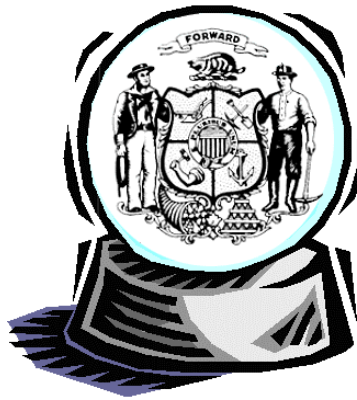


Why Wisconsin Will Thrive in the New Information Economy

Wisconsin's Hidden Entrepreneurship



Wisconsin Economic Summit
Midwest Express Center
November 29 thru December 1, 2000

Bob Weisenberg
President, Northwoods Software Development, Inc.
Co-founder and President, Wisconsin IT Leadership Association (WITLA)

Assisted by **George Blomgren**
Business Development Manager, Northwoods Software Development, Inc.

Summary

There seems to be a widespread belief that Wisconsin has failed to embrace the high-tech "new economy," leaving the future bleak and our state's economic prospects limited.

In this paper, software entrepreneur Bob Weisenberg challenges this stereotype, arguing that the Wisconsin e-business and information technology economy is both more sophisticated and healthier than commonly believed. His perspective is soundly rooted in 25 years of experience growing and managing successful Wisconsin software and e-business companies.

Several commonly cited studies suggest that Wisconsin is technologically (and therefore economically) disadvantaged. In considering these studies, Bob concludes that their methodologies don't even pretend to measure the true degree of e-business and IT innovation occurring in Milwaukee.

Of course, there are still vital additional things we must do to insure Wisconsin's rightful place in the "new economy." But Wisconsin has a solid foundation to build on and, the truth is, we are starting from a position of considerable strength, not weakness.

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Introduction

In discussions about the Wisconsin economy, the prevailing notion seems to be that Wisconsin is an information technology and e-business backwater, and that we are in danger of being left behind in the new "information economy."

I have often questioned the basic premise of this prevailing notion. As a Stanford-educated software executive and entrepreneur who has spent the last 25 years building leading-edge software companies, **all in Wisconsin**, and who is now president of one of Wisconsin's leading internet companies, I have often wondered why the reality I see regarding Wisconsin's technology savvy and entrepreneurship is so different than the image usually portrayed in the press and in casual conversation.

Summary of my conclusions

Here are my conclusions:

1. Wisconsin is **far more healthy and advanced in e-business** and information technology than is commonly thought.
2. Opinions about Wisconsin being behind in the new "information economy" are often based on **deep misunderstandings about what the "information economy" really means**, and misconceptions about the meaning of the studies being cited.
3. Wisconsin is **rich with companies that are making the most of e-business and information technology opportunities**, and creating many jobs in the process.
4. In many aspects of information technology, **Wisconsin has historically been a leader**, not a follower.
5. **There are still many ways in which we can improve** Wisconsin's place in the "new economy." But these efforts should be made with a full appreciation of the considerable strengths we already have, not out of a sense of gloom or panic.

A case history with many lessons for today

When I chose to enter the information technology world in 1975, instead of the public accounting my graduate education had prepared me for, I did so because I was attracted to an exciting, leading-edge technology company called A.O. Smith.

How many people in Wisconsin are aware that A.O. Smith's Data Systems Division was one of the most progressive and forward-looking software organizations in the world at that time? Started as part of A.O. Smith's internal advanced research efforts, the Data Systems Division became so good at what it did that it began selling its services to outside companies, services which included:

- Some of the world's earliest use of computers for planning and controlling manufacturing operations—then known as Material Requirements Planning (MRP), now known as Enterprise Resource Planning (ERP).
- Advanced time-sharing and communications over telephone lines.
- Advanced engineering analysis and design programs, like CAD-CAM and Finite Element Analysis.
- Some of the earliest use of software for advanced financial planning and budgeting.

The Data Systems Division was a hotbed of what was new and exciting in information technology at the time. So hot was it, in fact, that major companies in other industries approached A.O. Smith for its expertise.

In the late 70's, one of the very first on-line ATM-based banking networks, dubbed Take Your Money Everywhere, or the TYME System, approached A.O. Smith to run the complex system at its world-class data center in New Berlin. A.O. Smith also took on responsibility for maintaining the software and marketing it to other interested cities around the country.

By the mid 80's, this Electronics Fund Transfer (EFT) unit had become a large business in itself, had been spun off into a separate company, and had been purchased for its software and expertise by Deluxe Check. Just recently, the name was changed from Deluxe Data Systems to eFunds, and the company is a world leader in the burgeoning field of electronic banking, employing many hundreds of high-tech professionals right here in Wisconsin.

Meanwhile, back in the late 70's, two executives from A.O. Smith's Data Systems Division had split off to create a start-up company to develop some of the first advanced manufacturing software to run on mini-computers. This company, EMS, was on the Inc. 500 list for two years in a row in the early 80's, grew steadily throughout the 80's with the help of a small venture capital investment, went public in 1994, and was eventually acquired by the large Swedish ERP company IFS in 1999. Today, as IFS, the company still employs hundreds of IT professionals in Wisconsin and sells an internet-based manufacturing system.

What are the lessons?

The interesting thing is that most of this advanced technology activity would not appear in the kind of statistics being cited today as evidence of Wisconsin's backwardness in information technology!

Why is this?

There are several reasons.

First of all, these highly entrepreneurial ventures were **funded by large traditional companies** and by funds from operations, so they would not show up on any measures of venture funding activity. Even in the case of EMS, the company was largely self-funding, with only a small dose of venture capital used in the middle years.

Secondly, these ventures, with the obvious exception of EMS, were **part of non-IT companies**, and would generally be classified as “manufacturing” (when a part of A.O. Smith) or “banking” (when a part of Deluxe Check) and not as part of the “information economy.”

Thirdly, even EMS, which is now selling a software product offering the latest internet technology, would probably still not be classified as an “internet” company by the statistics, but as a “manufacturing software” company, and therefore **not included in any “internet economy” statistics**.

In these two fields—manufacturing software and on-line banking software—**Wisconsin has been a clear leader, not a follower**. That leadership began years ago at the dawn of information technology. It was not a “catch-up-with-everyone-else” phenomenon.

That leadership continues to this day. In each case, **the technology leadership of the past has been translated into a leading e-business of today**. And in each case, this leadership is unmeasured or vastly under-measured by many of the technology performance statistics being quoted today as evidence of Wisconsin’s being behind in e-business and information technology.

Not just the exception—many other examples

So, is this just a convincing, but unusual exception to the rule?

Well, in a word—no. **The Wisconsin business landscape is rich with similar counter-examples** to the “Wisconsin as information economy backwater” viewpoint. Without trying to be exhaustive, let’s go through some of them. (Each, if time permitted, could be expanded into a fuller case history, as with the A.O. Smith/eFunds/EMS example).

On-line banking services

Wisconsin is an undisputed national leader in on-line services for the banking industry. In addition to eFunds mentioned above, Wisconsin is also home to Fiserv and Metavante (the former M&I Data Services), both major national forces in the industry.

Both of these outstanding, technically savvy companies, like the TYME system, were outgrowths of Wisconsin’s fertile software development environment of the 70’s and 80’s. And both of these companies would fall outside the scope of many statistics about the information economy because of their very close association with the banking industry.

In the case of Fiserv, the company has grown by leaps and bounds through an aggressive acquisition program. Metavante was just recently spun off by M&I Bank to increase its visibility and its valuation, and is planning to add thousands of new technology jobs in the next couple of years alone.

Investments, finance and insurance

Strong Funds boasts one of the most advanced on-line investment offerings in the industry, employing hundreds of internet and IT professionals in its Wisconsin offices.

MGIC, the world leader in mortgage insurance, recently created a new division named eMagic to take its services on-line.

Does anyone realize that a significant percentage of brokerage houses use software developed in Milwaukee by Beta Systems?

How about the personal investment tracking system sold nationally under its own label by the National Association of Investment Clubs? It was developed here in Wisconsin by a small company called Quant IX.

Retail and distribution

Lands' End, one of the world's leading catalog retailers, has quietly become one of the largest and most profitable on-line retailers. However, Lands' End bucked the trends at the time and developed its dot.com division as an integral part of its regular operations. And it recruited its leading-edge web development staff almost entirely from within Wisconsin!

Even today, as one of the most visited sites on the web, Lands' End would not show up on many statistics attempting to measure Wisconsin's position in the new economy because, like so many of these other examples, **it was done as part of an existing company, was not set up a separate dot.com, and was funded without any venture capital.**

On the other end of the spectrum, icanshoponline.com is a thriving new internet company that provides very low cost e-commerce services to retail stores. It is planning to build on its local success by going national.

Direct Supply, located in the heart of Milwaukee, is a leading national on-line distributor of supplies to the nursing home industry. Like Lands' End, Direct Supply developed its extensive on-line business as a natural outgrowth of its traditional catalog business, and therefore does not show up on any internet economy radar screen. Plus the company is privately held and very cautious about giving out information, so as not to reveal its operational secrets to its competitors.

Mark Travel is a large travel services company that has become a national leader in software and internet services for on-line travel and vacation sales.

Arrow Products is a distribution services company that has been serving major retailers for years, and has taken its expertise in EDI (electronic data interchange—the forerunner of business-to-business e-commerce) and applied it to the internet.

Another small company example is Genius Supply, a school supply company that has added full e-commerce capabilities to its traditional catalog business.

Buycostumes.com is another small dot.com that has received a lot of national recognition recently for forecasting presidential elections based on the sale of the two candidates' masks! Their web site boldly states that "Every election since 1980 has been predicted by rubber mask sales," then urges the viewer to "Cast your vote for only \$9.99"! Now that's what I call creative marketing.

Record Research is a small Wisconsin company that has produced books tracking the Billboard Top 100 lists for over 20 years. Today it is working with Billboard to make this content available on the web.

Other leading software companies

Did you know that Wisconsin is a world leader in advanced warehouse management software? Catalyst, McHugh Software, and HK Systems, all leading players in this market, as well as a number of smaller companies, all grew up in Wisconsin. They sell their software to Fortune 1000 companies throughout the world, employ hundreds of high-tech professionals in Wisconsin, and they are all heavily involved in the e-business revolution.

Wisconsin is home to many other leading software companies, including:

- Metrix—field service and product service CRM.
- Rockwell Software—industrial control software.
- Penta—construction industry software.
- Biber & Associates—software for food cooperatives.
- Innovative Software—systems management software.
- Pkware—software for compressed file transfer.
- Advantage Learning Systems—education software.
- IHS—software and services for the pharmaceutical industry.
- And many others.

Traditional businesses effectively using internet technology

Wisconsin is also rich in traditional companies that are rapidly implementing leading-edge, world-class e-business initiatives on the internet. These include Briggs & Stratton, Harley-Davidson, Manpower, Johnson Controls, Rockwell Automation, G.E. Medical Systems, Miller, and United Wisconsin Services/Blue Cross-Blue Shield.

This is just a small sampling. There are many, many more—almost every major corporation and countless small and medium-sized companies.

Internet and IT support services

Wisconsin is blessed with strong array of e-business and IT support services. Since these companies are all providing leading-edge IT services to Wisconsin companies, their very existence shows the strength of Wisconsin companies' involvement in e-business and advanced information technology.

The most striking IT entrepreneurial success story is CPU (Computer People Unlimited), which grew from scratch starting in the mid-eighties to become the largest IT Staffing organization in the state. CPU employed hundreds of employees, consistently making money and without outside financing, by the way. The company was then sold to one of the largest software companies in the world—Compuware—and

is, to this day, one of Compuware's largest and most influential centers for e-business and IT services.

CPU has not been alone. Other Wisconsin companies in its class include Stratagem, Omni Resources, DASD (sold to Cap Gemini), TCC, and others. Other services companies from outside the state have some of their strongest offices here in Wisconsin, including Greenbrier & Russel, IBS, Keane, MarchFirst and Born. These companies, while coming from the traditional IT world, and therefore not included in any internet economy statistics, are all rapidly becoming e-business services companies. These companies have always adjusted quickly to provide the IT services being demanded by their customers, and today that is e-business.

The large national consulting firms, most prominently Arthur Andersen and EDS, have also moved aggressively into e-business services. (The new branch manager for EDS recently told me that EDS already employs over 400 people in Wisconsin, even though they have only recently opened a sales office here.)

In addition, a whole new crop of IT services companies has sprung up in Wisconsin, many of them entirely e-business related, and most of them without venture funding. Among them are:

- Tushaus Computer Services—a major supplier of hardware, networking, software, and internet services to a wide variety of Wisconsin companies.
- Berbee—a strong Madison-based hardware, networking, and internet services company, best known for hosting the giant Lands' End e-commerce site.
- Northwoods Software Development—my own company, which has become one of Wisconsin's leading web development companies, best known for its leading edge work for Briggs & Stratton.
- Digital Visions—an excellent interactive development company in Milwaukee's Third Ward.
- Spectracom—also in the Third ward area, with prestige Fortune 500 web site customers from all over the country.
- Millennium Partners—a high-quality IT and e-business consulting firm with Big 5 roots.
- TSR Solutions—a full service computer and internet services company.
- Heartland Software—an internet and software development company.
- Softgear—the internet development company headed by the leader of e-Innovate.
- Allied Computers—a long-time leader in hardware and networking.
- Sun Tzu Security—a new firm devoted exclusively to IT security services.
- ExecPC—sold to a Michigan company in 1998 after becoming the largest Internet Service Provider in the Midwest.
- A large number of internet service providers and communications firms like Alpha.net and Norlight Telecommunications.
- Techskills.com—a rapidly growing nationwide technology training and certification company.

- And many others too numerous to mention.

Would you be surprised to learn that Homestore.com, the nation's leading on-line real estate site, does all its custom web development for its clients around the country right here in Milwaukee through a subsidiary called The Enterprise?

Progressive advertising and marketing companies

Last, but not least, Wisconsin's most progressive advertising and direct marketing firms are making internet services and consulting an integral part of their offerings. As in all the other areas above, there are many of these, large and small. Among them are:

- Laughlin Constable—a major Wisconsin-based full service ad agency.
- DCI—A large Wisconsin firm providing interactive marketing products to Fortune 1000 customers throughout the U.S.
- AB Data—a leading provider of direct marketing consulting and services to non-profit and political organizations.
- NuEdge Systems—a direct marketing and database analysis company offering customized marketing initiatives.
- Firstlogic—another strong direct marketing company, based in LaCrosse.
- USAV—a leading audio-visual production firm with strong interactive capabilities.
- Hunter Business Direct—a business-to-business direct marketing consulting firm.
- E-commandos—a small internet strategy and marketing created by the former president of ExecPC.
- Hoffman York—another of Wisconsin's most prominent agencies.
- Hughes Ruch Murphy—a progressive marketing communications firm with an excellent interactive division.
- Hansen Dodge—a full service agency with excellent interactive capabilities.
- Monfre Acott—a strong small interactive agency.
- And many others.

What does the "new economy" really mean?

But wait, you might say. Very few of these examples are "dot.com start-ups" which some analysts say will be the heart of the "new economy."

This question is much easier to deal with today than it was before the "dot.com crash" earlier this year. Much of the panic surrounding Wisconsin's place in the new economy is fueled not just by a misunderstanding of the numbers, but also by the notion that the health of a state's economy will soon depend on how many new, venture-funded internet-based companies it can attract.

Today, in contrast, even many of the on-line icons of the new economy are in deep trouble. A recent cover story in Business Week even called into question the viability of mighty Amazon. There are many people who believe that Jeff Bezos will someday be known not as Time's Man-of-The-Year, but as the greatest huckster of all time—spending billions of dollars of other people's money while never returning a penny except to himself and to those who played the stock successfully.

Wisconsin is not without its e-business and web start-ups. The flood of applicants seeking seed money from the newly formed angel investment groups is ample evidence of that, and I won't begin to try to catalog them here.

But it is true that Wisconsin's brand of e-business and IT entrepreneurship is, relatively speaking, conservative—based on the old-fashioned notion that you have to make a profit on your investments in new technology. But entrepreneurship it is, nonetheless, and a very powerful entrepreneurship at that.

Let me explain further...

Dueling gurus

There are some futurist gurus who believe that the internet changes everything we once held dear about business success and that Silicon Valley is the heroic vanguard of the new economy.

Under this point of view, any person or business that doesn't throw out the old and bring in the new will be left behind, and we should all be worried about whether we can change enough to survive the internet revolution. The internet and related technologies will fundamentally change business (and even humanity itself according to the more extreme forecasts).

If these assumptions were true, it might make sense to judge the health of whole state's information age economy based on the number of dot.com start-ups, the number of internet IPO's, and the volume of venture capital invested. But Wisconsin may be happy not to be dependent on these types of types of entrepreneurship by the time the current dot.com shakeout has run its course.

Dan Burrus, world-renowned futurist and author of Technotrends, has a very different point of view that supports Wisconsin's brand of information technology entrepreneurship. Burrus, in an electrifying speech at a recent Wisconsin conference on e-business, presented the following counter-arguments to the idea that the internet obsoletes every business approach that came before it:

- The internet is a **utility type of revolution**, not a transforming revolution, more like the telephone than the printing press.
- Internet technology will be **blended with ordinary business** in a way that no longer makes it a separate concept.
- For that reason **the very term "internet economy" doesn't make any sense**, and will be obsolete in the very near future.
- Don't worry excessively about the internet; just **integrate the new technologies with your long-standing core values** in a way that creates additional value for your customers.
- There are other revolutions, going on right now, that will have far deeper impact on humanity than the internet and information technology, such as biotechnology and artificial intelligence.

(By the way, it may not be wholly accidental that this particular world-renowned futurist is from, where else—Wisconsin.)

My own stump speech

In my own speeches, I have long been trumpeting a similar theme.

First I compare and contrast the internet revolution to the other major information technology breakthroughs that led up to it over the last twenty-five years:

1. Interactive computing.
2. On-line transaction processing and on-line services.
3. The personal computer.
4. The internet in scientific and university circles.
5. ERP and other “packaged software.”

Next, I point out that Wisconsin has been very active, sometimes in the very forefront, of three of the above five revolutions (Numbers 2, 4, and 5). I then conclude that **internet mania is a temporary phenomenon**—this will no longer be a hot topic a couple of years from now!

Web technology is **quickly becoming mainstream**, and traditional IT methods and values are rapidly infusing the web development world. The internet will be **yesterday’s revolution**, just like the other five above, but, in this case, it will happen in “internet time.” Most business transactions will be conducted over the web and it will be as pervasive as the telephone is today.

It is true that some industries will be transformed by the new medium (e.g., the music business). **But most companies will thrive on very traditional approaches to doing business, enhanced by the new web technology.** The companies that are creations of the new web technology (like Amazon), will be increasingly subject to traditional business values. And some of the most successful companies will be those that successfully blend the traditional and the new (like Lands’ End). As always, there will be terrific variety, even within the same industry.

Therefore the type of e-business and information technology entrepreneurship we have in Wisconsin—that is, deeply connected to our existing business and economic strengths—is actually the wave of the future, not the past.

What does Wisconsin need to get better at?

Does this mean everything is just fine in Wisconsin and we don’t need to do anything differently?

Of course not.

I’m not questioning the basic information in the formal studies like Milken (see Appendix 1), but rather the use of narrowly based studies to draw very false conclusions about Wisconsin’s overall strength in the new information economy. The studies do show, accurately, I think, that:

We need more angel and venture capital, and more channels for matching them with entrepreneurs (see Appendix 2).

We need more new companies and risk-taking entrepreneurs, and we need programs to encourage them.

We would like to see more Wisconsin companies being the acquirer, like Fiserv, rather than the acquired, like CPU/Compuware (even though, in most cases, out of state acquisitions have resulted in far more technology employment in the state, not less).

We do need to continue to work hard to attract our information technology graduates to work for Wisconsin companies.

We do need more government, education, and business cooperative initiatives.

The Wisconsin Economic Summit itself is devoted to identifying and promoting all the things we need to do to make Wisconsin as successful as it can be going forward, not just in e-business and information, but for the whole economy. The other papers in this Summit explore this challenge.

But, in the case of e-business and information technology, we also need a new appreciation of the considerable strengths Wisconsin already has, so we don't get "psyched-out" by misleading conclusions from narrow studies.

Conclusion

Since I stated my conclusions so clearly at the beginning, just let me repeat them here:

1. Wisconsin is **far more healthy and advanced in e-business** and information technology than is commonly thought.
2. Opinions about Wisconsin being behind in the new "information economy" are often based on **deep misunderstandings about what the "information economy" really means**, and misconceptions about the meaning of the studies being cited.
3. Wisconsin is **rich with companies that are making the most of e-business and information technology opportunities**, and creating many jobs in the process.
4. In many aspects of information technology, **Wisconsin has historically been a leader**, not a follower.
5. **There are still many ways in which we can improve Wisconsin's place in the "new economy."** But these efforts should be made with a full appreciation of the considerable strengths we already have, not out of a sense of gloom or panic.

Biographical information

Bob Weisenberg

Bob Weisenberg is a veteran software industry executive who is now president and 50% shareholder of Northwoods Software Development (www.northwoodsoft.com), one of Milwaukee's leading internet consulting and programming companies. He is also the president of the Wisconsin IT Leadership Association (WITLA—www.witla.com), Wisconsin's trade association for e-business and information technology companies.

Bob began his career in public accounting, but soon was attracted to the software industry, first with A.O. Smith's Data Systems Division and then as one of the first four owners of manufacturing systems startup Effective Management Systems in the early eighties. EMS grew to become one of the leading providers of ERP and factory automation software in the U.S., and in 1994 became Wisconsin's first publicly traded software company.

Bob served as Director of Marketing for EMS during the years when it was on INC. magazine's "INC.500" list of fastest growing companies in the country. Subsequently he served as the President of EMS' largest operating division and then as Vice President and General Manager of EMS during the years in which it became a publicly traded company. After leaving EMS to join Northwoods in 1998, he remained on EMS' Board of Directors and a major stockholder until EMS was acquired by the major European ERP company IFS in 1999.

E-mail Bob at bob@northwoodsoft.com.

George Blomgren

George Blomgren is a Business Development Manager at Northwoods Software. He brings an exceptional degree of hands-on skill to this client-focused challenge, and focuses on clients who most benefit from a high degree of guidance, particularly in design and marketing.

Prior to joining Northwoods, George served as the webmaster for Kohl's Department Stores. In this role, he helped set strategic direction, and designed and developed almost all of Kohl's websites. He worked periodically with outside vendors, and knows first hand what it's like to be on the client side of the desk. Prior to that, George's experience ranged from graphic design to the catalog industry, multimedia production to management consulting.

Completing an MBA from Cardinal Stritch University, George spends a great deal of time working with Goodwill Industries' AbILITY Connection Program, and other civic and professional groups. He speaks professionally on many computer and internet-related topics.

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Appendix 1—Notes on the Milken study

The Journal Sentinel recently cited a 1999 study by the Milken Institute, giving Milwaukee a low ranking among high-tech urban centers in America. (Journal Sentinel, 6/24/2000)

The ranking cited in the Journal Sentinel was for “real output” of what Milken defined as key “technology” sector companies in American cities.

Looking at the criteria used to determine these ranking not only calls into question whether it truly captures the reality of Milwaukee (and by extension Wisconsin’s) ranking in the “new economy,” it also offers insight into Milwaukee’s low ranking. And, it supports the idea that generalized, negative notions of Milwaukee’s place in the new economy are based on criteria biased in favor of purer “high-tech cities”—a quality that doesn’t necessarily promise long-term economic stability and prosperity.

Any attempt to quantify “high-tech” is challenging at best. What constitutes “the latest technologies?” How should they be weighed/measured? As hardware, software, services, salaries, investment, output, or some complex formula measuring these and other dimensions? Can data on which to base such a study really be obtained in a thorough, recent, accurate and reliable manner? And, should the study be applied to traditional businesses, or just those which have emerged as the vanguard of the new economy? (Or, in the case of Milken, just to a carefully selected group of sectors.) The decisions made regarding these questions, of course, will dramatically impact the conclusions drawn.

Also, Milwaukee was defined as Milwaukee-Waukesha, which raises the question as to whether other outlying communities were considered, including some potentially key cities north and south of Milwaukee’s formal borders. (The paper presents a theoretical breakdown of geography & economic analysis, but never specifies how the specific “city units” are defined.) Furthermore, the report openly admits that the specific criteria used for this breakdown favor larger cities.

This is just one matter in which the criteria, definition and choices of what to include in rankings is subject to debate. The report is not an exhaustive study encompassing all sectors of the economy, and it leaves out many traditional industries that are creatively reengineering with the latest technologies. The Milken report specifically identifies certain sectors as “high-tech” barometers, and ranks their host cities accordingly, in an attempt to determine which cities might be described as having an inherently “high-tech” orientation.

In fact, even the Milken paper’s author questions generalized inferences which might be (and have been) drawn from the paper—“There might be a just a little too much euphoria out there in looking at technology and economic development... I’m a big advocate of what the technology sector can do, but there are some problems festering down below.” (Christian Science Monitor, 5/28/99)

A report more favorable to Milwaukee (we believe) would examine how the full range of business sectors utilize new technologies. We do not accept that only the business sectors included in the Milken report are critical to the future economy.

This is not a criticism of the Milken report, which is really trying to measure something else. Rather, it is a criticism of those who use the Milken report as a basis to dismiss Milwaukee’s current and future levels of innovation, prosperity and readiness to embrace the a quickly-changing economy.

Appendix 2—The Wisconsin investment environment

Many technology start-ups complain seed capital is not available, although the recent demise of many dot.coms and drops in the NASDAQ make this a widespread problem (as well as an understandable one.) This problem is already being aggressively addressed by local entrepreneurial groups, including one that has recently garnered a great deal of attention in Milwaukee—Silicon Pastures.

There are at least three other angel networks in Madison, and hints that more may be forming in other areas of the state. E-Innovate is a dynamic networking organization that brings together investors, high-tech innovators, and professional support. Milwaukee government has teamed up with the Metropolitan Milwaukee Association of Commerce (MMAC) to form the Metro Milwaukee Technology Alliance this year, already claiming nearly 200 members.

Many point to the biotech industry, a high-tech sector that has fared better in Wisconsin, as a model for what needs to happen with information technology. State funding, private sector investment and the UW System have teamed up to make some strong commitments. Support from state and national government will be important to the e-business and information technology sector as well.

Appendix 3—The Wisconsin IT Leadership Association (WITLA)

The WITLA is the trade association for the Wisconsin information technology and e-business industry. This new association has attracted leaders from twenty-five of the most influential firms as its board. It's main purpose is to help create a healthy environment for the industry in three key areas:

1. Economic—promote and develop the IT and e-business industry in Wisconsin.
2. Professional—promote professional, educational, quality, and ethical standards for the industry.
3. Legislative—work for a legislative environment favorable to the success and growth of the industry.

The WITLA works closely with organizations that have related objectives, such as the MMAC, e-Innovate, the Wisconsin Department of Commerce, the State Bar, and the Wisconsin Economic Summit Group.