast Ohio as a center of successful technology-based companies, Ohio-based institutions (including, but not limited to state and local government, foundations, endowments, pension funds, corporate investors, and high net worth individuals) must expand their commitment in Northeast Ohio to:
  - a. Provide \$50 million of grants to organizations targeting opportunities in the Pre-Seed/Seed Stage of development, and
  - b. Allocate \$250 million of risk investment capital to venture capital firms investing in opportunities in the Seed and Early Stages of development.

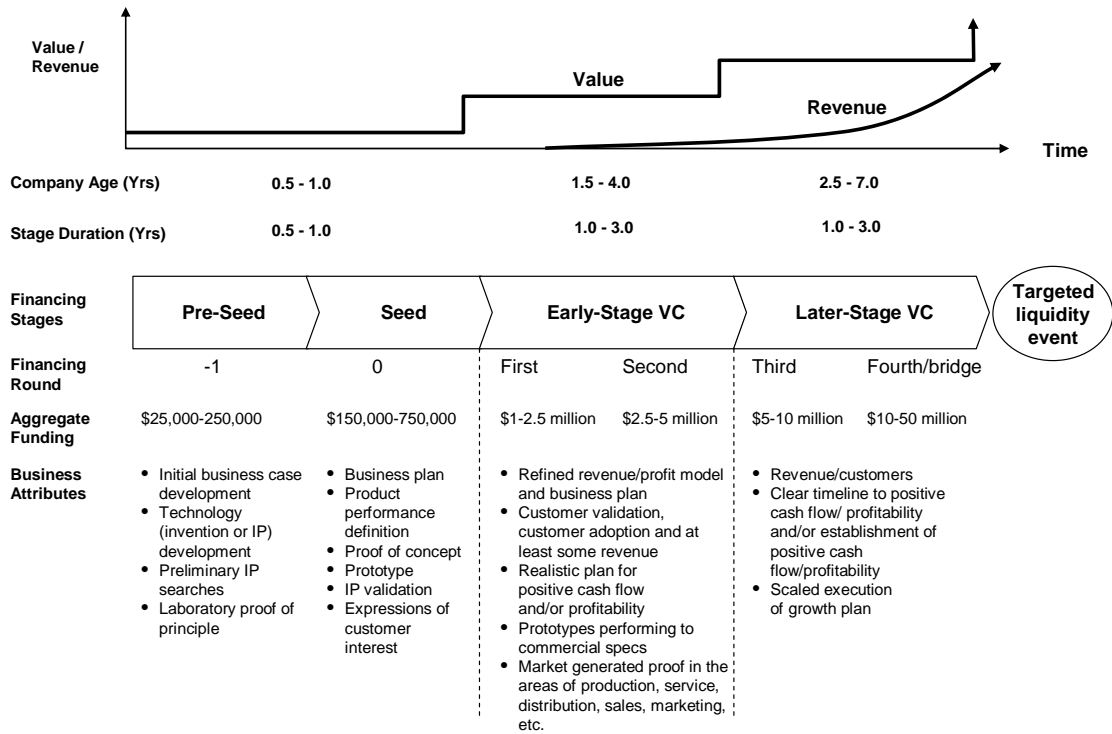
## **The Early Stage Capital Continuum**

### **Business Activities and Size of Financings**

The Task Force developed the Venture Capital Continuum (the "Continuum"--shown below as FIGURE 1) to identify and define the business attributes and funding needs of new ventures as they mature from concepts to growth companies. Due to ambiguity around the use of terms such as Pre-Seed, Seed, Early Stage Venture Capital, and Later Stage Venture Capital, the Continuum also sought to clarify and standardize the use of these terms in Northeast Ohio by linking them to types of entrepreneurial activity and related capital sources. The Continuum also identifies and lists the typical sources of funding for opportunities within each of the stages of the Continuum.

**FIGURE 1**

**THE NEO VENTURE CAPITAL CONTINUUM – VALUE-CREATION STAGES**



By way of illustration, in the Pre-Stage stage, investments typically range from \$25,000 to \$250,000, generally for the purpose of business idea/concept development or technology/IP development. Progressing to the Seed stage, average investments increase, ranging from \$150,000 to \$750,000, with funding used for business plan development and further market or feasibility analysis. The primary sources of capital at these stages are governmental entities or foundations (which may provide either grants or direct investments), “technology validation funds,” “angel investors” and “friends and family.” Investments at this stage carry the highest risk; as a result, institutional investors tend to avoid them. Yet these investments are critical to the development of robust deal flow and strong company formation.

During these stages, the business typically develops a “proof of concept”, a prototype, or even an initial version of a product. Expressions of customer interest may also occur. By the end of these stages, business plans are usually reasonably well developed as a vehicle to present the business opportunity to sources of Early Stage Venture capital. Companies typically take as little as 6 months to a year to move through the Pre-seed and Seed stages, although frequently

companies stay at this stage for several years if they do not have access to broader capital sources.

The Early Stage (in the center, above) is broken into First and Second rounds. These rounds approximate the so-called “A” and “B” rounds as they are referred to in the venture capital world.

The Early Stage is where actual “for profit” or “institutional” capital is generally first provided, usually by venture firms or, to a lesser degree, significant angel investors. Investments at this stage generally range from as little as \$1.0 - 2.5 million for a smaller First or “A” round to as much as \$2.5 - 5.0 million for a Second or “B” round. By this point in time, investors expect the companies to have a refined business plan and operating model and a well developed product or service-related opportunity, usually accompanied by at least early evidence of market acceptance and adoption. In the later part of the Early Stage, more significant revenue and customer traction generally validates the underlying precept of the business. As shown in the upper part of FIGURE 1, companies may get to this stage within as little as a year from inception, but 2-3 years is more typical.

Companies progress to the Later Stage (on the right side of FIGURE 1) as they succeed in developing their business model and customer base to generate meaningful revenues and at least the clear potential for positive cash flow and pre-tax income. In this stage, investors provide the capital that permits the business to “scale” an underlying business model which already has been validated by market participants. Here capital amounts tend to grow significantly with third rounds in the area of \$5-10 million and fourth rounds of \$10-50 million.

Funding Amounts shown in FIGURE 1 are generally reflective of Northeast Ohio market transactions. By contrast, on either coast and in “more developed” entrepreneurial regions, the size of rounds relative to each stage often are significantly larger. In 2004, according to PriceWaterhouseCoopers, the average size of a venture capital financing round in Silicon Valley was \$8.7 million. The national average round was \$7.3 million. By contrast, in the eight state Midwest regions, the typical round averaged only \$4.7 million.

In more capital-intensive industries, such as drug discovery, medical devices or certain technology applications, representative investment amounts in each stage may be significantly larger. The average size nationally of a Biotechnology venture capital round in 2004 was \$12.4 million, compared to \$8.5 million for Computers/Peripherals, \$6.9 million for Medical Devices, \$5.8 million for Software, leading to the overall average investment figure of \$7.3 million. Industrial/Energy transactions, which are perhaps more typical of the Midwestern transactions,

averaged \$5.2 million. As the market for early stage venture activity in Northeast Ohio becomes more robust and our industry verticals develop further, it is reasonable to assume that average deal sizes will more closely match national norms.

Finally, in moving from left to right across FIGURE 1, from Pre-seed to Early Stage to Later Stage venture capital, capital “travels farther.” This pattern highlights the fact that seed and early stage venture capital is a very much a localized and regionalized business, even in the well known national centers of activity. The reason for this is that in the Pre-seed, Seed and Early Stages, investors need to stay close to the young companies and work actively with them. This is generally true not only in Northeast Ohio but also in active venture capital centers around the country, including Silicon Valley, Boston and others. Thus, during the Pre-seed and Seed stages, sources of capital tend to invest predominantly in local opportunities. During the Early Stage, investors tend to invest in opportunities both locally and throughout a region.

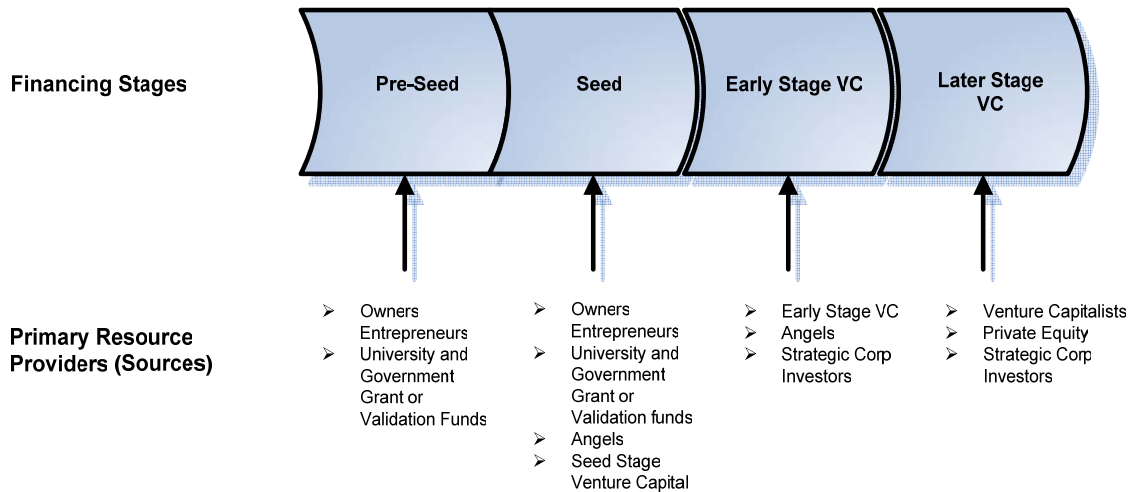
By contrast, in the Later Stage, capital tends to flow on a national and even international basis, in large part because management teams at this point in a company’s growth cycle are sufficiently sophisticated and self-activated that venture capitalists generally do not need to be as involved on a day-to-day basis. The national venture capitalists are also more willing to “partner” with a local firm that knows the market and closely monitors the company.

**Therefore, what is critical for Northeast Ohio is to generate an increased number and quality of Seed and Early Stage transactions under the aegis of professionally managed firms that initially will be largely locally and regionally funded but that are then capable of attracting capital from larger national firms for later rounds of investment. Significant shortfalls in any one of these three things—transactions, professional management and adequate capital—will constrain and limit the growth of our technology economy and cause locally generated business plans to relocate elsewhere. Moreover, beyond simply capturing more successful new company formation, national data regarding rates of return over the longer term from venture investments also suggest that early stage venture investing, on a national basis, over time outperforms later stage venture investments and the public stock market indices. See Appendix A for a summary of this data.**

## Capital Sources for Various Continuum Stages

The Continuum also helps to describe the various types of capital and funding sources that participate at each stage of activity:

**FIGURE 2**



At the Pre-Seed stage, examples of Northeast Ohio validation-type funding sources are JumpStart (formed by NorTech), CCF Innovations (formed by the Cleveland Clinic Foundation) and Case Technology Ventures (formed by Case Western Reserve University). Each of these organizations raises its available capital primarily from foundation or government grants but generally deploys it on the basis of an un-priced convertible security whose valuation will be set by later stage investors. In addition, a select group of owner-entrepreneurs and individual or angel investors are active at this stage.

At the Seed stage, some of the validation funds continue to invest. However, at this stage, the list of Northeast Ohio funding sources expands to include a relatively small number of Seed stage venture capital funds, such as Early Stage Partners, Ohio Innovation Fund and Glengary, each of which also may invest in the Early Stage area with a larger portion of their overall investment resources. In communities with substantial volumes of successful technology commercialization that have resulted in significant wealth generation from companies sales and IPO's, angels can play a major role as a source of funds and expertise in the Seed stage, either investing alone or in concert with others. At this stage, investments may be either un-priced securities or transactions with negotiated valuations and terms.

In the Early Stage, early stage venture capital funds begin to play a dominant role as a source of funds and business guidance. In Northeast Ohio, Early Stage Partners, Reservoir Capital

Partners, and Draper Triangle Ventures are examples of funds with a regional presence, if not a primary focus on Northeast Ohio. These firms generally raise their investment capital from limited partners that are providing “return-oriented” investment rather than grant-based capital. In other words, the primary mission of these groups is to generate a return on their investment, as opposed to the broader community or economic development missions of governmental entities and validation funds. Investors can include financial institutions, foundations, endowments, pension funds and other institutional or individual investors.

The small size of the investments at the Pre-Seed and Seed stages and the hands-on nature of the interaction required between the investor and the recipient translate into a highly localized market for Pre-Seed and Seed stage capital. For similar reasons, the market for capital generally remains local or regional as well until the later part of the Early Stage. As a result, a region such as Northeast Ohio that seeks to generate a large number of investable opportunities at the Pre-Seed, Seed, and Early Stage must seek to increase the amount of locally and regionally supplied capital. In the absence of adequate local and regional capital, many entrepreneurial investment opportunities that are capable of becoming larger, profitable businesses will fail to get funded—or will emerge instead in regions willing to commit adequate amounts of capital to this critical stage of company formation.

Indeed, in communities known as centers for later stage company growth and innovation—places such as Boston, Austin, Silicon Valley, etc.—the amount of money and resources dedicated to Early Stage investing may be a multiple of the \$300 million demand identified in this report. Thus, the more money devoted to productive Pre-Seed, Seed, and Early Stage investing, the greater the growth in Later Stage local companies employing large numbers of workers.

The figures used in this report reflect validated numbers based on existing levels of deal flow as reported by leading regional firms. Appendix B provides a summary of the aggregate dollar volume and number of transactions for select regions of the country for the years 1996-2004. It highlights the fact that through this period, the eight state Midwest regions in the aggregate consistently averaged about 5-7% of the national total, with Ohio averaging only about 1-2% of the national totals.

The work of Brian Arthur and others on increasing returns and pathway dependence seems to support the notion that, should the Northeast Ohio community rise to the challenge of adequately funding existing and prospective levels of “investment quality” deal flow, over time, Northeast Ohio will begin to witness company formation and growth rates similar to those in Boston, Austin and elsewhere--provided that the amount of capital devoted to the Early Stage phase also

increases sufficiently to support these new companies. The gap however, remains significant. In 2004, venture capital investments in the entire eight state Midwest region amounted to only \$683 million, compared with \$7.4 billion in Silicon Valley, \$3.0 billion in New England, \$1.4 billion in the NY Metro area and \$1.3 billion in the Southeast.

NorTech and its Early Stage Capital Task Force (and predecessor activities at Cleveland Tomorrow) have played a significant role in developing both the Northeast Ohio venture capital landscape and many of these organizations individually. It now seeks to (a) heighten the community's awareness of the activities of these organizations and (b) expand the community's resource commitment to funding these organizations through both increased "grant-type" commitments to organizations operating in the Pre-Seed and Seed stages and larger "investment-type" commitments to organizations operating in the later Seed and Early Stage areas. Accordingly, it is useful to highlight a number of the regional organizational accomplishments that are accelerating the pace of technology-based entrepreneurial company formation in Northeast Ohio.

### **Pre-Seed and Seed Stage Accomplishments**

Representative examples of significant accomplishments at the Pre-Seed and Seed stages include:

1. **Forming JumpStart.** JumpStart is a venture development non-profit organization that identifies, accelerates and invests in early stage companies and high-potential companies that have solid prospects for significant growth and are likely to qualify for continued Series A Early Stage funding. Beyond investing, the JumpStart team provides a continuum of business development services to its client companies to help ensure their success. From formation in July 2004 through July 2005, JumpStart has reviewed over 375 business plans across a wide range of industries. JumpStart's initial 7 investments, totaling \$1.9 million, have already helped to leverage \$2.5 million of additional and follow-on funding. In addition to the jobs these companies create, they also stimulate the region's ability to attract additional capital from outside the region. JumpStart has raised \$7.5 million for operations and investments from the State of Ohio, the Federal government, foundations, corporations and private grants. Furthermore, the services provided by organizations like JumpStart (and similar organizations such as BioEnterprise) improve the risk/reward ratio and increase the number of "investable" companies for the early and later stage venture capital investors.

2. **Forming CCF Innovations.** The Cleveland Clinic Foundation formed Cleveland Clinic Foundation Innovations in 2000 (“CCF Innovations”) to commercialize, license, spinout, and finance technologies developed at The Cleveland Clinic. CCF Innovations has received two Third Frontier grants in the aggregate amount of \$2.1 million (matched by the Cleveland Clinic Foundation) to support technology commercialization, licensing, and spinout activities and is a key element of another \$50+million of WCI/BRTT grants. To date, CCF Innovations has spun out 13 companies in the last 3 years. Those companies have received \$41.2 million in equity investments. CCF Innovations has also received more than \$7 million in philanthropic support – the first time a technology transfer office in the United States has been endowed.
  
3. **Forming Case Technology Ventures.** Case Western Reserve University formed Case Technology Ventures in late 2002 to invest in pre-seed stage technologies developed at the University. With \$4 million from the University and approximately \$1 million from the State of Ohio’s Third Frontier Program, Case Technology Ventures established the pre-seed fund to invest between \$50,000 and \$250,000 per opportunity. To date, Case Technology Ventures has reviewed over 30 opportunities and invested \$750,000 in 3 of those opportunities. Current investments have attracted \$1.1 million in additional and follow-on funding.

Collectively, JumpStart, Case Technology Ventures, and CCF Innovations are currently generating more quality Pre-Seed and Seed stage deal flow than they can support with existing funding, suggesting the need for expanded regional community resource commitments to these Pre-seed and Seed stage activities. The professional support activities provided by these organizations is also helping to accelerate the pace and quality of Pre-seed and Seed transactions that will eventually become “venturable” Early Stage investments. As these activities continue, a greater volume of angel and owner-entrepreneur type investment activities will also be generated in Northeast Ohio. Smaller, “for-profit” funds, such as Glengary, will continue to form and add professionalized financial depth to the market.

### **Early Stage Accomplishments**

The activity of groups such as JumpStart, Case Technology Ventures, CCF Innovations, and others has laid a strong foundation for Northeast Ohio efforts to attract Early Stage Venture Capital. With the help of this deal flow and the efforts of the Task Force, NorTech, and associated organizations, Northeast Ohio made similar progress in addressing the following stated goals relating to regional development of Early Stage venture capital:

1. Encourage broader investment allocations to early stage venture capital by foundations, endowments, pension funds, and other sources of institutional capital--in order to bring the venture capital asset allocation percentages of such institutions closer to levels that are more typical in the fast growth regions of the country;
2. Attract new venture capital firms to Northeast Ohio—so that the region enjoys a higher level of “imported” venture capital to supplement the higher local and regional venture allocations noted above;
3. Encourage regional deal partnering—so that collaboration between Northeast Ohio and neighboring areas maximizes the opportunities on a broader regional basis.

Representative examples of specific accomplishments include:

1. **Establishment of the Ohio Innovation Fund.** Founded in 1997 by Cleveland Tomorrow’s Technology Leadership Council (now NorTech), the Ohio Innovation Fund hired Tim Biro and attracted \$12.5 million of capital from corporations, pension funds, and individuals. Ohio Innovation Fund invested in 9 Ohio companies, 7 of which are located in Northeast Ohio. While continuing to manage Ohio Innovation Fund, Mr. Biro also joined Reservoir Venture Partners, an early stage venture capital firm headquartered in Columbus that has invested in ten companies, two of which are in Northeast Ohio. Mr. Biro is responsible for helping Reservoir identify promising investments in Northeast Ohio.
2. **Formation of Early Stage Partners.** Founded in 2002 by Jamie Ireland, Jim Petras, and Jonathan Murray, Early Stage Partners raised \$44 million, making it the largest Ohio-based Early Stage fund. Foundations and endowments, corporations and financial institutions and State of Ohio entities contributed almost 90% of Early Stage Partners’ capital. Through August 31, 2005, Early Stage Partners reviewed 717 opportunities and invested \$25.6 million in 17 of those opportunities. The technology and life sciences sectors generated over 85% of Early Stage Partners’ deal flow, with over 80% of the opportunities at the Pre-Seed, Seed, and Early Stage of development. Of its 17 portfolio companies, 14 are located in Ohio and 12 in Northeast Ohio. Six are run or were founded by “diverse” entrepreneurs (non-U.S. origin, female, or minority). These companies employ over 250 Ohio-based employees with an average wage in excess of \$50,000. Early Stage Partners’ \$25.6 million of investments helped leverage over \$96 million of additional and follow-on investments, a ratio of approximately 4 to 1. Similar to

those institutions focused at the pre-seed stage of investment, Early Stage Partners' current level of deal flow generates more quality investment opportunities than it can address with currently available resources. In addition to investments in current portfolio companies, Early Stage Partners has reserved over \$10 million for its own follow-on investment in such companies with the result that it could be in a position to begin raise a larger second fund over the next year. Notably, a number of ESP's portfolio companies are starting to see investment interest from national and later stage venture capital firms, confirming the importance of building a significant local investment presence in the Early Stage area.

3. **Attraction of Draper Triangle Ventures to Northeast Ohio.** In 2004, Draper Triangle Ventures, the Pittsburg affiliate of Draper Fisher Jurvetson, raised a second fund, with a first closing of \$40 million and a target of \$70 million, some of which was raised from Ohio-based investors. Seeing a growing opportunity in Northeast Ohio, Draper Triangle Ventures also recently opened a local Cleveland office with the stated intent of generating a substantial portion of its deal flow and investments from Northeast Ohio. With the new fund, Draper Triangle Ventures' first three transactions closed with Northeast Ohio companies were co-led with Early Stage Partners, providing objective evidence of the excess of the growing Northeast Ohio opportunity to productively deploy additional Early Stage capital and an increased level of regional "partnering" of investment-grade Early Stage transactions.

### **Other Accomplishments - The Ohio Venture Capital Fund Program**

In addition to the accomplishments described above, NorTech and its Task Force played a decisive role in shaping and developing legislative support for Senate Bill 180, which will stimulate increased Ohio-based early stage venture capital through the formation and operation of the Ohio Venture Capital Authority. Senate Bill 180 passed the Ohio Legislature in late 2002 and was signed by Governor Taft in January 2003.

Since that time, NorTech and other Northeast Ohio institutions have worked with the Ohio Department of Development to ensure program implementation through the formation of the Ohio Venture Capital Authority and its Ohio Venture Capital Fund Program. The Program seeks to stimulate the commitment of over \$200 million of new venture capital availability in Ohio by utilizing contingently available Ohio State income tax credits as an indirect form of guarantee to permit the Ohio Venture Capital Fund Program and its "fund of funds" Program Administrator, Buckeye Venture Partners, to borrow up to \$100 million in investor-provided debt capital that will "leverage" at least another \$100 million of matching equity capital from the private sector to such

funds. The aggregate of this Ohio Venture Capital Authority capital will be invested by the Program Administrator in individual venture capital funds, including minority and female run firms that are focused on seed and early stage investing in Ohio-based companies. Assuming that the Program is successful in borrowing at least \$100 million, it is reasonable to expect that over time at least \$25-30 million of such funds will be invested in Northeast Ohio. See Appendix C for additional detail on the structure and functioning of the Ohio Venture Capital Authority.

Together, these accomplishments highlight Northeast Ohio's substantial progress in attracting Early Stage capital to the area. They represent tangible evidence of the need and opportunity to productively deploy additional Pre-Seed, Seed, and Early Stage capital to accelerate technology-based economic development. At the same time, however, these accomplishments fall well short of assuring the availability of the estimated \$300 million of demand for Pre-Seed, Seed, and Early Stage capital that Northeast Ohio opportunities will require during the next 4-5 years.

## **Economic Development Impact of Venture Capital**

The Venture Impact 2004 Study<sup>2</sup> identified several significant areas of impact (benefits) to the U.S. Economy derived from venture capital activity. In broad terms, venture capital supports employment across the country by creating jobs that enjoy a wage growth that is faster than the national average.

Venture capital funded companies were directly responsible for more than 10 million jobs and \$1.8 trillion in sales in 2003. This corresponds to 9.4% of total U.S. private sector employment and 9.6% of total company sales. This is notable given that venture investment was less than 2% of total equity investment for most of the past 34 years.

Between 2000 and 2003, venture capital backed firms increased their employment base by 6.5% while overall total private sector employment dropped by 2.3% during the same time period. Of the top 15 states (as measured by jobs from venture backed companies) only Ohio (ranked 14<sup>th</sup>) saw a decline in employment; compared to growth of 25% and 20% in the states of Washington and Georgia respectively. (See FIGURE 3)

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<sup>2</sup> Venture Impact 2004 – Venture Capital Benefits to the U.S. Economy. Global Insight Study July 2004.

**FIGURE 3**

**EMPLOYMENT AT VENTURE CAPITAL BACKED  
FIRMS HEADQUARTERED IN THE STATE  
2000 - 2003**

Rank	State	2000 Employment at VC Backed Firms	2003 Employment at VC Backed Firms	Percent Change
1	California	2,341,000	2,470,900	6%
2	Texas	861,400	899,200	4%
3	Massachusetts	668,600	712,300	7%
4	Pennsylvania	534,100	604,000	13%
5	Georgia	459,900	551,400	20%
6	Tennessee	497,200	543,000	9%
7	New York	451,400	470,500	4%
8	Washington	319,400	399,900	25%
9	Virginia	310,200	333,200	7%
10	New Jersey	305,900	310,900	2%
11	Florida	305,100	309,700	2%
12	Minnesota	275,700	288,000	4%
13	Illinois	231,800	235,900	2%
14	Ohio	199,700	195,200	-2%
15	Connecticut	183,700	189,700	3%

Academic and government sponsored research facilities are significant contributors of intellectual property to venture backed companies. R&D is the staple of the venture capital industry and small firms are playing a larger role in this activity. Under NorTech's leadership, a regional technology strategy has been defined around various technology clusters (Biosciences, IT, Electronics, Nano-technology, Polymers Advanced Materials and Energy, Power and Propulsion) that are particularly aligned with the region's industrial base, academic institutions and government research facilities, such as NASA. If, however, these coordinated efforts are not met with sufficient funding resources, instead of growing successful entrepreneurial companies, we may become proficient at exporting innovation from the region; presumably in search of capital.

## **Northeast Ohio – The Opportunity**

Northeast Ohio has made great strides in establishing many of the critical components of a self-sustaining engine to drive technology-based economic development. In addition to the accomplishments summarized in the preceding section, Northeast Ohio has an extensive network of business assistance resources, many of which are focused on increasing opportunities for minorities and women to create run entrepreneurial companies. Northeast Ohio is also a major center of research and technology development with institutions such as Case Western Reserve University, The Cleveland Clinic, Cleveland State, University of Akron, and Kent State University that attract hundreds of millions of dollars annually from the federal government for use in research. These organizations provide a substantial flow of inventions and patents that account in part for the growing deal flow. This flow of inventions, patents, and entrepreneurs, when combined with Northeast Ohio corporate R&D and related talent, fuels the opportunity at the Pre-Seed, Seed and Early Stages of development.

Early Stage deals are critical to the successful growth and development of a robust economy that not only generates high income jobs but creates shareholder value and wealth creation as well. While it is important to recognize that the gestation period for companies is longer today than it might have been back in the “bubble” days, and that companies formed in the Midwest may take longer to reach maturity than those in areas like Boston or the Silicon Valley, according the Council on Competitiveness, “small firms’ patents are at least twice as likely to be found among the top one percent of high-impact patents...[in addition,] small firms are more effective in producing high-value innovation.” This work confirms the general observation that much of the innovation in today’s economy tends to occur in smaller firms with larger companies being better positioned to “scale” the manufacture, marketing and distribution of products that smaller firms innovate.

### **The Opportunity – Pre-Seed and Seed Stages**

The increasing flow of quality Pre-Seed and Seed stage opportunities is running into a serious bottleneck: insufficient locally and regionally based Pre-Seed and Seed capital. As a result, many quality investment opportunities remain unfunded or funded at lower levels than required to accelerate growth, leading to the appearance of a region that is lacking in innovative new ideas, when quite the opposite is actually the case. Good ideas are dying locally (or in some cases moving elsewhere) due to a lack of adequate local funding resources. This presents both a problem—and an opportunity. A brief look at an organization named Innovation Works, located in Pittsburgh; helps demonstrate the magnitude of the opportunity--if we act to fill our funding gap.

In 1999, the State of Pennsylvania participated in the creation of Innovation Works. With a model similar to JumpStart, Innovation Works provides business assistance and capital to Seed stage technology opportunities. Although Innovation Works' timing could not have been much worse given the collapse of the technology markets in 2000, Innovation Works' results have, nevertheless, been impressive.

Over 5 years ending in December of 2004, Innovation Works received funding totaling \$35 million from the Commonwealth of Pennsylvania. \$14 million of these monies helped cover the cost of operations for the Innovation Works organization, the balance of \$21 million was invested in 60 companies. Ninety-seven percent of the companies were pre-revenue, prototype-stage companies, with an average of 2-3 employees at the time of investment. Innovation Works' investments resulted in the creation of 540 new jobs and the retention of 260 jobs, with an average salary of \$59,000. Innovation Works' portfolio companies attracted \$185 million in additional and follow-on investments from private sources of capital. To date, twelve of the sixty companies have attracted venture capital financing while 18 received additional private capital from angel investors. The total economic impact of Innovation Works' venture development activity during this five year period based upon a total investment from the state of \$35 million equaled \$381 million. While Innovation Works' results are not a guarantee of comparable results by JumpStart or other similar organizations in Northeast Ohio, the accomplishments to date of organizations such as JumpStart, Case Technology Ventures, and CCF Innovations certainly represent strong evidence of comparable potential (see "**Accomplishments – Pre-Seed and Seed Stages**" above).

JumpStart's accomplishments and current levels of activity strengthen the Innovation Works analogy and provide additional tangible evidence of the Pre-Seed and Seed stage opportunities. Saddled with limited investment resources, JumpStart has currently identified 25 opportunities worthy of investment. With potential investments in the range of \$100,000 to \$250,000, JumpStart could productively deploy \$5 million immediately. Projecting current levels of activity, JumpStart anticipates the following potential results over the next 5 years:

1. Investing at least \$20 million in 60 companies;
2. Securing \$200 million in follow on funding to JumpStart investments;
3. Creating/supporting 800+ jobs; and
4. Providing 60,000 hours of business development assistance.

Unfortunately, JumpStart's current investment resources fall substantially short of its projected capacity to productively commit capital. To address this need, JumpStart is currently seeking

additional grant funding totaling \$30 million through 2010 to support its investment activities, its staff and operations.

### **The Opportunity – Early Stage**

Success at one stage therefore creates increased opportunity at the next successive stage. Pre-Seed and Seed stage successes are therefore driving increased Early Stage opportunities – and creating demand for capital that current Northeast Ohio sources cannot meet. **Increased funding commitments at the pre-Seed and Seed stages (whether from grants or investments) will not be effectively leveraged unless there occurs, in parallel, increased funding of the Early Stage phase, which by definition, will be predominantly provided by local and regional institutional type investors. Further, the attraction of larger amounts of national Later Stage venture capital will be less likely to occur unless the pipeline of Early Stage capital is filled on a regional basis to spur the accelerated growth of larger numbers of successful venture backed companies.**

The activities and accomplishments of groups such as Early Stage Partners, Ohio Innovation Fund, and Draper Triangle Ventures represent tangible evidence of the abundance of early stage opportunities in Northeast Ohio. By their own estimates, these groups do not possess sufficient resources to meet the current and anticipated Northeast Ohio demand for Early Stage capital. The \$12.5 million of capital raised by the Ohio Innovation Fund is fully committed. Early Stage Partners estimates that 75% of its \$44 million of capital will be invested or committed by the second half of 2005.

Early Stage Partners alone expects to see at least \$20-30 million per year of “investable” Early Stage deals, without taking into account the increased deal flow to be created by JumpStart and other similar organizations. Early Stage Partners and JumpStart believe that JumpStart’s investment activities will increase the estimated need for Early Stage capital by at least \$10 million per year.

So, while Draper Triangle Ventures and Senate Bill 180 (the Ohio Venture Capital Authority) both represent new sources of Early Stage capital, neither will be large enough to meet the demand anticipated by JumpStart and Early Stage Partners, let alone the other Northeast Ohio investment professionals focusing on the Early Stage marketplace. (Appendix D provides some general background information on investing in venture capital partnerships.)

## **Northeast Ohio – The Need**

At the Pre-Seed and Seed stages, JumpStart alone believes it could productively deploy \$20 million of capital over the next 5 years. At the Early Stage, Early Stage Partners alone believes it could be able to invest between \$80 million and \$120 million over the next 4-5 years, with the activities of JumpStart increasing this estimate by \$40 million. This is in spite of the fact that neither of these organizations sees all the “investable” Northeast Ohio opportunities.

Given the evidence of the growing opportunities at each of the Pre-Seed, Seed, and Early Stages of funding, how much capital does Northeast Ohio require to maintain current momentum and maximize the economic development potential of the current flow of opportunities?

In order to calculate total demand, the Early Stage Capital Task Force:

- Conducted surveys of entrepreneurs, validation funds, and venture capitalists;
- Collected data on deal flow, Northeast Ohio initial investments, and follow on investments using historical deal flow data provided by members of the Task Force that were compiled by McKinsey; and
- Reviewed other tangible evidence of unmet demand for capital.

Based on this data and analysis (described in greater detail in Agenda A), the Task Force reached the following conclusions:

- At the Pre-seed and Seed stages of the Continuum, Northeast Ohio could productively deploy an additional \$48 (rounded to \$50 million) over the next 4 years. Lesser amounts would likely result in quality investment opportunities failing to obtain necessary or optimal levels of capital or professional assistance.
- At the Early Stage of the Continuum, Northeast Ohio could productively deploy an additional \$255 (rounded to \$250 million) over the next 4 years, with lesser amounts likely resulting in the under funding, failure of quality opportunities, or the relocation of such opportunities to regions with more robust venture capital environments.

This analysis is consistent with the JumpStart and Early Stage Partners projections and the deal flow activities of other reporting groups. The specific results and activities of groups such as JumpStart, Case Technology Ventures, CCF Innovations, Ohio Innovation Fund, Early Stage Partners, and Draper Triangle Ventures simply add further tangible support to these conclusions.

If Northeast Ohio fails to provide sufficient capital to fully address the projected market demand, this could translate into an “opportunity loss” of up to \$450 million at the Pre-Seed and Seed stages, and up to \$1 billion at the Early Stage phase<sup>34</sup>. However, the opportunity loss measured simply in terms of additional and follow-on investment pales in comparison with a far greater opportunity loss that arises from the failure to transform many of these “lost” opportunities into successful Northeast Ohio businesses.

Just how big is this potential “lost” opportunity? Figure 3, below, summarizes the research conducted by the Task Force to determine the levels of demand for capital in Northeast Ohio at the Pre-Seed Stage, Seed Stage, Early Stage and Later Stage of the Continuum. The conclusions are based on demand data gathered from Northeast Ohio participants (investors, entrepreneurs, research institutions, intermediaries, and others).

**FIGURE 3 – Projected Market Demand**

**THE NEO VC CONTINUUM – PROJECTED MARKET DEMAND FOR “INVESTMENT-GRADE” PRE-SEED, SEED AND EARLY STAGE CO’S**

Financing Stages	Pre-Seed		Seed		Early-Stage VC		Later-Stage VC		Targeted Liquidity Event
	-1	0	First	Second	Third	Fourth/bridge			
Financing Round									
Aggregate Funding	\$25,000-250,000	\$150,000-750,000	\$1-\$2.5 million	\$2.5-5 million	\$5-10 million	\$10-50 million			
Average Funding Size	\$150,000	\$375,000	\$1.75 million	\$3.75 million	\$7.5 million	\$20+ million			
Targeted NEO Annual Transactions	30	20	15	10	8	5			
Implied Total Annual Funding (in millions)	\$4.5	\$7.50	\$26.25	\$37.5	\$60.0	\$100.0+			
Implied Size of Funding Base* (in millions)	\$18	\$30	\$105	\$150	\$240	\$400+			
	\$48 million		\$255 million		\$640+ million				

\* Assumes 4-year cycle of new fund raising for “committed fund”; however, pre-seed/seed capital could be funded on “pay-as-you-go” basis rather than “committed fund(s)”; early stage capital likely would be raised through “committed funds”; later stage capital may not need to “scale” to indicated levels due to likelihood that capital for these transactions will be attracted to NEO from regional and national sources

FIGURE 3 projects the “Average Funding Size” of transactions by stage of investment based

3

Measured in terms of the leverage of follow-on investment experienced by groups such as JumpStart (2:1) and Early Stage Partners (4:1)

upon the range of investment sizes shown previously. It then multiplies these amounts by the number of “Targeted Northeast Ohio Annual” transactions that local venture capital organizations believe they could fund on an annual basis over the next four years to arrive at an “Implied Total Annual Funding” requirement by each stage of investment for Northeast Ohio companies.

To simulate the impact of a typical venture capital cycle of a five year fund “commitment period” (in which capital is largely deployed over the initial four years with a new fund being raised during the final year of the commitment period), these amounts are then multiplied by four in the line labeled “Implied Size of Funding Base.”<sup>5</sup>

**This analysis suggests that Northeast Ohio could productively deploy around \$50 million of Pre-Seed and Seed capital and about \$250 million of Early Stage capital over the next 4-5 years based upon the rapidly improving outlook for technology based company formation in Northeast Ohio. While the \$300 million aggregate of these amounts is significantly higher than what has been available regionally over the past four to five years, it suggests clearly and dramatically the critical and growing importance of a broader community commitment of both “grant-based” and “investment-based” capital resources to expanding our entrepreneurial economy.**

**Notably, if the depth and robustness of the region’s entrepreneurial economy were to grow such that the Average Funding Size for venture transactions should be adjusted to levels comparable to even the national average venture capital levels, the aggregate capital demand would likely be at least 50% higher, or closer to \$500 million over the next 4-5 years, as opposed to the \$300 million suggested in this report.**

### ***Northeast Ohio – Next Steps***

Regional investors must look beyond the simple equation of investment returns and consider the bigger picture: What would it mean to Northeast Ohio to create five to ten technology-based IPOs every several years—versus the current rate of one or two every few years? Investors can look to Austin, Texas, Research Triangle Park in North Carolina, and the Route 128 corridor in Boston for evidence of the potential. For Northeast Ohio to create a more self-sustaining technology based economy, expanded amounts of Pre-Seed, Seed and early Stage Capital are needed to support the success of the NorTech regional technology strategy.

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<sup>5</sup> Note that the transaction numbers in FIGURE 3 are only intended to capture the types of deals that could potentially be “venturable,” rather than every possible seed or early stage business that might be started by an entrepreneur that would be unlikely ever to receive venture type funding.

As shown above, Northeast Ohio has the Pre-Seed, Seed, and Early Stage deal flow necessary to fuel the desired level and pace of economic development. However, the quality and pace of deal activity simply cannot be fully developed or optimized without broader resource commitment from the region.

To build on the current momentum and capture the identified opportunities, the Task Force recommends the following:

- **“Grant” type capital funding sources (including, but not limited to the State of Ohio, the Federal government, county and city governments, national and regional foundations, corporations, and high net worth individuals) must provide expanded resources targeted at around \$50 million between now and 2010 to organizations focused on Pre-Seed and Seed stage investing and business development. This \$50 million resource objective should target the following sectors and amounts:**

<u>Sector:</u>	<u>Amount:</u>
<b>State Government</b>	<b>\$15 - 20 million</b>
<b>Federal Government</b>	<b>\$10 - 15 million</b>
<b>Foundations</b>	<b>\$10 - 15 million</b>
<b>Corporations</b>	<b>\$10 - 15 million</b>
<b>Individuals</b>	<b><u>\$ 5 - 10 million</u></b>
<b>TOTAL</b>	<b>\$50 - 75 million</b>

These organizations, such as JumpStart, should be funded to provide quality Northeast Ohio opportunities with both the business assistance and capital they need to maximize Northeast Ohio opportunities. Without these grants, a large number of quality opportunities will fail to develop optimally for lack of regionally available capital. With proper funding, these organizations can contribute to the creation of a robust, technology-based economic development engine in Northeast Ohio. Assuming the Innovation Works precedent of 9 to 1 leverage for its Pre-Seed/Seed funding, capitalizing JumpStart with its target of \$20 million of grant-based capital to be invested in Pre-Seed and Seed stage investments over the next 5 years could help leverage close to \$200 million of Early and Later Stage capital. In addition, with the successful deployment of these funds, significant additional investment will be leveraged from angel groups that are more likely to form and commitment meaningful capital if they see growing numbers of professionally

managed and funded Pre-Seed and Seed opportunities in the local and regional marketplace.

- **“Investment” type capital funding sources (such as regional foundations, endowments, corporations--financial and non-financial, the Ohio retirement system pension funds and high net worth individuals) must expand their portfolio asset allocation activities to include regionally based Early Stage venture capital. While some of this capital will be invested by sources from outside Northeast Ohio (that in turn will be more likely to invest locally as the region’s local venture activity expands), this allocation of investment resources should target the following sectors of investors:**

<b>Sector:</b>	<b>Amount:</b>
<b>Non-Northeast Ohio Sources</b>	<b>\$70 - 80 million</b>
<b>Foundations</b>	<b>\$50 - 60 million</b>
<b>OVCA (NEO only)</b>	<b>\$25 - 30 million</b>
<b>Endowments</b>	<b>\$15 - 20 million</b>
<b>Banks and Insurance Cos.</b>	<b>\$25 - 30 million</b>
<b>Corporate Pension Funds</b>	<b>\$15 - 20 million</b>
<b>Individuals/Family Offices</b>	<b>\$25 - 30 million</b>
<b>Ohio Retirement Systems</b>	<b><u>\$25 - 30 million</u></b>
<b>TOTAL</b>	<b>\$250 – 350 million</b>

As noted earlier, one of the key challenges to the success of the growth of the Venture Capital Continuum in Northeast Ohio is the fact that local and regional financial and endowment institutions have historically been relatively more risk averse than their peers in the successful fast growth regions of the country where venture capital investment has been a significant part of the success of regional economic growth. Accordingly, the Task Force believes that the region’s investing institutions should target and allocate higher percentages of their assets under management to private equity investments, especially regional venture capital.

Specifically, as an example, the Task Force believes that Northeast Ohio foundations should consider targeting at least 2% of overall investment assets under management to Early Stage regional venture investment as a mission driven extension of their traditional grant-making activities. With approximately \$6 billion in assets, Northeast Ohio foundations in the aggregate (not all will invest) potentially could provide up to around \$120 million of the projected funding needs. The Task Force believes that other Northeast Ohio investing institutions, such as

endowments, banks and insurance companies, pension funds and family office/individuals should consider similarly expanded asset allocation to Early Stage regional venture investment in order to bridge the gap between currently available investment assets and projected potential investments.<sup>6</sup>

By providing additional capital to both existing managers (such as Early Stage Partners, Ohio Innovation Fund, Draper Triangle Ventures as they form new funds) and to smaller (such as Glengary) and newly formed fund managers (some formed with the assistance of the Ohio Venture Capital Authority) to meet the Northeast Ohio demand for Early Stage capital, the investors should seek to generate competitive rates of return and help to accelerate Northeast Ohio technology-based company formation—thereby stimulating far greater inflows of nationally based Later Stage venture and strategic investment into the region. Assuming the Early Stage Partners precedent of almost 4 to 1 leverage on Early Stage investments, funding of the forecasted \$250 million of Early Stage capital could leverage around \$1 billion of Later Stage Capital and even greater shareholder value growth.

Longer term, if the Ohio Venture Capital Authority experiences success in funding new and existing managers and if the Early Stage investment levels recommended above for various investor sectors also are successfully deployed by regional managers, the Ohio Retirement System Pension Funds might elect to target a higher percentage of their far larger assets (approaching \$150 billion) for regional venture investments around the State of Ohio with emerging managers that have demonstrated a successful investment track record. Even a 0.5% asset allocation to regional venture capital by the State pension funds could create State-wide availability of close to \$750 million over time, which could potentially create something on the order of \$250 million over time for Northeast Ohio. However, for such larger amounts of capital to be deployed, the market will need to experience further successful growth in Early Stage activity. However, if the objectives of this Report are fulfilled, the quality and quantity of “investable” Early Stage businesses should both grow and accelerate, thereby enabling the retirement systems, as fiduciaries for millions of Ohio employees, to make successful and prudent local and regional venture investments that further strengthen our regional economy.

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<sup>6</sup> With the improved deal flow that the region is experiencing and the existence of professional venture management firms that have strong technology expertise and entrepreneurial experience themselves, the Task Force believes that Northeast Ohio is now at the point where institutional ERISA and “fiduciary” type investors can prudently make meaningful asset allocation decisions to earmark funding for regional venture capital firms, rather than just national firms, at the levels suggested above. However, the decision to embrace this direction is one that may not come easily for many investors, and so a clear understanding of the rapidly improving investment climate of the current Northeast Ohio market is important to creating a climate where market and opinion leaders can help shape the views and actions of others.

Given the breadth and pace of recent accomplishments, the Task Force firmly believes that Northeast Ohio is poised for entrepreneurial growth and transformation. Recognizing such growth and transformation requires that Northeast Ohio step up to a more scaled funding strategy for its entrepreneurial economy. As proven in other high-growth regions throughout the country, even with relatively small, highly focused investment strategies, regions can affect a lasting, rapid and high impact transformation to an economy driven by technology-based innovation and new company formation. For NorTech's regional technology strategy to succeed at the highest possible levels, Northeast Ohio needs to challenge itself to allocate and invest the financial resources necessary to create a Self-Sustaining Venture Capital Continuum.

## APPENDIX A

# Private Equity and Public Market Compound Returns Through 12/31/04

<u>Fund Type</u>	<u>5 Yr</u>	<u>10 Yr</u>	<u>20 Yr</u>
Early Stage	(2)%	45%	20%
Balanced	0	18	13
Later Stage	(5)	15	14
All VC	(1)	26	16
All Buyout	3	8	13
S&P 500	(4)	10	12
NASDAQ	(12)%	11%	12%

Source: Thomson Venture Economics/National Venture Capital Association

On a national basis, venture capital returns and in particular, Early Stage venture capital returns, have outperformed public equity market rates of return over long periods of time, as suggested by the survey data set forth above from Thomson Venture Economics and the National Venture Capital Association. The “logic” of such long term performance has to do with the fact that investing in early stage companies should compound the investment returns generated by early investment in successful start-ups that over the longer term become successful companies. While there have been periods of time, such as the late 1990's, when Later Stage venture investments outperformed Early Stage ones due to the ability of companies to rapidly access the public markets, over time, venture investments in Early Stage companies have generated higher long term rates of return than either Later Stage venture investments, Buyout fund investments or the public market averages, as measured by the S&P500 or the NASDAQ index. While this data is illustrative, these measures of return are all based upon national data and it should not be assumed that either regional venture capital performance or the future performance of any individual funds will match such survey-based historical rates of return.

# APPENDIX B



## MoneyTree™ Survey Investments by Region 1995 - 2004

### Amount Invested

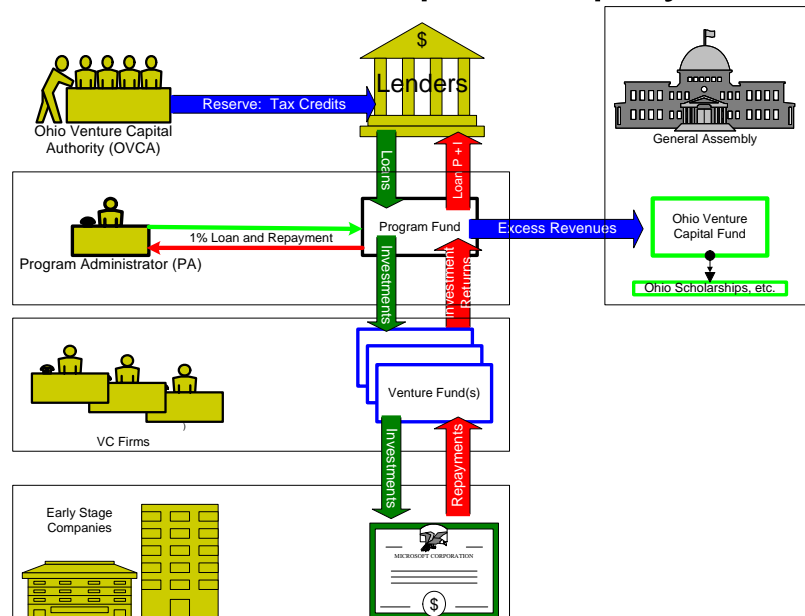
Region	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
	1995 Total	1996 Total	1997 Total	1998 Total	1999 Total	2000 Total	2001 Total	2002 Total	2003 Total	2004 Total	Qtr 1
AK/HI/PR	\$ 7,260,000	\$ 24,230,000	\$ 13,996,000	\$ 5,465,000	\$ 17,155,000	\$ 230,615,000	\$ 168,997,000	\$ 3,400,000	\$ 14,429,000	\$ 11,362,000	\$ 2.2
Colorado	\$ 289,747,300	\$ 281,808,700	\$ 374,883,000	\$ 823,101,300	\$ 1,901,655,300	\$ 4,329,880,100	\$ 1,319,494,500	\$ 562,678,100	\$ 625,767,800	\$ 438,203,100	\$ 163.7
DC/Metroplex	\$ 332,838,900	\$ 586,887,400	\$ 560,390,100	\$ 1,113,701,600	\$ 2,441,562,200	\$ 5,563,400,300	\$ 2,112,617,800	\$ 1,096,285,900	\$ 828,343,400	\$ 882,158,800	\$ 139.1
LA/Orange County	\$ 1,016,989,800	\$ 563,462,800	\$ 784,472,000	\$ 1,289,050,900	\$ 3,491,836,000	\$ 6,464,608,500	\$ 2,059,319,900	\$ 1,279,755,900	\$ 1,090,013,700	\$ 967,679,900	\$ 329.7
Midwest	\$ 440,160,900	\$ 659,113,900	\$ 824,619,600	\$ 1,547,573,300	\$ 2,545,523,800	\$ 5,621,232,800	\$ 1,986,843,400	\$ 909,360,600	\$ 803,530,700	\$ 683,473,900	\$ 180.7
NY Metro	\$ 494,768,100	\$ 751,853,500	\$ 1,261,664,100	\$ 1,644,485,500	\$ 4,667,033,100	\$ 10,567,995,000	\$ 3,655,666,000	\$ 1,437,953,400	\$ 1,482,597,800	\$ 1,446,578,800	\$ 275.5
New England	\$ 719,462,600	\$ 1,142,831,900	\$ 1,561,777,500	\$ 2,393,343,900	\$ 5,394,123,600	\$ 11,667,624,300	\$ 5,287,906,300	\$ 2,765,899,200	\$ 2,894,696,000	\$ 2,993,058,400	\$ 614.3
North Central	\$ 204,746,100	\$ 222,371,400	\$ 328,611,000	\$ 481,210,300	\$ 722,434,300	\$ 1,321,057,500	\$ 627,586,500	\$ 505,506,100	\$ 479,914,400	\$ 420,009,600	\$ 54.8
Northwest	\$ 380,803,300	\$ 503,846,100	\$ 554,688,400	\$ 831,302,500	\$ 2,359,296,600	\$ 3,555,368,500	\$ 1,363,481,500	\$ 714,239,700	\$ 550,251,000	\$ 1,035,699,500	\$ 165.7
Philadelphia Metro	\$ 224,801,600	\$ 345,591,800	\$ 516,770,300	\$ 631,886,500	\$ 1,588,972,100	\$ 2,801,164,000	\$ 1,143,514,400	\$ 500,543,000	\$ 571,717,000	\$ 552,442,000	\$ 136.1
Sacramento/N.Cal	\$ 36,965,800	\$ 28,377,000	\$ 18,874,900	\$ 85,594,200	\$ 102,633,400	\$ 331,204,300	\$ 242,334,000	\$ 101,059,900	\$ 84,676,600	\$ 47,943,900	\$ 32.0
San Diego	\$ 254,379,600	\$ 437,311,300	\$ 480,745,100	\$ 574,950,600	\$ 1,225,984,500	\$ 2,185,923,300	\$ 1,565,380,100	\$ 942,200,000	\$ 783,356,900	\$ 1,172,678,200	\$ 125.3
Silicon Valley	\$ 1,859,432,700	\$ 3,631,921,600	\$ 4,645,454,500	\$ 5,968,262,700	\$ 18,378,965,300	\$ 34,223,457,600	\$ 12,742,313,500	\$ 7,133,992,100	\$ 6,346,424,300	\$ 7,408,565,300	\$ 1,654.8
South Central	\$ 48,162,100	\$ 71,692,100	\$ 97,822,900	\$ 190,065,900	\$ 407,558,900	\$ 414,843,800	\$ 157,773,300	\$ 69,108,100	\$ 36,471,000	\$ 110,461,200	\$ 12.5
SouthWest	\$ 106,041,000	\$ 166,364,300	\$ 289,100,100	\$ 355,035,900	\$ 761,856,200	\$ 1,377,852,600	\$ 447,263,500	\$ 373,636,000	\$ 226,254,600	\$ 334,590,100	\$ 120.5
Southeast	\$ 965,589,200	\$ 1,066,268,800	\$ 1,422,624,700	\$ 1,620,225,200	\$ 4,625,388,100	\$ 7,597,355,700	\$ 2,896,969,500	\$ 1,776,635,100	\$ 1,105,421,900	\$ 1,349,056,700	\$ 260.9
Texas	\$ 433,554,200	\$ 479,990,500	\$ 824,522,700	\$ 1,123,246,900	\$ 2,733,906,100	\$ 5,995,922,500	\$ 2,834,367,700	\$ 1,262,697,900	\$ 1,162,266,000	\$ 1,030,100,400	\$ 345.7
Upstate NY	\$ 37,432,000	\$ 27,225,100	\$ 81,548,900	\$ 192,614,900	\$ 204,689,300	\$ 436,703,900	\$ 159,099,000	\$ 103,500,000	\$ 128,169,700	\$ 112,308,100	\$ 12.5
Other US	\$ 320,000	\$ 2,134,000	\$ 4,297,000	\$ 32,131,000	\$ 2,401,000	\$ 171,446,000	\$ 62,417,000	\$ -	\$ -	\$ 1,850,000	\$ 4
Grand Total	\$ 7,853,455,200	\$ 10,993,282,200	\$ 14,646,862,800	\$ 20,903,248,100	\$ 53,572,974,800	\$ 104,857,655,700	\$ 40,833,344,900	\$ 21,538,451,000	\$ 19,214,301,800	\$ 20,998,219,900	\$ 4,627.5

### Number of Deals

Region	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
	1995 Total	1996 Total	1997 Total	1998 Total	1999 Total	2000 Total	2001 Total	2002 Total	2003 Total	2004 Total	Qtr 1
AK/HI/PR	3	7	6	5	4	13	11	2	7	5	
Colorado	54	73	94	124	158	228	118	90	68	69	
DC/Metroplex	62	104	133	156	266	489	253	194	168	155	
LA/Orange County	92	122	156	211	335	497	246	146	142	146	
Midwest	122	162	205	221	295	474	259	221	161	145	
NY Metro	119	149	218	258	470	822	443	232	195	202	
New England	222	322	374	449	642	880	564	417	421	381	
North Central	69	70	108	102	97	138	120	75	74	67	
Northwest	76	104	130	130	259	325	177	135	103	147	
Philadelphia Metro	76	87	133	133	130	219	125	84	82	89	
Sacramento/N.Cal	11	14	7	15	16	31	25	10	14	8	
San Diego	66	99	96	112	140	226	152	108	114	123	
Silicon Valley	490	737	855	1,019	1,702	2,161	1,087	793	813	855	
South Central	15	19	28	29	48	28	28	22	8	24	
SouthWest	33	49	68	85	108	145	84	62	52	52	
Southeast	170	214	292	294	436	627	395	261	230	226	
Texas	84	118	155	176	284	456	316	162	160	151	
Upstate NY	10	10	20	28	29	34	29	23	22	32	
Other US	2	5	6	11	3	19	18	-	-	6	
Totals	1,776	2,465	3,084	3,558	5,401	7,832	4,450	3,037	2,834	2,883	

## APPENDIX C

# The Ohio Venture Capital Authority: How it Will Create \$200+ Million of Venture Capital Equity



The Ohio Legislature passed Senate Bill 180 in December 2003, which was executed by Governor Taft in January 2004, establishing the Ohio Venture Capital Authority. Senate Bill 180 also legislatively appropriated the contingent availability of Ohio State Income tax credits sufficient in amount to enable their use to indirectly guarantee borrowings of over \$100 million to match equity investments of at least a like amount of capital to be raised from private investors as a condition to obtaining matching funding from the Ohio Venture Capital Authority. Under the terms of Senate Bill 180, such funding is to be used to invest in individual funds around the State of Ohio that invest in Seed and Early Stage businesses that enhance and accelerate technology development and related new company formation.

In the broadest sense, the purpose of the Ohio Venture Capital Authority is to both provide both additional investment capital for professionalized Seed and Early Stage investment partnerships around the State but equally to stimulate the formation of greater numbers of new firms that add to the State-wide capacity to effectively deploy Seed and Early Stage capital.

With a requirement for at least one dollar of private capital for each dollar of investment by the Program, the Ohio Venture Capital Authority could increase the amount of Ohio-focused Seed and Early Stage capital by \$200 million or more. In December, 2004, the Ohio Department of Development selected Buckeye Venture Partners to administer the program (the Program Administrator). Buckeye Venture Partners is a joint venture between Peppertree Partners, an established Northeast Ohio-based private equity “fund of funds” manager, and Fort Washington Capital Partners, the Cincinnati-based private equity “fund of funds” manager of Fort Washington Investment Advisors, a member of the Western & Southern Financial Group based in Cincinnati.

Buckeye Venture Partners will oversee management of the Program and will contribute itself 1% of all invested capital. As is typical for a “fund of funds,” it will receive a management fee and a “carried interest” in the financial upside generated by the Ohio Venture Capital Authority’s investments in individual Seed and Early Stage funds around the State.

Buckeye will invest in both Ohio-based and non-Ohio based Seed and early Stage funds that commit to invest at least 50% of program funds in Ohio based companies. At least 75% of total available funding will be invested in Ohio-based funds and up to 25% may be invested in non Ohio-based funds. Each fund seeking capital from the Program will need to demonstrate an ability to raise significant capital from market-based private sector sources. For Ohio-based funds, the Ohio Venture Capital Authority may match up to 50% of private sector equity commitments and for non-Ohio based funds the match may be up to 20%. In any event, the maximum commitment to any individual fund will not exceed \$10 million.

In essence, Buckeye will take capital borrowed as interest-bearing loans from debt-type investors and will downstream such funds as equity investments in private equity limited partnerships around the State that in turn re-invest such equity in investments in Seed and Early Stage companies. Over time, the investments, as they develop and exit, are expected to provide the funding to “upstream” the funds necessary to repay the borrowings under the program. To the extent of any return shortfalls, the guarantee in the form of the contingent income tax credits is available to assure a return. To the extent proceeds in excess of the debt repayment are achieved over time, the surplus will be earmarked for State-wide educational programs.

With capital availability tentatively planned for the second half of 2005, and given Northeast Ohio’s strong ties to the Program, the Ohio Venture Capital Fund Program could prove to be a meaningful source (perhaps over time at least \$25-30 million) of capital to fund the current volume of “investment quality” seed and early stage investment opportunities in Northeast Ohio.

## **APPENDIX D**

### **INVESTING IN VENTURE CAPITAL—USE OF LIMITED PARTNERSHIPS**

While certain individual investors from time to time make direct investments in entrepreneurial companies, most individual and institutional investors prefer to participate in venture capital through investments in professionally managed limited partnerships that specialize in making such investments. Such partnerships are managed by an investment team that conducts due diligence, structures and makes the underlying investments in individual companies, works with the companies to develop their businesses and ultimately helps them to create an exit strategy to generate an investment return.

Venture limited partnerships typically have a General Partner that provides the management services, frequently through an affiliated company. Venture partnerships typically have a ten year life with several potential extension years. Investors usually commit at the outset to fund an overall specified level of investment commitment that is then funded by each limited partner as the General Partner requires funds to make investments in portfolio companies and pay other operating expenses. The commitment period for the making of initial portfolio investments generally lasts for five years and beyond that funding is drawn only for follow-on investments and operating expenses.

As noted in the preceding text, most Seed and Early Stage funds tend to be local and regional in their investments. Some will make investments only in one phase of these stages whereas others may invest across stages and even reserve some follow-on funding for Later Stage investments in existing portfolio companies. Many funds emphasize investing in multiple technology areas or industry verticals while others tend to specialize, depending upon the expertise and experience of their team.

Most venture firms tend to invest primarily in C corporations in terms of their underlying portfolio companies (rather than Sub-S or LLC corporations) so as to only generate capital gains and partnership operating expense rather than passing through the individual results of portfolio companies on a flow-through basis, although certain firms will make flow-through investments if their limited partners are primarily individuals. In general, most institutional investors prefer not to incur flow through income on their financial statements and reports.

Most venture firms value their portfolio at least annually and will adjust values quarterly in the event of any material increases or decreases in the value of underlying companies, based on

third party financing or operating events. In general, most venture managers have an outside valuation committee (frequently composed of larger limited partners) that oversee the process of annual valuation and monitor and approve any conflict of interest issues. Frequently, firms also have an outside Advisory Board of technology or industry experts or executives that provide assistance in technology or industry analysis or perspective.

Since the private equity business is long term in nature and requires significant active portfolio management, team continuity is important and the fee and compensation structure of venture firms is designed to address the need for staffing to manage and oversee portfolio companies through liquidity, while aligning interests of the general partner and management team with those of the limited partners. As a consequence, annual management fees tend to be higher than for conventional public market equity managers, usually in the range of 2-3% per year, plus a “carried-interest” that is generally equivalent to 20% of the capital gains of the fund after expenses, such that the principal compensation for the General Partner comes from the successful investment of limited partner capital. Distributions to limited partners and the general partners occur over time in cash or in public stock as companies are sold or go for an Initial Public Offering. For most venture funds, the lion’s share of return is generated during years 6-10 of the fund.

Most successful investors in venture capital realize that it is a long term business and that it is important to invest over multiple fund cycles to bridge periods of strength and weakness in industry and financial market cycles. Certain fund “vintage years” tend to be better than others and so choosing capable managers and then investing with them in multiple funds is usually thought to be the preferred approach. Many investors will engage outside experts that assist in analyzing and monitoring of the fund managers.

As noted above, in investing in venture funds, a binding commitment is made at the outset by investors that then are funded over a period of five years or more. This cash flow cycle means that asset allocation decisions must take into account the cash flow cycle of venture investing. As a practical matter, most institutions that are active venture investors will establish a fund “commitment target” that is up to 200% of their “asset allocation target.” As an example, for a foundation that wanted to target 2% of its overall investment assets for regional venture capital, it would mean the foundation would actually have to commit to investment level of up to 4% in order to achieve actual invested dollars over time at the 2% level.

Since venture funds typically raise capital in 4-5 year cycles (usually starting a new fund by the last commitment year of the initial fund’s five-year commitment), and well managed funds usually

will begin to generate distributions by around the fifth year (or sooner), it is frequently the case that a commitment to a second or third fund by a limited partner may be significantly funded from distributions from the first (and second) funds.

Another feature of the cash flow cycle of venture investing is that it is common for funds to have losses in the early years as they build out the portfolio. Most all funds incur early losses due to absorbing operating and start-up costs (management fees and organization costs) well before portfolio exit transactions are undertaken that generate realized gains.

In addition, it is very common for portfolios to incur earlier losses on the exit of transactions that were less successful in comparison with the “winners’ in a portfolio, which typically take a number of years to mature and generate attractive exit values. This phenomenon is known to many in the industry as the “J Curve,” where overall portfolio valuation goes down after fund inception for a period of up to several years, before turning positive with the sale or exit and monetization of successful companies in the later years of the fund’s life.