

STATE OF WISCONSIN INVESTMENT BOARD

Private Markets Group – Wisconsin Private Equity Portfolio

**THE VENTURE CAPITAL LANDSCAPE & THE REGIONAL
CAPITAL FORMATION ENVIRONMENT**

Executive Summary

It has been almost three years since SWIB's staff penned its first white paper on Wisconsin venture capital titled "*The Wisconsin Venture Capital Landscape*" that provided an overview of SWIB's investment thesis behind increasing its commitment from \$150 million to \$200 million to that particular strategy. At that time, the portfolio's strategy was to capitalize on the imbalance in Wisconsin and the Midwest between the recognized high levels of research and development occurring in the region and the disproportionately low levels of venture capital dollars. The imbalance between the supply of capital and the demand for capital created a highly inefficient market offering advantages to investors with deep connections to the research channels, and the experience and skill to build companies to commercialize that research. The lack of competition for deals gave early investors the opportunity to invest at attractive valuations and to select the best opportunities. Although this thesis continues to hold true today, the current venture capital environment (regional and global) is going through what many believe to be a transformational period that will change the venture capital environment for years to come. These changes we believe will be good for both the industry and investors.

The investment world has changed over the past few years as a result of the economic and political environment. Given these changes, staff felt it was the appropriate time to update and expand on the 2007 white paper to explore and discuss areas that are relevant to capital formation and early stage investing today. Three topics will be covered with the first section providing a historical perspective of the venture capital industry, a review of current venture capital trends and the discussion of venture capital's future as an investable asset class. The second section will focus on regionally targeted capital programs (venture capital and other) created for investment purposes and economic development. The final section will discuss why investing in Wisconsin and the Midwest should continue to warrant attention from investors.

The venture capital industry is in a transformational period with venture capitalists and venture backed companies challenged to raise funds. The severe market correction in 2008 negatively impacted many investors' ability to fund the venture capital asset class. Known as the denominator effect, with public market asset values declining in value, exposure to private market assets, such as venture capital, real estate and private equity became a much larger component of the total investment portfolio on a percentage basis. This led some investors to pull back from investing in these strategies. In addition, some investors wondered if investing in venture capital was warranted. First, venture returns over the last decade had been poor. Second, venture returns had been driven by only a handful of successful companies (i.e. Microsoft, Google, Amazon, Netscape, etc.), which led many investors to conclude that the industry's returns were dependent on a small number of highly probable "right tail" events making it difficult to determine if venture capital returns were acceptable given the risk. Third, accessing the top tier venture groups creating the predominant amount of value within the asset class was difficult, if not impossible. It is estimated that as few as 50 venture capital firms generate the majority of the investment returns in the industry.

These investor views have challenged VCs in their attempt to fund raise which has led to a reduction of the number of funds and a reduction in overall fund sizes. As a result of the lower levels of venture capital, there is currently a supply/demand imbalance existing between capital available to fund start-ups and the number of early stage opportunities. This in turn has placed pressure on current valuations. As we will explain later, a longer term view of the venture capital investment returns data and VCs

raising smaller, more manageable fund sizes, should position the venture capital asset class for good investment returns in the future. This may be considered a contrarian view in today's environment.

A derivative effect of venture investing is the creation of employment opportunities. The venture capital industry plays a vital role in growing the U.S. economy by developing new and innovative technologies, processes and products for commercialization improving society while creating high wage, sustainable employment opportunities. There has been a push over the past couple of years to improve capital formation within states or regions around the United States for economic reasons. A well thought out and implemented plan can be an effective way to create an environment where capital and expertise can seek out and find the most promising ideas. One of the primary goals of these regional programs has been to attract outside venture capital to seed and fund local early stage businesses. To jumpstart this, targeted capital investment programs have been created by various states across the country. These programs have multiple goals, including: job creation, economic development and investment returns.

Early stage start-ups in Wisconsin and the Midwest offer venture investors a good opportunity. Staff's investment thesis has been that there are quality investment opportunities based on the gap between the high quantity and quality of research and development supported in the state and the low level of capital for these types of start-up investments. This inefficiency creates opportunities for investors knowledgeable about the local market. The fact that there has been little interest from coastal venture capitalists is often used as evidence that opportunities do not, or cannot, exist. Staff believes there are opportunities for experienced investors with local knowledge and well-developed local and regional networks. We disagree that a successful venture ecosystem cannot be formed outside of California or Boston. With the proper "ingredients" and time, the Midwest can become a region that is known for creating exciting companies, generating good investment returns, creating employment opportunities and improving the lives of many through the breakthrough technologies being developed. Progress has been made in Wisconsin and other areas around the Midwest to create a supportive atmosphere encouraging an entrepreneurial environment that can attract venture capital. This environment has been a result of the following factors: world-class research and development institutions; technology transfer, the crucial first step in transferring intellectual property out of academic laboratories to start-up companies for commercial uses; corporate catalysts with research and development functions that can be the source of capital, spin-off technologies and management talent for start-up companies, perhaps eventually acquiring the start-up and its technology or becoming customers of the start-ups (although this has improved over the years it is still not where it needs to be); entrepreneurial and support concentrations (scientists, experienced management, venture capitalists, lawyers, accountants and other professionals) that can build start-up companies and, when those companies are successful, take their new wealth and repeat the cycle. A culture to encourage company formation and risk-taking underpins the entrepreneurial effort. The presence of all of these characteristics creates a chain reaction that feeds new growth and investment success. In evaluating Wisconsin's current venture capital climate according to these characteristics, it is clear that Wisconsin has research institutions that rival the best of the venture capital centers, especially in life sciences.

A Perspective of Venture Capital Industry (Past, Present and Future)

Venture capital is the early stage funding to seed and grow young businesses. Venture capital is an important source of funding for start-ups as these companies have a limited operating history and cannot access the broader capital markets for financing. The history of venture capital dates back to mid-1940 when early investors on the east coast formed the first non-family venture capital organizations and began encouraging private sector start-up businesses. Prior to this period, wealthy families had been the main sources of capital to fund start-ups, compared to today, where funding sources have been institutionalized through the creation of partnerships. Although the profile of a typical investor has changed, the underlying goal of seeding and investing in early stage high growth companies remains. As with all start-ups, there are risks. Some companies will fail, but some will survive and prosper to one day be acquired or possibly go public. Venture backed companies' successes positively impact the economies and communities in which they operate by the (1) realization of investment returns for investors, (2) creation of new companies that hire employees and (3) creation of technologies, processes and systems. It is these three areas that have made venture capital investing an important and successful asset class over the years.

Over the past 20 years, venture capital as an investable asset class has provided good investment returns outperforming major public market indices. This however has not been the case for the more recent venture returns as the asset class has underperformed.

US Venture Capital Index Returns							
Periods Ending (March 2010, December 2009, March 2009)							
Period Ending	Quarter	1 Year	3 Years	5 Years	10 Years	15 Years	20 Years
March 1, 2010	0.7%	6.5%	-0.7%	4.9%	-3.7%	38.2%	24.0%
December 31, 2009	3.3%	3.0%	-0.2%	4.5%	-0.9%	37.9%	23.5%
March 31, 2009	-2.8%	-17.3%	1.3%	5.7%	25.8%	34.3%	22.5%
Other Indices							
DJIA	4.8%	46.9%	-1.5%	3.3%	2.3%	9.0%	9.8%
NASDAQ	5.7%	56.9%	-0.3%	3.7%	-6.3%	7.4%	8.9%
S&P	5.4%	49.8%	-4.2%	1.0%	-0.7%	7.8%	8.7%
Return Differences (bps.)							
	(410)	(4,040)	80	160	(600)	2,920	1,420
	(240)	(5,390)	10	80	540	3,050	1,460
	(820)	(6,710)	550	470	2,650	2,650	1,380

Sources: Cambridge Associates LLC, Dow Jones & Company, Inc., Standards & Poors and Thomson Datastream.

Given the poor relative performance for venture over the past couple of years, some investors believe the current venture capital model no longer works and that (1) venture capitalists must return to their roots of raising and managing smaller venture funds, (2) the investment sizes must be smaller and the number of investments within a fund should be less and (3) venture capitalists must take on a more active role with their portfolio companies. The view that the venture capital model is no longer working was raised in 2006 by the venture capital fund, Sevin Rosen. Sevin Rosen, known for its early investments in Compaq, Citrix, EA, Ciena, Lotus and Cypress, released a letter to its investors stating "We have decided to take the radical step of returning the commitments you have given us for Fund X."¹ Later in an interview, Steve Dow a Sevin Rosen general partner, stated "The traditional venture model seems to us to be broken"². Their reasoning was based on the belief that there was just too much money in the industry searching for too few good investment opportunities, no meaningful exits due a poor IPO market and valuations offered by potential acquirers that were too low to meet return expectations. Sevin Rosen's actions were significant for the industry and many took notice given the firms success.

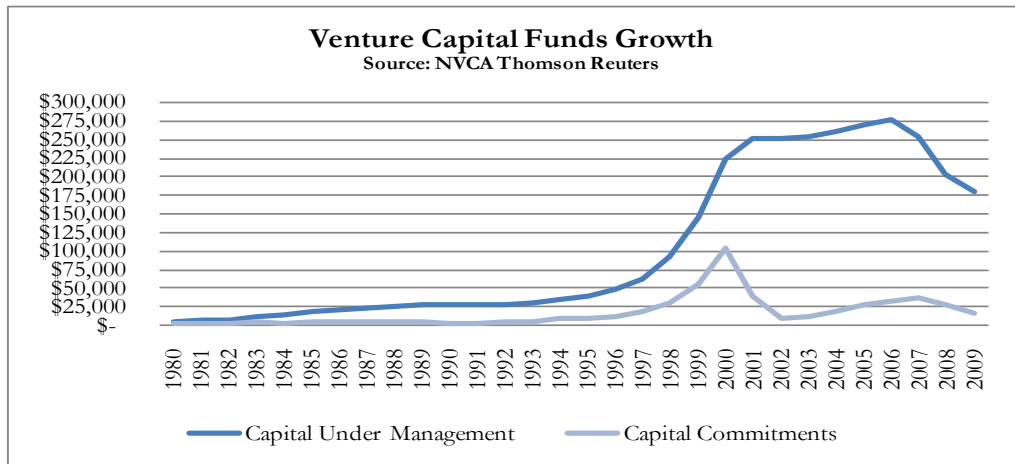
^{1,2} *A Kink in Venture Capital's Gold Chain*, New York Times (October 2006)

The question continues to be asked today if venture capital can provide adequate investment returns on a risk adjusted basis when compared to other asset classes. To better understand the future return opportunities of venture capital one needs to determine what primarily caused the poor performance in the first place.

Too Much Capital.

During the late 1970's through the early 1980's, venture capital was still a relatively young industry.

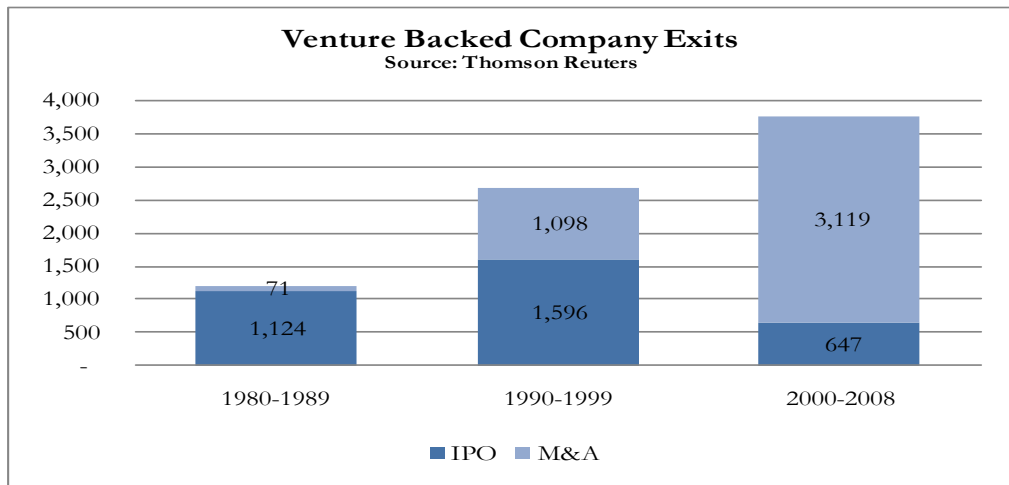
Companies such as Oracle, Adobe and Cisco were being funded by venture capitalists with great expectations.



Other companies such as Apple were able to access the public markets within a short period of time and grow to prominence (Apple was founded in 1976 and went public in 1980). However, by the end of the 1980s, venture capital returns were not particularly good relative to what was then emerging as the leveraged buyout asset class. Growth within the venture capital industry remained modest until the mid-1990s when capital began to freely flow into the asset class. From the mid-1980s into the early 1990s, due to the less than stellar performance of venture capital, there was a period of rationalization among VCs that forced some of the firms to retrench and focus increasingly on improving operations within their portfolio companies instead of making new investments. This resulted in what would lead to the interest in venture capital and to the technology/internet boom of the 1990s. The technology boom covered the period between 1995 and ended in 2000 when the NASDAQ peaked in March of that year at 5,133. During this five year period massive amounts of investor dollars flowed into venture capital with hopes of capitalizing on what was going to be the “next big thing”. A combination of rapidly increasing stock prices, market confidence that companies would turn quick profits, individual speculation in the stock market, excitement about the internet and its possibilities and huge amounts of venture capital, created an environment in which many investors were willing to overlook traditional valuation metrics. IPOs for technology and other growth companies were in abundance and venture firms were reaping huge windfalls. To capitalize on these success stories the number of VC funds and fund sizes grew from over 700 in the late 1980s to almost 1,400 by 1999 with average fund sizes doubling from \$36 million to \$72 million. During this same period, first time funds grew over five fold. The greater number of funds and larger sizes meant that more capital entered the market and as valuations and prices continued to increase, more dollars were invested. It was the perfect storm where too much capital was available and being invested in an environment where there were just not enough good opportunities. The bursting of the technology bubble in 2000 closed the IPO window. With the inability to take companies public, and VC's holding large amounts of cash, they continued to fund companies with expectations the markets would return to “normal”. This never happened.

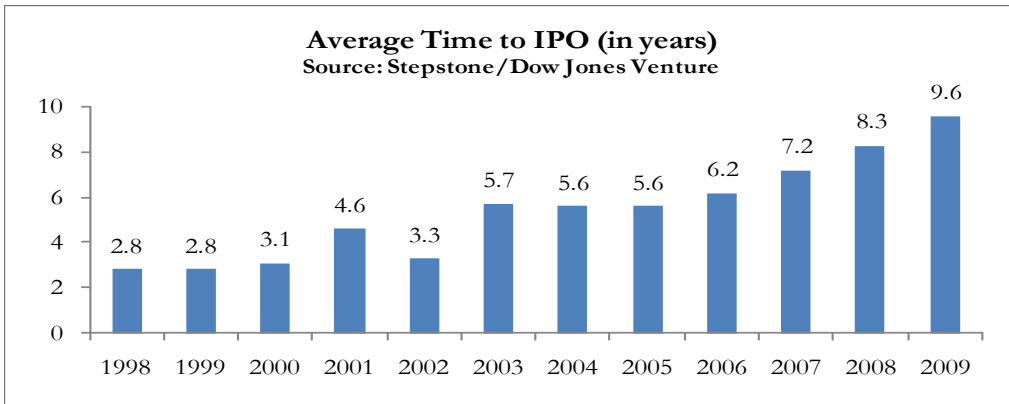
Decline of IPOs.

The source of liquidity for early stage companies has gone through a significant change over the past 30 years. The lack of a vibrant IPO market and time it takes for a company to go public has played a role in the poor performance of the



venture capital industry. Reasons for the decline in the number of IPOs include increased regulations and reporting requirements (i.e. Sarbanes Oxley), the lack of analyst coverage to help with share liquidity and the lack of investment banker interest to work with smaller early stage companies. These issues have made it more problematic for early stage companies to access the public markets and provide liquidity and wealth to the investors, founders and employees. Another effect of a poor IPO market is that without a competing exit vehicle for VCs, M&A prices are limited. Prior to the dot-com boom, it was possible for start-ups to access public markets after the companies and management teams had

proven they could adjust their models and compete effectively in the market place. In 1998, it took a company just under three years to access the public markets compared to 2009's average time to an IPO of



just under ten years. Many feel there are not enough companies going public and changes need to occur to open this window. The National Venture Capital Association's (NVCA) analysis shows that 14% of all companies initially funded during the 1990s went public. If you assume that approximately 1,000 companies are funded for the first time each year, there should be approximately 140 companies going public annually. In the recent past, the numbers of companies going public has been far less. As poor as 2008 was for venture funded companies going through the public offering processes, 2009 was not much better. In 2009, a total of 12 venture backed IPOs raised \$1.6 billion. This was 6 better than the number of venture IPOs in 2008. These two years were the second worst and worst years, respectively going back to 1980.

Venture Partner Experience. During the bull run of venture capital between 1995 and 2000, the number of new funds entering the market increased significantly. Some attribute the challenges the venture

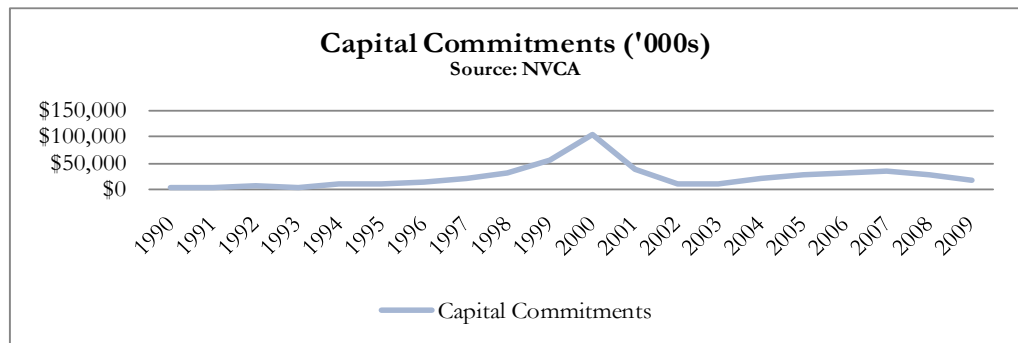
industry is facing today to the experience level of the venture partners that were deploying the capital during this period. The early venture investors were entrepreneurs. These individuals had experience in operating and managing a business created from a concept through to a successful outcome. During the 1990s there was a rush to fund companies that had any relevance to the internet and in the company name referenced “.com”. Seeing this as an opportunity, freshly minted MBA’s gravitated to newly formed venture funds to invest in companies that would hopefully become the next Microsoft or Amazon. What these individuals lacked was operating experience which proves to be invaluable in times of crisis. Marc Andreessen, founder of Netscape and current venture investor, stated “When too many venture capitalists serve on a start-up’s board with “no proper judgment, who have never built a company,” they tend to get too involved in running the company and, in high-pressure situations, imagine problems that do not exist. Their insecurity and own anxiety filters into the advice.”³ Having operating experience is an important qualification when given the responsibility to invest in newly formed businesses. We are not saying that partners with operating experience would have been able to avoid the many failures brought on by the dot-com crash. However we are saying that VCs with operating experience may have never invested in some of these start-ups in the first place. Obviously the ideal VC is someone that has both investor and operator experience, however, one cannot discount all VCs that have little operating experience. What is important to takeaway is there were less experienced VCs investing at a time when capital was flowing freely. That combination played a part in the current state of the venture environment.

Today, the venture capital industry is in a precarious position because of a long cycle of poor performance. Many investors have walked away from the asset class as a result of the investment returns or due to liquidity issues caused by the global economic environment. We believe these factors could prove to be an inflection point for the venture capital asset class to fix itself and return to the days where venture returns are meaningful on a relative basis compared to public market indices.

Staff believes that the current environment for venture investing offers attractive opportunities on a select basis. Our views are based on the following (1) Less capital, in general, will be raised and invested in early stage startup companies. There will always be some funds that continue to raise larger amounts of capital due to the stages in which they invest or the industry in which they are focused; (2) Less capital to invest should translate into lower valuation levels; (3) A renewed focus on capital efficiency; (4) Continued innovation will always occur; (5) Survival of the fittest and (6) Better access to experienced top tier venture capitalists.

Capital Levels.

Investment flowing into the venture capital asset class has significantly dropped especially over the past ten years. The surviving venture capital groups will be the beneficiaries of the fallout as they will attract the capital. It is expected that after the fund

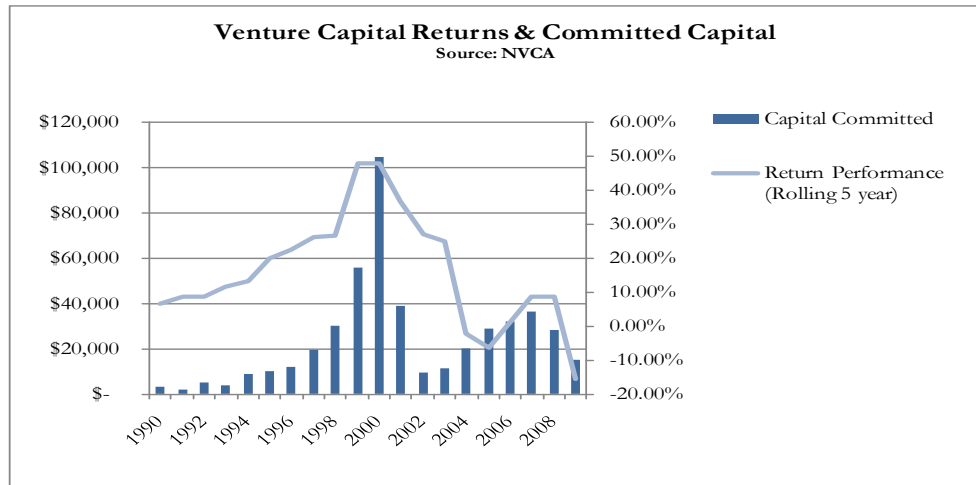


³ *Venture Capitalists Look for a Return to the A B C's*, New York Times (July 2009)

rationalization process is complete, there will be 30% to 50% fewer venture funds than exist today. If that holds, the approximately 800 venture capital firms in existence at the end of 2009 will decline to between 400 and 560. The Wisconsin Private Equity portfolio is proof of this, albeit with a much smaller sample. Within the four general partners SWIB invested, only two remain, a 50% reduction.

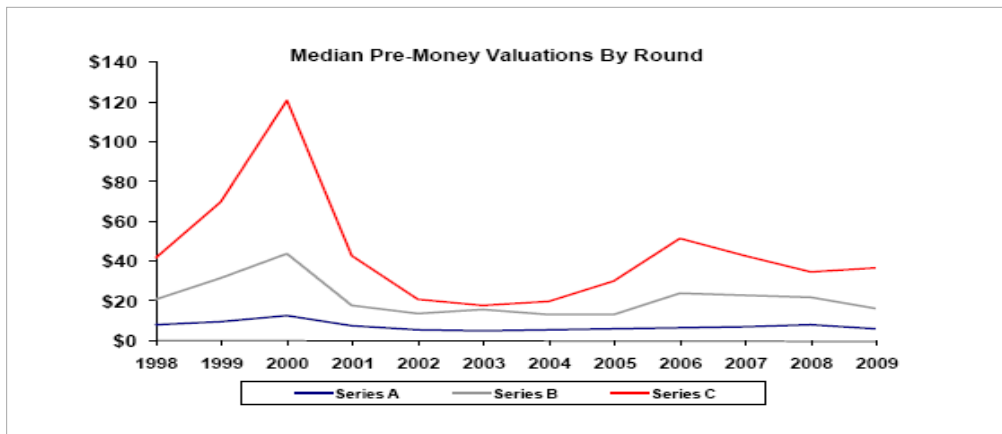
Don't expect however that the same amount of capital will be invested in a fewer number of funds. Many of the institutional LPs continue to face liquidity constraints and will be limiting investments in illiquid long term assets. In addition, if VCs do return to their roots, smaller earlier stage funds with smaller investments may become the new trend. Capital discipline will once again be a core strategy.

Needing less capital will lower the average fund size which is a good sign as this has tended to precede strong venture capital performance (see *Venture Capital Returns & Committed Capital* chart). Venture capital returns were the highest prior to



the significant inflow of dollars during the mid 1990s. Going forward, less capital available will place a premium on the dollars invested which should result in better (lower) valuations producing higher returns. As a result of the difficult fund raising environment, we also believe that the terms of limited partnership agreements will become more LP “friendly” improving the LP economics to further align the limited partner/general partner interests.

Valuation Levels. Although the industry is not back to what many believe is a normal investment environment, there do seem to be signs of a slight valuation rebound. Today, some of the most promising start-ups have been able to



access venture capital due to attractive valuations currently being offered in the market. The challenge has been for companies seeking earlier stage capital. The *Median Pre-Money Valuation By Round* graph (Source: *Stepstone*) reflects a downturn in both Series A and Series B rounds during the period 2008-2009. Some of this pressure has been due to the fact that the environment has favored more mature

and/or more substantial early stage companies. Venture capitalists have been able to invest in later stage opportunities at valuation levels normally seen earlier in the company's life. This has made it more of a challenge for early stage companies to access venture capital. In a quarterly study of venture financings published by Fenwick & West, a Silicon Valley law firm, they found that "down rounds" in the second quarter of 2009 exceeded "up rounds," 46% to 32%⁴. Lower valuations are obviously a double edged sword. For new investors, lower valuations should provide higher future returns. On the other hand, lower valuations to entice new investors can negatively impact returns as the new capital can dilute the existing capital. One concern of lower valuations, is that VCs may allocate more capital away from early stage businesses to minimize technology risk. This could potentially starve early stage companies of capital with promising opportunities and lead to a slowdown in technological advances and investment returns.

Capital Efficiency. The financial crisis of 2008 reemphasized to investors and managers the importance of being efficient when allocating and investing capital. One of the most prominent venture firms, Sequoia Capital met with portfolio company CEOs in 2008 to address concerns about the economy. A plan was laid out by the Sequoia partners on how its companies would survive the economic crisis. One of the key topics was cutting costs and preserving capital. Companies needed to quickly re-focus on becoming cash flow positive because raising capital would be challenging. Sequoia was right and so were many other VCs that retrenched to weather the economic storm. Today, companies are able to operate their businesses more efficiently with the advent of cloud computing, SaaS, open code software and operational/back office outsourcing. Management can leverage these technologies driving down costs while growing revenue and market share to create more value for investors.

Continuum of Innovation and Commercialization. Financial crisis or not, innovation is perpetual. There will always be smart, driven and entrepreneurial individuals that come up with creative ideas for a new technology, process or product. The success of a technology is dependent upon access to good science, motivated entrepreneurs, intellectual property protection and a highly trained and skilled workforce. These basic characteristics remain alive and well within the American culture. Whether the start-up is initially funded by a grant, federal research dollars or through angels, friends or family, these companies may require institutional venture funding to build out the technology for commercialization. Today, promising technological areas include clean energy, wireless applications, social media, cloud computing, personalized medicine and healthcare IT. Technologies developed to solve these problems will not only help improve society but provide good investment returns to investors.

Survival of the Fittest. Venture capitalists with the best performance will be the survivors as limited partners will only invest in proven teams. Higher underwriting hurdles will be set for new or emerging managers seeking to raise funds. The confluence of limited partners not having either the interest or liquidity to invest in venture capital and the reduction in the number of venture capital funds will create good opportunities to invest in the asset class.

Better Access to Top VCs. Related to the point above, successful VCs will be able to raise future funds to take advantage of current market opportunities. Many limited partners have revaluated their asset allocation to illiquid asset classes and concluded less exposure is better for various reasons. This decision not to invest in venture capital will open up opportunities for limited partners, with liquidity and a favorable view on venture capital to invest in the top tier venture funds for the first time. These top tier firms will find that this period will also be a good time for them to diversify their investor base and reduce their reliance on past limited partner relationships. Access to these top tier funds should lead

⁴ Fenwick & West Venture Capital Survey, Silicon Valley Second Quarter 2009

to higher investment returns and allow knowledgeable LPs to leverage these new relationships to promote regional venture capital opportunities. One obstacle for public pension investors will be overcoming the Freedom of Information Act (FOIA) requirements. FOIA restrictions place too many uncertainties on what information can and should be released to the public. For obvious reasons, this uncertainty has been the primary factor why top tier venture firms have not been eager to allow public institutions to invest in their funds.

Before public plans such as SWIB can begin investing directly into the top tier venture firms, the FOIA issue must be addressed.

In general, Staff views smaller funds as more attractive given the past trends. In addition, funds making smaller investments and that have a smaller number of partners with operating experience and deep knowledge/expertise of a particular industry/technology are important. A prime example of this model would be Founders Fund, an early stage venture fund backed by some of the founders and operators of PayPal, Facebook and Napster. This group has raised its third fund totaling \$250 million. The Founders Fund partners are planning to take on the role of a traditional venture backer providing both the capital and coaching for the companies they back.

In conclusion, staff believes that the current venture environment offers an unprecedented opportunity to access top tier funds and invest into a climate with favorable valuations. Both should translate into higher future returns.

Regionally Targeted Capital Formation & Venture Capital Initiatives.

Another positive effect of venture investing (other than investment returns) is the creation of new companies to create employment opportunities. The venture capital industry plays a vital role in the U.S. economy by developing new and innovative technologies, processes and products. A study commissioned by the NVCA⁵ determined that venture backed companies employed more than 12 million people generating almost \$3 trillion in annual revenue. These totals accounted for 11% of the private sector employment representing over 20% of the U.S. GDP. Looking at both job growth and revenue growth from this report, job growth from venture backed companies between 2006-2008 was 1.6% compared to U.S. private sector job growth of .2% for the same period. Revenue growth between 2006-2008 was 5.3% for venture backed companies compared to 3.5% for U.S. private sector businesses. Seeing the successes of the U.S. venture capital model, countries around the world are beginning to take note and create their own venture capital environment making adjustments to their legal and regulatory systems, tax policies, ability to access outside foreign capital and intellectual property. The United States is not the only country fostering start-ups and as a result, innovation will become more global making it more difficult to compete for venture capital. Given the changing dynamics, policymakers must evaluate the impact and consequences of new rules and regulations with great care. With a supportive public policy environment and a well thought out strategy to stimulate capital formation and technology transfer, venture capital will provide the efficient distribution of capital and expertise for the most promising ideas around the United States.

An important component in continuing venture capital's role in the U.S. economy is the development of venture capital regions outside of the well known areas in California (Silicon Valley), Boston (Route 128) and North Carolina (Research Triangle Park). While these areas continue to generate promising young companies, a number of other regions around the country such as the Pacific Northwest, Mid-Atlantic, Southwest and the Midwest are beginning to gain traction building out a venture ecosystem that will nurture and grow early stage businesses, create jobs and generate investment returns. Geographic areas with core technology depth, academic/research institutions to create new technologies, access to capital and a favorable business environment can develop into promising regions for early stage companies. This process takes time. Silicon Valley was not created over night. In fact, Silicon Valley's beginnings date back to the early 1900's during a time when the radio and electronics industries were going through significant technological change. Companies such as Federal Telegraph Corporation, Radio Corporation of America (RCA), Fisher Research Laboratories and Magnavox, with significant funding from the U.S. Department of Defense, laid the groundwork for the growth that came about in the 1970s and 1980s. Companies like these, with access to technology and capital, transformed a small region in California into what many believe to be the preeminent location for early stage company development.

There are certain states around the U.S. that have been active developing regionally targeted programs to promote start-up business activities and access to early stage capital. For these initiatives to be effective over the long-term, there must be promising technological ideas and opportunities, a favorable business climate and access to capital whether that is public or private funding. In particular to public funding, a careful and well thought out plan needs to be created to not compete with private capital. Public funding plays an important role in creating an entrepreneurial ecosystem but should focus more on building out the corporate infrastructure and business climate where all businesses can succeed.

A significant amount of public funding through the Department of Defense was invested in the Bay area during the formative years of Silicon Valley. This capital laid the foundation allowing private capital to

⁵ *Venture Impact, Economic Importance of Venture Capital Backed Companies to the US Economy (2008)*

flow into the development and growth of early stage companies. Forcing capital, whether public or private, into an area with too few quality investment opportunities or into an areas that cannot properly support businesses will undermine all efforts of seeking good investment returns and starting new businesses.

In reviewing the various regional programs, there are common themes highlighted below which make them a better fit to be managed by public sector agencies.

1. State Led Advocate Groups: The primary advocates for these capital formation programs tend to be advanced and managed by the various states' Department of Economic Development or the Department of Commerce. Rarely are these initiatives funded and/or operated by groups with investment returns being the primary objective.
2. Program Reasoning: These programs tend to be introduced during periods of economic difficulty in an attempt to improve or diversify an economy. Rarely are these initiatives brought on to seek out market rate investment returns although a few regional programs do state this as a key goal/requirement.
3. Funding Sources: In reviewing capital formation programs introduced by various states, a majority of funding has come from state general obligation bond offerings, investment vehicles using tax schemes to attract capital or diverting state revenue sources for program funding.
4. Multistage Funding: All of the programs reviewed provided funding for various business needs and for companies at different stages of development (from start-ups to mature businesses).
5. Goals (Predominantly Economic Development Focus): Economic development and job creation and retention are the primary goals of a majority of these programs. These goals are admirable and important and by no means should they be minimized. Without a strong vibrant state/regional economy, businesses may find it difficult to operate due to uncompetitive costs, poorly educated workforce, inability to recruit and retain quality employees and lower quality of life/standard of living for its employees.
6. Management and Measurement: As an outsider it is difficult to ascertain the success of these various programs in terms of investment returns or economic impact. To be successful, the programs need to maintain a strong governance structure, must provide as much information as possible and be open and transparent to avoid any agency issues that can arise with these types of initiatives.

Investing in Wisconsin...Why it Continues to Warrant Investor Attention.

Staff's initial investment thesis back in 1999 when considering investing locally into venture capital was simple, "there were high quality investment opportunities here in Wisconsin (and Midwest) based on the gap between the high quantity and quality of research and development supported in the state region and the low level of capital for these types of start-up investments". This market inefficiency, in theory it was thought, should create opportunities for investors knowledgeable about the local market. Staff feels that this thesis is still as valid today as it was ten years ago and that maybe, given the current state of the venture capital environment, future return opportunities will be even better as access to capital continues to be a challenge. Although ten years have passed and the Wisconsin venture ecosystem has matured, it is still early in its life. In looking at the history of other venture capital regions around the United States, the journey here in Wisconsin has only just begun. The local venture capital environment is markedly better today than it was ten years ago, but there is still much to do to continue to support and foster the local early stage community. One thing for certain is that there continues to be opportunities for experienced investors with technological knowhow and well-developed local and regional networks. Wisconsin and other areas around the Midwest have created a supportive atmosphere to encourage an entrepreneurial environment that can attract venture capital.

As stated on the first page of this white paper, the primary factors that create an environment conducive to early stage start-up opportunities and venture capital continue to be present here in Wisconsin. These factors include: (I) World-Class Research and Development Institutions; (II) Technology Transfer, the crucial first step in transferring intellectual property out of academic laboratories to start-up companies for commercial uses; (III) Corporate Catalysts with research and development functions that can be the source of capital, spin-off technologies and management talent for start-up companies, perhaps eventually acquiring the start-up and its technology or becoming customers of the startups; (IV) Entrepreneurial and Support Concentrations (scientists, experienced management, venture capitalists, lawyers, accountants and other professionals) that can build start-up companies and, when those companies are successful, take their new wealth and repeat the cycle. A culture to encourage company formation and risk-taking underpins the entrepreneurial effort; and (V) Local/Regional Economic Environment.

All of the factors outlined above play a role in early stage company growth and investment success. In evaluating Wisconsin's current investment climate, Wisconsin continues to have research institutions that rival the best of the venture capital centers, especially in life sciences. The UW-Madison, in particular, has the pioneering patent and licensing office in the nation, the Wisconsin Alumni Research Foundation (WARF). WiSys, a subsidiary of WARF, was created to provide support to research and educational programs at the other campuses of the UW System. WiSys serves the needs of 11 four-year campuses, 13 two-year colleges and the UW-Extension. WiSys' focus is to understand the research programs underway at each campus, as well as to facilitate the development of systems for accomplishing technology transfer from each system. The other factors, Corporate Catalysts, Entrepreneurial and Support Concentrations and the Local/Regional Economic Environment although improving, are not quite where they need to be to have a sustainable venture capital ecosystem.

I. Research and Development Institutions

The core of successful venture capital regions are the research and development engines. The ability of a region to create and develop promising technologies is truly the foundation needed to build a

successful venture ecosystem. Without a good pipeline of investable opportunities, there is no need to build out this local ecosystem. The Midwest, in particular Wisconsin, does have the assets in place to foster innovative technologies that can be developed into businesses and investment opportunities.

For Wisconsin, this element is well developed primarily due to the University of Wisconsin-Madison's continued top ranking among other public and private universities competing for federal science and technology research grant dollars. In 2008,

Largest Academic R&D Funding Recipients (in Millions)					
Rank		2007	2008	% Chng	
1	Johns Hopkins University	\$ 1,554	\$ 1,681	8%	
2	UC-San Francisco	\$ 843	\$ 885	5%	
3	<i>UW-Madison</i>	\$ 841	\$ 882	5%	
4	University of Michigan (all campuses)	\$ 809	\$ 876	8%	
5	UCLA	\$ 823	\$ 871	6%	
6	UC-San Diego	\$ 799	\$ 842	5%	
7	Duke	\$ 782	\$ 767	-2%	
8	University of Washington	\$ 757	\$ 765	1%	
9	University of Pennsylvania	\$ 648	\$ 708	9%	
10	Ohio State University (all campuses)	\$ 720	\$ 703	-2%	
Total Top 20		\$ 14,645	\$ 15,363	5%	

Source: NSF Science Research Statistics

the UW-Madison's \$882 million in research and development expenditures (federal and non-federal funded) ranked third (second for public institutions) among the nation's academic research institutions as reported by the National Science Foundation (NSF).

The UW-Madison's success has been the result of its commitment to interdisciplinary research which many feel is essential for breakthrough technologies. Interdisciplinary research projects are cross-disciplinary efforts that draw together members of faculty throughout the school to investigate ideas that change the way those involved think and act. The UW's interdisciplinary tradition is enhanced by facilities such as the Waisman Center, the Forest Products Laboratory, and the Wisconsin Institutes for Discovery (WID) which is scheduled to open in December 2010. The WID facility, a world class biomedical research institute, was made possible through a \$50 million gift from UW-Madison alumni John and Tashia Morgridge and matching funds from WARF and the State of Wisconsin. WID is similar to the Whitehead Institute for Biomedical Research at MIT and the Clark Center at Stanford, but will combine both the public (WID) and the private Morgridge Institute for Research (MIR) institutes. The public/private relationship is unique and WID will be the first public/private research center in the country that is part of a major academic research institution. The key objectives of this relationship will be to:

- Foster new approaches to biological and medical programs at the convergence of biotechnology, information technology and nanotechnology.
- Create the potential for a fundamental transformation of human biology and medicine.
- Provide cutting edge scientific advances for clinical application and translation in the UW-Madison Medical School's new Wisconsin Institutes for Medical Research.
- Build on the university's Cluster Hiring Initiative by engaging and supporting the more than 100 multi-disciplinary faculty hired as part of that initiative.
- Establish educational components that will integrate cross-disciplinary science into K-12, undergraduate and graduate education.
- Facilitate the invention of technologies that can be transferred to the marketplace and create jobs.

MIR will focus on improving human health by accelerating scientific discovery to patient delivery. Seven of the UW-Madison's top researchers were selected to recruit and hire top talent from around the globe to lead five key research areas and programs at MIR. The five areas of research will be: Virology, Regenerative Biology, Medical Devices, Study of Viruses and Pharmaceutical Informatics.

Outside of Madison there are other areas in the state that are experiencing a significant surge in research and development activity, driven by a number of academic and private institutions, providing a base for emerging technologies that will someday be commercialized. The more prominent institutions include: (1) The Medical College of Wisconsin, (2) The Milwaukee School of Engineering, (3) The University of Wisconsin-Milwaukee, (4) Marquette University, (5) The Blood Center of Wisconsin, and (6) Marshfield Clinic. Recently, there has been much support of a new initiative coming out of Milwaukee supporting the research, education and outreach to better understand the Great Lakes and other aquatic and environmental resources around the globe. The Great Lakes WATER Institute, a University of Wisconsin System research facility operated by the School of Freshwater Sciences at the University of Wisconsin-Milwaukee is leading this exciting initiative. The WATER Institute will promote a broad spectrum of multidisciplinary, interactive aquatic and environmental research. Milwaukee's water initiative is again an excellent example of how both public and private groups can work together in a collaborative manner to seek out and support organizations focused on research and development of new technologies. It is the plan that these technologies will lead to new companies, jobs and investment opportunities. Water is an important issue globally with many uses such as drinking, sanitation, agriculture and industrial. While carbon based energy sources are important and tend to make up much of the news headlines, water will become the precious commodity of tomorrow. At some point in the future due to technological innovation, we will discover alternatives to carbon based energy sources. Water however cannot be replaced. Factors such as an increasing global population, developing countries seeking a better quality of life, pollution problems and changing weather patterns will all impact the demand for water. New technologies whether that be purification, filtration, metering, discovery/access or contamination abatement to meet this demand will create investment opportunities. Milwaukee and the WATER Institute are well positioned to capitalize on this important and growing market.

It should also be noted that behind the UW-Madison, 10 other Midwest universities rank among the top 50 Research Universities nationally, according to the NSA. The largest Midwest institution after the UW-Madison is the University of Michigan, which placed fourth with \$876 million in research and development expenditures. The clustering of high quality academic R&D institutions in the Midwest is important for two reasons. The first has to do with cross fertilization of ideas between universities. Academics are able to draw upon the expertise of others within close proximity to one another. This is already occurring between the UW-Madison and the University of Michigan. Second, with this core R&D hub in the Midwest, a greater number of investment opportunities should provide portfolio diversification and a greater focus from venture capitalists within the Midwest and on the coasts.

II. Technology Transfer

Wisconsin is a leader in technology transfer. Technology transfer, the formal transfer of rights to use and commercialize new discoveries and innovations resulting from scientific research to another party, is critically important for a venture ecosystem. WARF, Wisconsin's globally recognized technology transfer group, is perennially in the top-ten list of university technology transfer offices. WARF

promotes and supports the scientific investigation and research at both the University of Wisconsin-Madison and MIR. WARF will assist companies early in the start-up process with any legal or patent issues. Periodically, WARF will also invest directly into companies that have licensed University of Wisconsin intellectual property. Since 1925, WARF has processed more than 6,000 UW-Madison faculty and staff inventions and obtained 1,900 patents and over 1,600 license agreements on those inventions. Currently, WARF manages more than 800 pending, and 1,000 issued, U.S. patents (plus more than 2,000 foreign equivalents); has a portfolio of more than 1,000 technologies available for licensing; and has more than 1,000 active license agreements (of which over 200 are with Wisconsin companies). Between 2008 and 2009, WARF processed over 345 invention disclosures, filed 273 U.S. patent applications, obtained nearly 130 U.S. issued patents and signed 56 new license and option agreements.

Other WARF related groups that help foster emerging technologies include: (1) WiCell Research Institute, a WARF non-profit established in 1999 to advance human embryonic stem cell research and therapeutic applications, (2) UW-Madison's Office of Corporate Relations, created to connect corporations to the UW's resources and promote entrepreneurial activities within the UW community (3) WiSys and (4) Wisconsin Institutes for Discovery.

III. Corporate Catalysts

Critical to a successful emerging technology environment is the presence of a good selection of well established businesses that are involved and interested in start-up opportunities. Corporate involvement can be beneficial to young start-ups in two areas, capital and talented management. Active corporate venture capital investing is defined as operating businesses investing directly in early stage/start-up companies, either directly by themselves, or alongside traditional, independent venture capital funds. These businesses are in some cases referred to as strategic investors. At some point, strategic investors often end up acquiring these start-ups. In essence, this corporate venturing is a subset of the venture capital industry whereby a corporate catalyst is investing, without the use of a third party (VC general partnership). These catalysts tend to have two objectives, one being strategic, to increase revenue and profitability through a new product or through the leverage of its own cost structure. The second objective is financial as they tend to know the markets they serve better than venture capitalists and can identify early stage companies with promising technologies to address future market demand. The benefit to young start-up companies is the pool of management talent that is available at these larger, more established businesses. Managers with deep technical and operating backgrounds will pursue new start-up opportunities for professional growth reasons, as well as to potentially increase personal wealth.

Wisconsin is home to many businesses with significant R&D functions and cutting edge technologies especially in the healthcare industry. A current trend within the healthcare industry has been the larger companies (especially pharmaceutical companies) reducing the number of scientists in the research and development labs and dramatically cutting the capital invested in new R&D programs. Glaxo, Pfizer, Sanofi, Novartis and Merck all have reduced R&D budgets over the past couple of years. It is estimated that employment within the 14 largest pharmaceutical companies across the United States, Europe and Japan will fall around 20% between 2009 and 2015.⁷ A major problem faced today by large pharmaceutical companies is their lack of new pipeline drugs to replace what will be coming off patent. As a result, a trend is beginning within the healthcare industry of venture capital investing by corporate catalysts. The largest segment of healthcare related venture capital investments are made by the venture

arms of firms who focus on biotechnology and pharmaceutical products, such as Lilly, Glaxo, Biogen Idec and Roche (*we will come back to Roche later in this section*). The strategy of these venture groups is to seek out and invest in companies that have technologies that may benefit the parent company. In most instances, these early stage start-up companies have taken on the early risk associated with identifying a compound that may be effective in treating a disease, taken on the work to gather, analyze and provide data to open an Investigational New Drug application with the FDA, started and successfully completed a Phase 1 (safety) trial and possibly initiated some work preparing for a Phase 2 trial. With a promising compound somewhat “de-risked”, the large pharmaceutical companies have started acquiring early stage companies to advance the compounds further into the FDA. A good local example of this occurring was the sale of Milwaukee based Zystor Therapeutics in August to BioMarin. Focusing on the LSD (Lysosomal Storage Disorders) market with internally developed compounds, BioMarin found Zystor’s compound extremely interesting and decided to acquire the company for \$115 million (an upfront cash payment of \$22 million with an additional \$93 million paid if certain milestones are met) which was a good outcome for investors. Staff believes that these types of transactions will continue as large healthcare companies look to augment or improve their product pipeline.

Wisconsin has a good number of corporate catalysts. The most prominent is Waukesha-based GE Healthcare Technologies, with a \$17 billion business in medical imaging and information technologies, patient monitoring and healthcare services. Not only is GE a major employer, it has been a serial acquirer buying Madison employers, Lunar Corporation and Datex Ohmeda (Amersham plc). GE has been the training ground for many of the high level managers now employed at some of the local start-ups. These managers include: TomoTherapy (Fred Robertson, Ken Buroker and Paul Pienkowski), Celectar (William Clarke and Neal Sandy), NeuWave (Laura King), Third Wave and Exact Sciences Corp (Kevin Conroy), EM System (Andrew Nunemaker) and PointOne Systems (Robert Pothier). Other valuable corporate relationships to Wisconsin and the growth in emerging companies include: Shell Oil (formed strategic relationship with Virent Energy 2007 and an investor in 2010), Microsoft (acquired Jellyfish.com in 2007 and subsequently opened a research lab in Madison in 2008), Google (opened an office in Madison in 2008), CSC (acquired NameProtect.com in 2007), TomoTherapy (successful completion of an IPO in 2007), Roche (acquired NimbleGen in 2007 and Mirus in 2008), CDW (acquired Berbee Information Networks in 2006), Cardinal Health (acquired Gala Design in 2003), Genzyme (acquired Bone Care in 2005), Hologic (acquired Third Wave in 2008), Affymetrix (formed a strategic distribution agreement with NimbleGen in 2007), Bayer HealthCare and Promega (entered into commercial agreements with EraGen), EMD Biosciences (acquired Novagen in 1997), Sigma Aldrich (acquired Tetrionics in 2004), Covance (completed a \$50 million facility expansion in Madison, its third expansion in Wisconsin for the drug testing company doubling capacity) and Doosan (partnered with Nutra-Park in 2000). Also in 2008, Kikkoman Corp. established its first U.S. based research lab in Madison’s University Research Park. The lab is being led by one of the company’s top research scientists focusing on new product development for American consumers. Kikkoman’s decision to locate its facility in Madison was because of the area’s access to highly experienced researchers in the food industry. Also, in 2009 Mentor Worldwide donated a \$16 million manufacturing facility to MIR to help accelerate biomedical discoveries. Mentor was acquired in 2009 by Ethicon, a Johnson & Johnson company. Mentor’s donation is another example of corporate collaboration as Mentor’s reason behind

⁷ *Big Pharma Cuts R&D Jobs as Generics Loom* (The Economic Times 2010)

the gift was due to its belief that accelerating interdisciplinary biomedical research through collaboration between industry and academic-based organizations is important. The relationship between MIR and Mentor (n/k/a Ethicon) illustrates the importance of corporate and non-profit collaboration to advance technologies improving society. In the Milwaukee area, there are over 120 companies that in some way are focused on water-oriented markets. Companies such as GE (one of the largest investors in the water industry), Badger Meter, A.O. Smith, Veolia North America, Advanced Chemical Systems, ITT Corp., Siemens AG and the Kohler Company are positioned to leverage what is becoming a technology cluster focused on water. With corporate catalyst support, Milwaukee can become the preeminent region focused on water.

Having an established core group of corporate catalysts within Wisconsin, although improving, is not where it should or needs to be. When companies are acquired, especially in the healthcare space, many times the target company is closed with jobs moved out of the region to be consolidated into the acquirers operations (whether that be inside or outside of the United States). For the investor, whether a company stays or moves is not important. However, to the mayor of a city or governor of a state that is losing jobs, this is a very important issue and one that many are trying to address. Various stakeholders representing businesses, economic development and philanthropic interest groups within Wisconsin sponsored a paper called "*Be Bold Wisconsin*"⁸ that describes a concept known as "target clusters". The concept is to define targeted industries that Wisconsin excels such as biotechnology/life sciences, water, food science, agriculture businesses, employment services, printing, paper making and then aggressively support these clusters as they will be the drivers of the state's long term economic health. By locating companies whose products or services are sold into or support the various technology clusters close to one another, corporate catalysts may be more inclined to keep operations within that local environment to remain near the innovation. In addition, clustering allows for technological collaboration among and between companies and improves the environment for employment opportunities. Technology clustering is important to the success of Silicon Valley. The proximity of numerous companies each having similar labor requirements reduces employment related costs. A more important aspect to the labor issues is the mobility of workers being a catalyst for the transfer of knowledge and experiences between firms. Targeting and supporting technology clusters within the state is a very good idea and one that will generate tangible and intangible returns well into the future.

In Madison, a good example of a life science technology cluster success has been the commitment of Roche to keep a local presence. In 2007, Roche, one of the world's leading research-focused healthcare companies in the fields of pharmaceuticals and diagnostics acquired NimbleGen for \$273 million. Recognizing the importance of what Madison had to offer in terms of technological innovation and labor force skills, Roche Madison was formed. In 2008, Roche then acquired Madison based Mirus Bio Corporation which focused on the discovery and development of innovative nucleic acid based technologies for \$125 million. Further committing to the Madison market in 2009, Roche Madison opened a new research facility after spending over \$4 million in a building renovation. Roche Madison now operates two facilities in Madison employing over 200 people. More recently it was announced that another Roche company, ACEA Biosciences, had formed a partnership with Madison based, Cellular Dynamics International to test drug toxicity on heart cells.

⁸ *Be Bold Wisconsin-The Wisconsin Competitiveness Study* (2010)

The takeaway from this is that if you can seed and grow technologies and companies focused on what larger corporations are interested in, they will take notice and make the commitment to acquire. If you give them multiple opportunities in close proximity, they will make the commitment to stay.

IV. Critical Mass or Concentration of Entrepreneurs and Resources

The Wisconsin venture capital landscape has been changing over the years stimulated by both public and private efforts to capitalize on the research and development wealth of the state. Years ago, the most elusive of the key characteristics of venture capital and technology centers in the state was having a “critical mass”, or the point at which entrepreneurs and resources coalesce into a technological, cultural and economic network that is not just self-sustaining but growing rapidly. Once this critical mass is formed in a certain region, a venture ecosystem can develop. Wisconsin continues to move closer to forming the critical mass necessary to develop this venture capital ecosystem. Some of the critical components of this critical mass and the evolutionary process here in Wisconsin include the following:

Technology Industry and Investor Networks: In regions where there are high levels of venture capital, entrepreneurs and resources are concentrated in relatively small areas, providing investors and start-up companies an opportunity to quickly learn about one another. In the past, both founders and investors in Wisconsin worked in relative isolation. However this has changed over the recent years as groups have been organized to link founders, entrepreneurs and investors. These organizational groups include: (1) Wisconsin Technology Council, (2) BioForward and (3) Wisconsin Association for Biomedical Research and Education. All three organizations have promoted technology and entrepreneurship leading to new industry networks (Mid-America Healthcare Investors Network, Biotechnology Industry Organization and the Wisconsin Innovation Network). These cooperative efforts recognize the need for the entire region to pool its resources and to create the kind of efficient knowledge transfer and interaction that occurs more naturally in a concentrated area such as Silicon Valley. Other groups that have been founded to assist founders/entrepreneurs in building their companies include BizStarts and MERLIN. BizStarts is a Milwaukee based group that is focused on assisting entrepreneurs in southeast Wisconsin by helping connect them to the right resource necessary to improve and grow their companies. Founded by a group of successful Milwaukee entrepreneurs and business leaders, the ultimate goal of BizStarts is to increase the number of fast growing businesses, promote and grow a strong entrepreneurial climate and be a leader in promoting entrepreneurship within the various educational institutions. With a similar goal, MERLIN is a group comprised of experienced business leaders in Madison who volunteer their time, knowledge and experience to help convert entrepreneurs' ideas into developing companies.

Research Parks: There has been substantial public and private investment in research parks and business incubators, especially but not exclusively at universities. These initiatives serve as an important mechanism for stimulating technology transfer, the formation and growth of high-tech entrepreneurial start-ups, regional economic development and revenue for firms and universities. The creation of research parks and business incubators was the initial seed planted in Silicon Valley by Stanford University and in Raleigh-Durham, North Carolina. The research park concept was brought to Madison in 1984 when the University Research Park (“URP”) was formed through the collaborative efforts of the University of Wisconsin-Madison and both local and state governments. URP is a not-for-profit corporation that is operated for the UW-Madison to encourage and promote

scientific, technological and educational opportunities. All income that is generated by URP is distributed to the UW-Madison to assist in further scientific and technological investigation and the transfer of knowledge. Today, URP is home to 126 tenants employing over 3500 people in 37 buildings with more than 1.8 million square feet of office and laboratory space. Companies located within URP pay more than \$260 million a year in payroll into Madison's economy, plus \$3.6 million a year in property taxes based on information provided on URP's website. Within the park, URP has constructed two "accelerator" buildings that provide state-of-the-art facilities to early stage companies. URP has begun Phase 2 (URP2) of the Research Park which is further west located on a large parcel of land at the corner of Mineral Point Road and Highway M. When URP2 is completed and lots have been sold and built out, it is estimated the total cost will be well over \$300 million. Other private Dane County incubator/start-up facilities that have been recently developed include the Fitchburg Technology Campus on Madison's southwest side, the TEC Incubator Center located across from MATC and the Novation Campus on the south side of Madison. An indication that local business/investors in the community see opportunities in technology start-up companies has been the number of high technology facilities developed and the ability of these start-up companies to find private developers/real estate investors to construct and lease specialized single use buildings. Milwaukee County has also been working to develop its own research park, The Milwaukee County Research Park Corporation (MCRPC). The MCRPC was created to manage the development of a university-related research park on 175 acres in Milwaukee County. The park supports technology-based companies, strengthens Milwaukee County's business base, creates new employment opportunities and facilitates technology commercialization. This objective is being accomplished by bringing together the substantial academic, intellectual, business and entrepreneurial resources of the metropolitan Milwaukee area in a physical environment conducive to such activities. The MCRP includes the Technology Innovation Center, a business incubator supporting more than 77 firms since inception with wet labs, offices and conference rooms with ready access to the corporate and university affiliates of the park. Milwaukee's Water initiative has led to the expansion and planned creation of two new facilities. UW-Milwaukee, the city of Milwaukee and the Milwaukee Water Council have announced two locations for the School of Freshwater Sciences with a \$50 million addition to the existing Great Lakes WATER Institute and the proposed development at the Reed Street Yards. These locations will provide offices, advanced laboratories, classrooms and conference rooms for public-private collaboration focused on water research and technology.

Tax Policy Initiatives: As Wisconsin's manufacturing economy continues to suffer from recession and pressure from global competition, public policy has focused on using tax credits to stimulate investments in businesses engaged in emerging technologies. The Wisconsin Act 255 was created to provide tax credits for angel investors and seed capital funds, provide other funding sources through technology development grant programs and a technology venture loan fund. Accelerate Wisconsin, which has expanded Act 255 and other early stage initiatives, provides investors certified by the Department of Commerce that invest in qualified new business ventures to become eligible to claim up to a 25% income tax credit on that investment. Other states such as Minnesota are taking notice of this successful program recently passing a law in 2010 providing up to \$50 million in tax credits for angel investments over the next five years.

Angel Groups: Angel investors, usually high net worth individuals, traditionally are the first outside investors in a start-up company, after “friends and relatives” and before venture capital funds invest. Wisconsin’s angel groups received a boost with the creation of the Wisconsin Angel Network (WAN). WAN provides resources for angel groups, enhances deal flow, provides professional guidelines for screening deals, diversifies angel portfolios and connects angel groups and entrepreneurs. WAN, a collaborative effort between the Wisconsin Departments of Commerce, the Wisconsin Department of Financial Institutions and the Wisconsin Technology Council, assists entrepreneurs in finding and securing angel financing. Started in 2005, the Wisconsin Angel Network's hard work has been critical to the coordination and success of the current angel network environment. Since 2005 Wisconsin's angel network and funds have grown from six to 23. Over this period, early stage capital invested from this group has more than quadrupled from just over \$5 million in 18 deals in 2005 to over \$22 million invested in 56 deals during 2009.

Recruiting Professional Management: Access to experienced managers is important for emerging companies. Start-ups with great science and adequate access to capital can fail if they cannot attract experienced financial, operating and marketing executives. In the technology centers of the U.S., the concentration of start-up companies provides opportunities for experienced managers to move readily between companies and find new employment if their employer is acquired or fails. It has been difficult to convince executives with start-up experience to relocate their families to Wisconsin and the Midwest where alternative employment might be hard to find. A way to further mitigate this issue is to begin forming “target clusters” as previously mentioned. Clustering industries across the state will allow for improved employment opportunities. Access to skilled labor is important for the creation and sustainability of high technology industries. A high concentration of skilled labor allows for employment mobility and reduces the reluctance of people moving into a region seeking out new opportunities.

Coastal Investors and Access to Later Stage Capital: Although improving, Wisconsin and in general the Midwest, have not been able to attract meaningful levels of later stage venture capital from the coasts. This lack of coastal later stage VC capital should not be a sign that there are not good opportunities in Wisconsin or the Midwest but that geography and relationships play more of a role than many people believe. Venture capital is a challenging asset class with a high level of risk. In the beginning of an early stage business, technology risk (conceptual stage/prototype development) is very high. VCs use their experiences and expertise working closely with the founder or entrepreneur to mitigate or reduce this risk and build value in the company. Due to the level of work involved, long distances between VCs and the VC backed company can create challenges. As a result, most VCs invest in early stage businesses that are close to home. There are ways however to mitigate the geographic challenge when trying to attract coastal venture capital and it revolves around building relationships. Due to the current environment, there is an opportunity for limited partners to finally gain access so some of the top tier venture capital groups. The ability to invest with some of the premier “branded” venture groups allows LPs to begin building relationships. A knowledgeable and active limited partner investing locally can add value by identifying the most promising local opportunities (likely later stage) and communicating those to the top tier funds where it may fit their focus/strategy. This process would initiate dialogue between the LP, local VC and the coastal VC. As relationships form and trust is earned, coastal VCs

may discover the advantages of investing in the Midwest (great technologies, lower valuations, cost effectiveness of operating a business, etc.).

Serial Entrepreneurs: In the technology centers around the country, the chain reaction really began when successful entrepreneurs reinvested their personal wealth and expertise to start additional new companies. The section above on corporate catalysts gives some indication of this process emerging in Wisconsin. Local serial entrepreneurs include: Brian Wiegand (founder of BizFilings, NameProtect.com, Jellyfish.com and Alice.com), Ralph Kauten (PanVera and Quintessence Biosciences, Inc) and Bill Linton (Promega). Entrepreneurs by their very nature are risk takers and the risks they take can, if successful, create value for themselves and their investors. However, if not successful the company will fail and investors will lose their money. In the Midwest, there tends to be a stigma attached to failures making it more difficult for the entrepreneur to start his or her next venture. Failures, although difficult to overcome, can create opportunities in that the entrepreneur hopefully learned from the mistakes that caused the failure. But as important is the fact that the demise of a company can lead to the formation of other businesses as the knowledge and human capabilities remain and this experience and expertise can be reused. Within Silicon Valley firm failures are part of what has created the success of its venture ecosystem.

V. State Economic Environment

There continues to be much discussion about Wisconsin's economy and its future prosperity. Wisconsin is no longer competing with other states but now is competing globally with other countries. To do this we must be on top of our game. A thriving state economy helps create and attract businesses which will create employment opportunities. At the foundation of a strong economy is the ability to provide high paying sustainable jobs. Feeling that jobs are secure or that there are other opportunities available, individuals will consume (houses, automobiles, food, clothing, etc.) and ultimately locate themselves within a community where they will utilize the services provided such as education, healthcare and, transportation. The quality of life and standard of living within communities having these benefits thrive and attract businesses and people.

Wisconsin is a resilient state with many positive factors in its favor, however there are some areas that need improvement. Over its history, Wisconsin has been able to adapt and prosper moving from a predominantly agriculture based economy to today's specialized manufacturing. The entrepreneurial spirit of Wisconsin's leaders (private and public) has transitioned the state's economy to be competitive globally. Some of the world's premier businesses have come from Wisconsin such as Kimberly Clark, Rockwell Automation, Harley Davidson, Kohl's, S.C. Johnson & Son, Kohler Co., QuadGraphics, Northwestern Mutual and Manpower. Hard work and perseverance has been and is a predominant characteristic throughout Wisconsin. With all the good things that have happened throughout the state over the years we are now facing some challenges. In the "Be Bold Wisconsin" paper, areas of concern have been identified that are leading to Wisconsin's economy falling behind compared to other states. Important statistics cited in the paper include the State's share of national GDP dropping from 2.1% in 1963 to 1.7% in 2008, per capita income dropping 6% below the national average, wage levels dropping to 86% of the U.S. average, manufacturing job losses and other factors that have challenged the Wisconsin's competitiveness in attracting or creating new businesses within the state. The key to creating a thriving and innovative economy will be to establish an environment that is more supportive

of the business sector while enhancing the physical, governmental and educational infrastructure that supports it.

The state's economic health is critically important for improved access to capital and early stage investing. An economy that is conducive to doing business will bring new businesses within the state borders and also promote growth and expansion of existing businesses. Two of the critical factors in creating a successful venture ecosystem are (1) Corporate Catalysts and (2) Access to Capital. An economy that nurtures and supports business will help lead to the improvement of both. As stated previously, a Corporate Catalyst is an established mature company that becomes involved with early stage businesses. A corporate catalyst seeks out companies and technologies that it can acquire to bring into its own operation. There are instances where after multiple acquisitions within a certain area, the acquirer may decide to locate and maintain a presence in that region. Also important are economic incentives or a more competitive tax environment which plays a role when companies are deciding where to locate. An environment that offers these types of incentives will have a greater probability of successfully bringing new businesses into the state. These businesses could be future acquirers and/or long term providers of high paying and sustainable jobs both resulting in a higher quality of life and standard of living. The clustering of technologies also can provide educational opportunities. For instance, printing is an important industry for Wisconsin. A catalyst, QuadGraphics, has been a leader in printing for decades. In an effort to support and create a highly trained workers in fields associated with the printing industry, Quad/Graphics has been a generous sponsor contributing money to the WCTC Foundation to benefit Waukesha County Technical College to sustain the school's award-winning printing and graphic communications program.

Like other states around the Midwest, Wisconsin has put capital to work within the state to promote business activities. Investments from both the private and public sector have ranged from venture capital, loans, and grants into all types of businesses ranging from early stage to mature businesses. Uses of the proceeds range from start-up capital to job creation or retention. As was stated previously, in particular to public funding, a careful and well thought out plan needs to be created to not compete with private capital. Public funding plays an important role in creating an entrepreneurial ecosystem but should focus more on building out or improving the corporate infrastructure and business climate. Public capital should lay the groundwork that cannot be developed with private funding. Much of this public funding in Wisconsin has come through the Department of Commerce and WHEDA laying the foundation for private capital to follow. Historically, Wisconsin has operated under an informal collaboration between private and public groups providing capital for businesses. When one takes into consideration all publically known investments made by various sources (both public and private such as UW-Madison, WARF, URP, State of Wisconsin, private donations/gifts, SWIB, etc.), the total amounts to well over \$1.2 billion of which, over \$600 million is comprised of invested/committed capital from SWIB's Wisconsin Private Debt and Wisconsin Private Equity portfolios. To improve the access to venture capital a stronger, more resilient state economy will help. One of the ways a venture capitalist can exit an investment is through a strategic sale. With the historical venture capital model now in question, the more likely way VCs will realize investment returns will be through M&A transactions; the VC selling the company to a strategic buyer (i.e. a corporate catalyst). An economic environment that can attract established companies into the state increases the odds of having buyers for these start-up businesses and that the target company remains in place instead of being moved out of the state. Improving Wisconsin's economy is something that should not be divided by party or county lines. All stakeholders, both public (including government, research, academia) and private should work

together to continue to improve Wisconsin and its economy. Wisconsin has reinvented itself before, it can do it again.

Conclusion:

We are living in challenging times given the current investment, economic and political environment. As such, the white paper was expanded to consider the current venture environment and investor expectations. Staff's conclusion was that in general, the venture capital asset class should generate good returns from the funds investing over the next couple of years. The capital supply/demand imbalance leading to better valuations, smaller more entrepreneurial focused funds and access to top tier venture groups should translate into better returns.

As raised by this paper, an important component of capital formation and venture investing is the health of the regional economic environment. Key takeaways include that (1) Key advocates for these types of programs tend to be led by the Department of Economic Development or the Department of Commerce. (2) These programs tend to be introduced during period of economic difficulty. (3) The majority of funding for these programs tends to come public sources. (4) Programs provided funding for all needs and company development stages. (5) Economic development and job creation/retention are the primary goals of the majority of these plans and (6) Program transparency is imperative.

Staff continues to believe that there are good investment opportunities in Wisconsin and the Midwest with the main thesis that there continues to be an imbalance between the high quantity and quality of research and development supported in the region and the low levels of venture capital dollars offered for investment making it a highly inefficient market. In addition, the current environment of lower valuations, improved LP economics, the continued lower cost of operating a business in this region and access to top tier venture groups make investing in the venture capital asset class a compelling long term strategy.