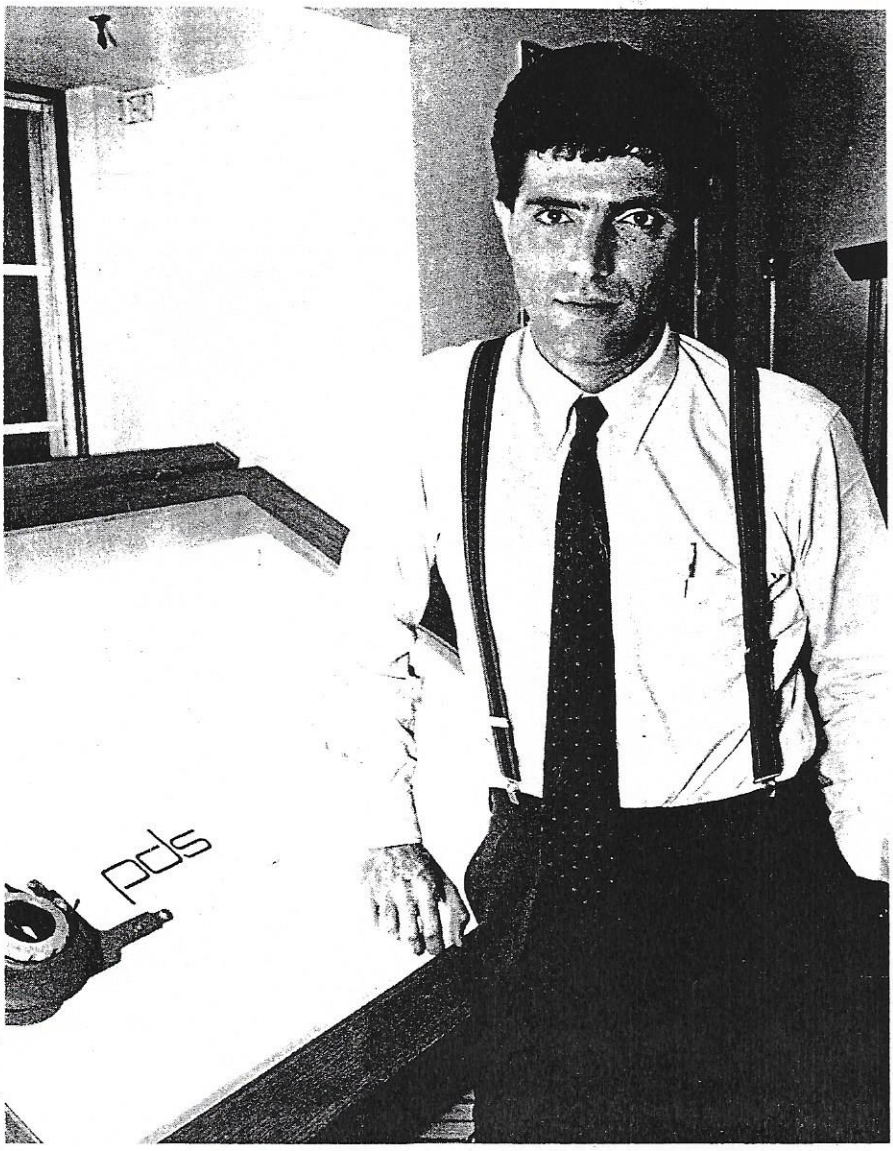
PROTOTYPE

For A Successful Business



Morry Gash photo

PDS assists industry in design and development of products, evaluates marketability and aids in patent searches. Pictured is company founder Bruce Winkler.

For PDS the first three years have been growth years, with potential for continued expansion in the high-tech field.

by David Tenenbaum

Ambition, enthusiasm and curiosity reflect nicely in the bottom lines of this young business. In its second year of operation, Prototype Design Services grossed $520,000, and Bruce Winkler expects the business to gross $1 million in 1987. All that, he proudly notes, on start-up expenses of $1,000, and with just three full-time employees.

There's no denying that this 27-year-old has done good business by following his curiosity and enthusiasm. The biggest success in the three-year history of Prototype Design Services—he prefers PDS—is a machine that "welds" together fragments of the

genetic material DNA. The device, called an electroporator, is marketed to major cancer and genetic engineering labs around the world.

Though the electroporator has become bread and butter for PDS, the involvement in gene-splicing began by a lucky coincidence. Winkler had worked for Radio Shack while attending the UW-Madison College of Engineering. Though he no longer worked at the store, when he saw a customer searching the shelves, he offered to help. After discovering that the man, a plant pathologist for the U.S. Department of Agriculture, wanted an obscure electronic part, further inquiry revealed that he was building a new device to analyze DNA.

Though Winkler had neither experience nor ambition in genetic engineering, "in two months," he says, "I had scored a contract with [the] USDA to build some analyzers."

One contact in genetic engineering led to another. Winkler teamed up with Oliver Smithies, a UW geneticist, to build the electroporator. Winkler has a patent pending on the machine.

The favorable coincidence strengthens Winkler's contention that it's the quick flow of information that keeps his business alive. "Technology transfer depends on communication. Being aware of resources is critical—you can miss opportunities to use the tremendous resources in this town," he says.

If the electroporator, or "zapper," as it's known around the South Park Street shop, is PDS' hottest product, Winkler also has a comfortable niche refurbishing computer parts. He says the economics are compelling because components such as lasers and printer rollers are quite costly, and only a few companies handle the majority of mainframe computer repair in this country.

Computer refurbishing involves some high-tech problems. To help align the lasers used in high-speed printers, Winkler sought advice from James Lawler, a UW-Madison physicist. Winkler reports that like other UW consultants he hires, Lawler was accessible and his advice was "well worth the money."

Although it's quite profitable, refurbishing computers is not the kind of work for which Winkler organized PDS. The firm also profits from creating prototypes for other companies. Some are simple mechanical gadgets such as a fold-up plastic shaver, a futuristic egg-timer or a spill-proof coffee-cup holder for cars.

Other prototypes require Winkler's electromechanical expertise. They include complicated assemblies under subcontract from companies such as Ohmeda, the Nicolet, Inc. Analytical Division, and Winkler's former employer, Motorola, Inc. Many of these contracts, Winkler explains, result after companies "bite off more than they can chew" and don't want to hire temporary staff.

If Winkler is sailing smoothly in the business world, he had a bit more difficulty with Madison's academic side. Born in New York and raised in Skokie, Ill., he spent five years in a mechanical engineering program at UW-Madison which required two years' industry work. Winkler recalls helping Motorola, Inc., in Schaumberg, Ill. design a device to program computer chips for auto engines. Though he began on the lowest rung of the ladder, he says he was soon in charge of "all ends of the project." That practical education was more attractive than the "books and beer" atmosphere at UW. "I was not able to apply myself to a classroom," he admits.

It's been three years since Winkler left that classroom. The recently expanded PDS headquarters, at 321 and 327 Island Drive, are crammed with electronic gear. Along one wall, one of PDS' three Macintosh computers runs "all the time." The machine handles all the office correspondence, but more importantly, Winkler uses it to draft schematic drawings.

Though Winkler is a fledgling businessman, he has already learned some lessons about getting started. One key to his company's agility in the market, he explains, is contracting for services and components from other companies. He assembles the "zappers" from components made by two Madison firms. To keep overhead low, part-timers do the work. Winkler can then concentrate on design and the opportunities of a changing market.

On running a new business, Winkler says, "There are so many things working against you—your youth and lack of track record. I have to make sure my shoes are shined—I don't have the luxury of wearing jeans on the job. Maybe in 20 years I will."

The responsibilities of owning a business are evident as well: "It takes you years to build up a business, but only one reasonable miscalculation to bring it down.

"Too many people think entrepreneurs are just interested in equity. I think we're most interested in control, in working for ourselves, in the opportunity to interact with others. But spike that with a bit of ego."

Though many PDS projects are for big names in the electronics field, it does make some one-of-a-kind devices for the handicapped. "I think people who are in business have some kind of obligation to help the community," Winkler maintains. Some of the rehabilitation projects come from the Madison public schools, others from engineer Ricardo Cerna of the State Department of Vocational Rehabilitation. Though the rehab devices are not inexpensive, they are not very profitable either, Winkler admits.

He has been to Washington, D.C. to help judge Small Business Innovation Research grants for the National Institutes of Health. He also helps the Wisconsin Innovation Service Center at the UW-Whitewater evaluate ideas for new products. In May he toured the Orient for three weeks of discussions with possible overseas markets for PDS and other Midwestern firms.

If the United States is indeed marching towards an information society, Winkler could be an archetype of the new generation of entrepreneurs. He makes the work look interesting, and he makes it profitable. ■

David Tenenbaum is a Madison-area free-lance writer.

High tech whiz carves out niche

By Jonathan D. Silver
The Capital Times

Back in 1983, Bruce Winkler enjoyed a reputation among Madison electronics stores as a regular Mr. Fixit.

"Half the Radio Shacks between downtown and the west side were willing to recommend me," recalls Winkler, 32. "They'd have my card literally taped to the counter by the cash register."

If a customer was in need and Radio Shack couldn't help, Winkler was the man to do the job, as he tells it.

He wasn't just out to earn a few bucks, though. Armed with a background in mechanical engineering and a keen interest in cutting-edge technology, Winkler had the loftier ambition of eventually owning his own business.

"I did anything I had to do in the beginning to survive," he says.

Winkler survived, all right.

Today, he's president of Prototype Design Services Inc., a high-tech consulting firm that pulls in annual revenue of between $1 million and $5 million.

Companies around the country pay PDS to design or make products for them, ranging from the mundane (computer software) to the artistic (wood-burning pens) to the downright weird (giant fake islands for Sea World).

Either these companies don't have the resources to do the work themselves, or they don't want to invest heavily in developing them. They want to stick to the business they know best — and contract out for the rest.

"Companies are learning in the '90s that they're better off focusing," Winkler explains. "Companies have typically got themselves into trouble by being everything to everybody."

As the 1980s' trend to diversify wilted in corporate America, Winkler's business prospects

Continued on Page 6B

RICH RYGH/THE CAPITAL TIMES

Bruce Winkler: "We tap into the wealth of technical knowledge at the University and in Madison."

blossomed.

For instance, when Cleveland-based Glidden Co., a major U.S. paint maker, wanted to start sending crucial information to thousands of distributors using computers instead of paper, Winkler helped make the switch.

"They weren't a computer company, and they weren't about to bring those talents in-house," he explains.

So Prototype Design Services came up with a computer that could easily instruct distributors how to mix paint to make different colors, replacing the primitive method of hunting for a formula buried amid reams of paper.

Now "they'll send one of these to every location," Winkler says, whipping out a black computer disk from his shirt pocket.

In addition to contracting with corporate titans, Winkler spreads his company's know-how locally.

Madison's DNA Star Inc., a small firm that designs computer software used by molecular biologists, uses PDS to make the hardware.

"It's just not economical . . . to go into the hardware manufacturing business," says Gerald Miller, DNA's development manager. "A company such as PDS is ideal for a company like us."

And a university town like Madison, a hotbed of scientific entrepreneurs and researchers, is an ideal location for PDS.

"We tap into the wealth of technical knowledge at the university and in Madison," Winkler says. "We're very much a networking company."

Winkler's base of operations is his third-floor, gadget-strewn office on Capitol Square (complete with mahogany desks whose tops flip up like attache cases). From there, he leads six full-time employees and farms out jobs to several dozen scientific specialists, offering work to the ones most suited to a particular job.

It's not hard to believe that networking is one of Winkler's strong suits: He smiles constantly; he values communication; and he has the energy of a hyperactive puppy.

And although he speaks with the ebullience of an eager-to-please salesman, Winkler tempers his words with an undercurrent of genuine enthusiasm and technical understanding about the products PDS makes.

Winkler's zeal is plain outside the office, as well.

"If you've interviewed him, you can probably catch some of his enthusiasm. He's extremely energetic and creative," says Georgia Heise, executive director of the Madison Children's Museum, where Winkler is a director.

"He's sort of a big kid himself."

Heise credits Winkler with creating a balance on the museum's board. As someone with a hardcore scientific background interested in teaching children about technology and science through exhibits, he serves as a counterweight to the other directors, who include lawyers, bankers, teachers and politicans, Heise says.

As the president of a start-up business, one might expect Winkler to devote most of his waking hours to PDS. That's not the case, though.

"I'm not gonna go nuts. Life is too short to go nuts," he explains.

Winkler's work with the Children's Museum, for instance, is one diversion he wholeheartedly embraces.

"We just rank so low in the international marketplace that more people have to take a stand that kids learn science and physics," he says. "For me, the Children's Museum is a wonderful vehicle to put my time into . . . to make a difference."

Despite his upbeat attitude, it hasn't always been smooth sailing for Winkler and PDS. Falling into the same trap as many companies in the 1980s, Winkler marched PDS straight into debt.

"We're still suffering some reverberation from past debt. Had I to do it all over again, I clearly would have done it a lot differently."

Although that perspective came from firsthand experience, not every entrepreneur needs to suffer: Winkler says he has no qualms about lending a guiding hand to people now in the position where he was a decade ago.

"Quite often an inventor will come in with a new idea and I'll give them the time of day," he says. "I'll look to try to be a resource for anybody."

BUSINESS

■ 'Companies are learning in the '90s that they're better off focusing.'
Bruce Winkler

Small beginnings, big plans

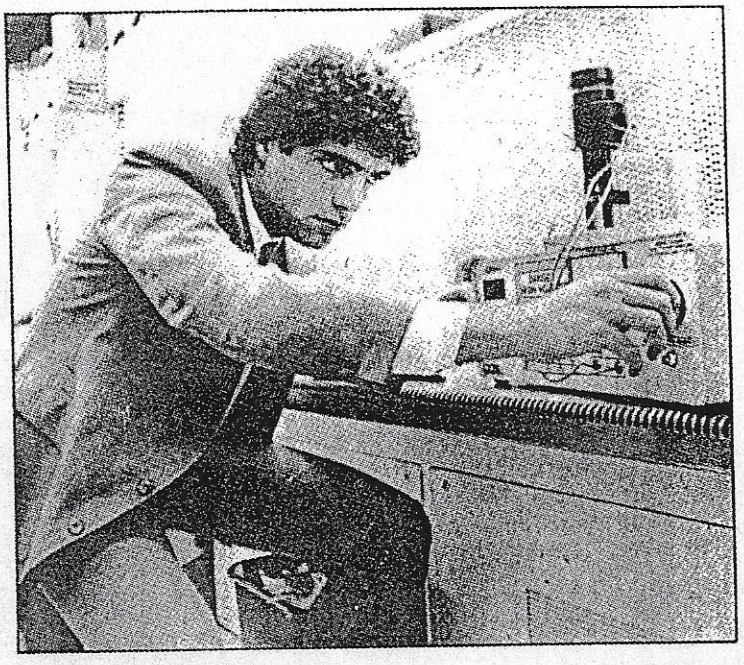
By Chuck Martin
Economics reporter

Bruce Winkler puts the past two years at PDS Inc. this way: "We've grown from an extremely small corporation into a very small corporation."

That might not sound like much of an accomplishment, but for Winkler, 26, it is. Two years after he started PDS with a tiny amount of experience and an even tinier amount of money, he has reason to believe he'll succeed.

Sales have risen from $50,000 the first year to $500,000 the second year. The company's customers are now in 37 states and 11 foreign nations, and a recent contract promises further growth.

How Winkler has turned PDS from an idea into a growing business is an example of how a lone entrepreneur can beat the odds and enter the expanding world of high technology.



Bruce Winkler, president of PDS Inc., tests one of his company's gene 'zappers' at Agracetus in Middleton.

—State Journal photo by Carolyn Pflasterer

The idea

Winkler was working for the Motorola Corp. when he concluded he wanted a career with greater challenge.

"I decided to start my own business," he said.

Based on what he had learned as a UW-Madison engineering student, he believed he could sell his expertise to other businesses needing help in designing products or equipment. He called the business Prototype Design Services.

His customers would be primarily in the high-technology industry — the growing world of computer- and research-related businesses.

He admits he was long on ambition and short on experience.

"I really didn't have a very complete idea of what I was getting into," he said.

The opening

Winkler was a customer in an electronics retail store when he made a connection that produced his first job.

While in the store he struck up a conversation with another customer. The other customer turned out to be an official of the U.S. Department of Agriculture. The chat led to a contract for a new kind of gene separation device.

Winkler's first big contract came through a chance meeting at a musical jam session. At the session, a conversation with an employee from the Nicolet Instrument Corp. of Madison established a connection that got Winkler a design job from Nicolet, a producer of electronic measuring devices.

In the beginning, however, contracts were rare. To make ends meet Winkler installed alarm systems and did other odd jobs.

As a struggling beginner, Winkler was unable to present the kind of image that a successful competitor might present. That worried him, he recalled. When he met with Nicolet executives, for example, he parked four blocks away so his customers would not see him emerging from a rusted, old car.

The growth

Last September UW-Madison geneticist Oliver Smithies bought an electronic device that Winkler designed. The two met and Smithies mentioned that he had a problem.

He had developed an improved method of injecting DNA into cells for experiments. The method was based on a device that sends out a pulse of electricity, which causes a cell in a test tube to expand. The expansion allows DNA to enter the cell.

Other scientists wanted to use the method, too. Smithies, however, lacked the capability to produce the device in large numbers, and he needed to solve some design flaws before offering the equipment to others. He asked if Winkler would be interested in working on the project.

Winkler agreed.

Today, PDS has sold 35 of the instruments, nicknamed zappers.

Winkler has hopes to increase sales through an exclusive distribution agreement with the Promega Biotec company of Fitchburg.

The help

Winkler joined the Madison Area High-Technology Consortium, an organization of high-technology companies and entrepreneurs seeking entry into the industry.

The consortium, which meets regularly, was the base for a network that has been a central element in his success, he said.

"It's absolutely crucial that you have a network to work with when you need it," he said.

Through a network of people in the high-technology industry, he said, he has been able to find customers. The network, for example, referred to Winkler an executive from a Detroit research company who was looking for help in designing a new kind of video game for a New York company.

Also through the network Winkler has found expertise he lacked. It is common for Winkler to need help in solving customers' problems. In cases where help was required, the network has produced someone with the needed skills.

One of the problems Winkler needed help with was the organization of his own business. The network produced an adviser — Gregg Johnson, president of Johnson & Co. of Middleton and a business consultant.

Johnson helped Winkler learn how to negotiate contracts. He also has been advising Winkler on how to make the company grow as quickly and efficiently as possible.

One of his first pieces of advice was for Winkler to use the company's initials PDS, rather than the name Prototype Design Services. The initials were easier to remember and not so limiting of the company's scope, he said.

With Johnson's help, Winkler has set up a personal advisory team — a lawyer, an accountant and a banker. He is assembling a board of directors.

The money

"I started the company with basically no money," Winkler said.

He has financed the company's growth through sales and ordinary bank loans.

Johnson called the financing "atypical" and noted that most fledgling companies, especially in the high-technology field, gain financing help from investors who hope to profit as the company grows.

Winkler said he might require investment money for future growth, but for now he's doing fine.

The future

Winkler expects PDS to keep growing. A central element in the growth, he said, will be UW-Madison.

"It's technology transfer," he said. "The university has lots of excellent ideas. A business like this can work with university professors to transfer those ideas out into the marketplace."

The university also contains experts who can help PDS solve problems and improve, he said.

Winkler continues to negotiate contracts with customers ranging from International Business Machines to the Madison Metropolitan School District. He has changed the company from a sole proprietorship to a corporation and foresees opportunity to grow further.

"The sky's the limit," he said.

WISCONSIN STATE JOURNAL

Thursday, October 6, 1994

Madison company's product puts added stress on cash

Money mangler tests durability of U.S. dollars

By Paul Johnson
Assistant business editor

The U.S. Forest Products Laboratory is teaming up with a local company to help the Treasury Department try to do what we all want to do: Keep our cash around a little longer.

To do that, Prototype Design Services is helping create a machine that abuses money. That's right. Abuses it.

The U.S. Treasury's Bureau of Engraving and Printing currently uses a "crumple test" to simulate the wear and tear a bill goes through, but the Treasury has been looking for a more reliable test of durability.

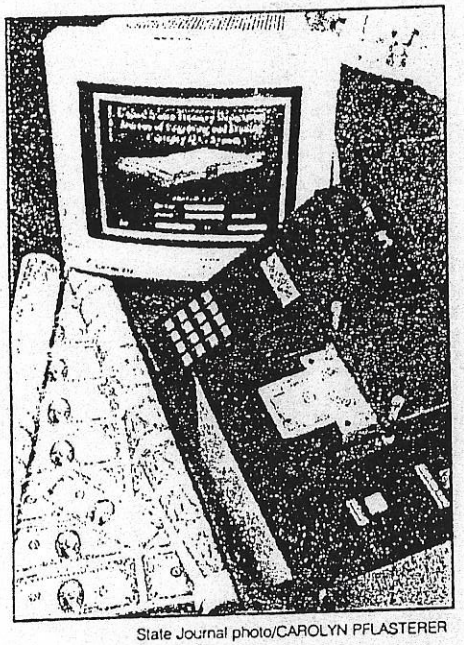
James Proctor, a Treasury spokesman, said the crumple test involves cutting a note in half from top to bottom, rolling the half into a cylinder about the size of a cigarette, then inserting the rolled bill into a tube where a plunger crushes it down to about a half-inch depth. The bill is then removed, unrolled and subjected to repeated rollings and crushings.

Proctor said that because the crumple test relies on a variety of users who might apply different amounts of stress, the results are not reliable.

Enter the U.S. Forest Products Laboratory in Madison, which is part of the U.S. Department of Agriculture.

The USDA contracted with the Treasury to have the lab's paper experts examine ways to stress paper.

At the lab, Rollie Gleisner, Dennis Gunderson, Steve Hankel and Tim Smith devised a dozen concepts on how to abuse currency, said Ted Laufenberg, who worked with them on the project.



State Journal photo/CAROLYN PFLASTERER

This machine, developed in Madison and designed to test the durability of currency, is getting a tryout at the Treasury Department.

After the lab inventors decided on the "rolling fold" method to simulate wear and tear, the lab went looking for someone to develop and design a commercialized version.

Bruce Winkler and Madison-based Prototype Design Services gained the contact with the lab to build a machine that would reliably repeat the desired motions.

The "currency abuse system," also dubbed the "money mangler," consists of two finely machined, aluminum vacuum plates, Winkler said.

The plates, which are fifteen-thousandths of an inch apart, hold a bill, which is five-thousandths of an inch thick, and roll it back and forth approximately 2½ times per second, Winkler said. He said about 90 seconds of this treatment mimics the wear and tear a dollar bill receives in 12 to 18 months. The life expectancy of a dollar bill is about 18 months.

Winkler and PDS also developed computer software that monitors the testing machine's work.

The Treasury people in Washington, D.C., are now testing the tester delivered in June to see whether it can do the job as billed.

Meanwhile, back in Madison, the people at Forest Products Lab are refining their machine. And the people at PDS are looking at taking the system a step further, enhancing the computer database and working on fully automating the machine.

If the Treasury chooses the money mangler, it may mean good things ahead for the inventors and taxpayers.

If it's patented, the inventors share the royalties with their governmental agency under a formula that includes the possibility of a percentage going to reduce the deficit. And if the machine helps the Treasury make money that lasts longer, well, we'd all like that.

Prototype Design Services

Service: Helps clients determine whether their product or idea has a chance to be marketed successfully, helps clients design products accordingly.
Employees: four full-time, four part-time. Also contracts with consultants for specific projects.
Sales: 1993 — $500,000; projected in 1994 — $875,000.
President: Bruce Winkler
Address: 23 N. Pinckney St.

Stretching the dollar bill's life expectancy

Madison research firm develops machine that helps stress-test money for federal government

By Robert Mullins

Money. It's a gas.

Unless the money you're trying to insert in a dollar bill reader is so worn, faded and torn that it doesn't register as *being* a dollar.

Then, money's a drag.

If only someone could find a way to make money last longer — at least physically last longer. People would still spend it like crazy, but at least the paper would hold up going from person to person.

Prototype Design Services Inc. (PDS) has filled that bill.

The Madison company helped design in 1994 a machine that the U.S. Department of the Treasury is using to test the durability of paper currency.

If paper currency can be made more durable than it is now, the Treasury Department won't have to print new bills as often and that would save all of us money.

The dollar bill tester, which PDS dubbed the "Money Mangler," is just one of many products the company has taken from rough-draft form to saleable form.

The government project for Treasury aside, most of PDS' clients are private firms or individual entrepreneurs looking to invent the hot new product that will earn them millions of crisp, new dollar bills.

"People come to me with their American dreams," said Bruce Winkler, president and founder of the 12-year-old, eight-employee company.

PDS' office, with its view of the state Capitol across the street, is cluttered with works in progress: a scale that weighs liquor bottles in a tavern so bartenders pour the right amount into drinks; an applicator that dyes tissue samples for cancer research; and a garment bag designed to keep clothes from getting wrinkled on a trip.

When people come to PDS "they have a good idea for a product," Winkler said, but it needs refinement. His firm tries to give it to them.

Winkler described PDS' role in the marketplace as that of the "virtual corporation."

Smaller firms without their own research and development departments farm out product development to firms like PDS so that they have that expertise to draw on when they need it — but *only* when they need it. Essentially, said Winkler, a client gets an R&D department without the overhead.

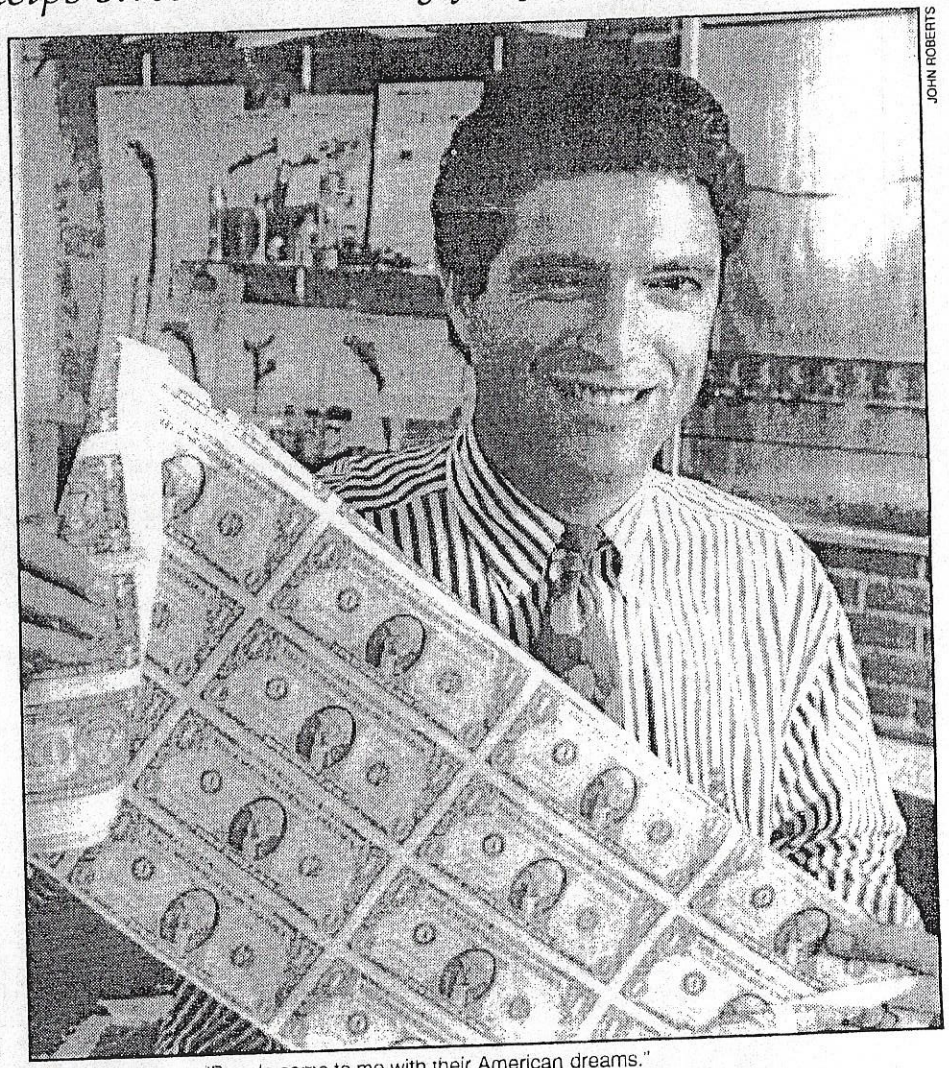
"Our goal is to develop a strategic plan for a market-driven product development process," he said.

The silent product

Conspicuous by its absence from the array of prototypes in Winkler's office, though, is the Treasury Department's bill tester.

Although PDS put out a news release on the product, the government considers the project "very hush hush," Winkler said, and doesn't want him to comment beyond what's already been released.

What is known is that the Treasury Department actually hired the U.S.D.A.

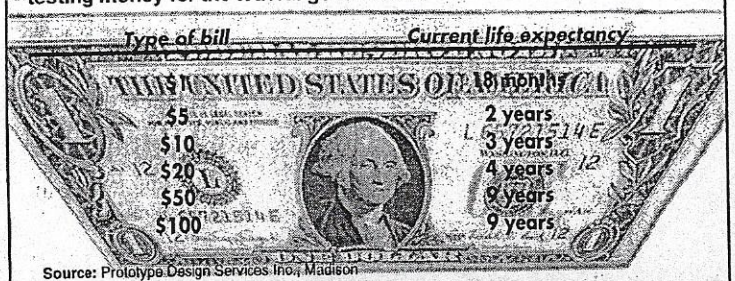


JOHN ROBERTS

Bruce Winkler . . . "People come to me with their American dreams."

Stretching a dollar

A machine developed by Prototype Design Services Inc. is stress-testing money for the federal government.



Source: Prototype Design Services Inc., Madison

Forest Service Forest Products Laboratory at the University of Wisconsin-Madison to design the bill tester. The Forest Products Lab hired PDS to provide technical assistance.

"Given the level of staffing we had, we felt that we would find an outside source that would help us with the design of the device," said Tim Scott, general engineer with the Forest Products Laboratory in Madison.

Like PDS' Winkler, Scott also declined to say exactly how the device works. Essentially, though, it simulates the wear and tear a bill goes through from person to person, wallet to cash register and back to wallet, again and again in its lifetime.

To thwart counterfeiters, the Treasury Department is redesigning currency with new features that will change the physical makeup of the bills.

For instance, the portrait of the president or other famous Americans on the front of the bill is going to be slightly off-center from where it is now. Behind it will be a smaller watermark version of the portrait only visible if you hold the bill under a light a certain way.

The watermark version of the portrait is designed to prevent a counterfeiter from bleaching a $1 bill with George Washington's portrait and printing a fake $100 bill with Ben Franklin's portrait. On the counterfeit $100 bill, the watermark portrait of Washington will still be there.

These and other anti-counterfeit measures change the physical characteristics of the bill and affect its durability. The dollar bill tester was designed to determine how long the new bills will last.

Scott said the Forest Products Lab developed as many as a dozen prototypes of the device, which it narrowed down to two. The lab then brought it to PDS for further refinement. A final prototype was sent to the Treasury Department in Washington, D.C., for it to test on its own. PDS also designed computer software that could help federal officials monitor testing of the currency.

Dealing with innovation

Although the Treasury Department project is unique because of its secrecy, it is typical of the work PDS does on other inventions, said Winkler.

"It is indicative of the way we do business, which is to help clients bring new products to market quickly," he said.

Among PDS' other clients is PDQ Food Stores Inc., Middleton, owner of a chain of filling station/convenience stores in Wisconsin and three other states.

Chris Jacobsen, chief executive officer of PDQ, hired PDS to design products for use by PDQ itself and other products which Jacobsen intends to market latter category are the garment bag and a dog leash made of rubber — with a shovel-style grip — that stretches as the dog pulls on it.

"(Jacobsen) is definitely an entrepreneur," said Terry Dehring, PDQ's director of marketing.

Jacobsen could not be reached for comment.

One of the products PDS helped PDQ develop for its own use is a see-through filter that would go on the nozzle that customers use at PDQ's self-service gasoline pumps.

"It's a visual aid to show our customers the purity of the gas," said Dehring.

The problem was that the prototype PDQ presented to PDS was too heavy and cumbersome to be convenient for the customer to use.

"They tested the first design about a year ago and made it smaller and lighter," he said.

Now the PDS-made filter is being tested at a number of PDQ stations.

PDS' Winkler puts his mechanical engineering knowledge to work on his client's problems.

"Product development is risky and we try to help them reduce that risk," Winkler said.

Among the issues PDS helps clients deal with in product development are infringement on patents either pending or granted to inventors of similar products; obtaining patent protection for the client's product; identifying strategic partners who could be parts suppliers or manufacturers; designing the product to avoid product liability risk; and controlling the cost of production to maximize profitability.

Those are some of the issues All-American Products Inc. hired PDS to resolve when it was developing a new product.

All-American Products, Gurnee, Ill., makes bicycle helmets, baby seats for bicycles and bike racks that are mounted on cars.

Phillip Bishaf, president of All-American, came to PDS one day with a toy with flickering lights on it in one hand and a bicycle helmet in the other.

"Our thought was to put a light and a helmet together since a lot of people ride bikes at dusk or at night," Bishaf said.

Bishaf said what All-American Products needed from PDS was help in finding a way to install a row of flickering LED lights around the helmet and an economical way to manufacture it.

PDS helped the company overcome a lot of obstacles related to the weight of the helmet, the life expectancy of the battery to power the lights, and cost of manufacturing the product, he said.

"The value of having PDS along was that it is one more real strong mind in on the process," said Bishaf.

Could we bother you for an introduction?

The Business Journal is seeking nominations for its annual "40 Under 40" section to be published December 9. We are looking for individuals who are making a difference in their professions or in their communities. Nominees must work in Milwaukee, Ozaukee, Racine, Washington or Waukesha counties.

To nominate someone, please mail or fax a brief statement detailing the candidate's qualifications along with his or her resume and date of birth. Nominations should be addressed to:

The Business Journal,
"40 Under 40"
2025 N. Summit Ave.
Milwaukee, WI 53202
Our fax number is 278-7028.

The deadline for nominations **September 1.**

People turning 40 before December 9 or who have been included in previous "40 Under 40" sections are ineligible.

The Business Journal

People turning 40 before December 9 or who have been included in previous "40 Under 40" sections are ineligible.

BUSINESS

Tuesday, October 4, 1994 THE MILWAUKEE JOURNAL Page C5

Strength of the dollar

US turns to Madison firm to test durability of bills

By JOEL DRESANG
of The Journal staff

The US Treasury Department has turned to a Madison company to help the country stretch its money.

Prototype Design Services Inc. has created a computer-operated device that rolls, sucks and rubs paper money to make sure it's made to last.

Bruce Winkler, the machine's inventor, calls it the "Money Mangler." It's supposed to simulate in five seconds all the wear and tear the average bill receives in a month.

Its purpose is to test whether the money's ink, paper and printing will hold up to all the handling awaiting it in the workaday world.

At a time when the Treasury is considering the country's first major currency redesign in 65 years, the quality control and durability checked by what's officially known as the Currency Abuse System will be even more important, Winkler says.

Winkler's 13-year-old product design firm beat out about 20 other bidders for the government contract to design the money tester. He has been working with the US Forest Products Laboratory in Madison, testing the device for about a year. The Treasury's Bureau of Engraving and Printing has been evaluating one version of Winkler's contraption since June. He's about two weeks away from sending the Treasury an updated version.

WINKLER

Using special vacuum plates, the cash masher takes a fresh, folded bill and rubs it at a rate of 2.5 times a second. Computer software also created by Prototype Design helps keep tab of testing parameters and track how they measure up with an array of production variables.

Eventually, Winkler expects the device to include robotics that would remove the bill and any ink and dust left after each test and then optically scan the money for wear.

"Basically," Winkler says, "as in any evolutionary research development project, the protocols and methodologies are still being developed."

Prototype Design's equipment replaces test machines used since the 1950s.

"There was a lot of physical labor in the old test, and there was a lot of time in the old test," Winkler said. "And the results were not always consistent."

The Treasury department isn't the only organization concerned about the durability of bills.

"It'd be nice to make money more durable," said Dave Harper, editor of Bank Note Reporter, a collectibles magazine in Iola, Wis. Taxpayers benefit by getting more bang for their bucks, Harper said, and hobbyists don't have to work as hard to preserve their collections.

Currently, according to the Treasury, the average life expectancy of a $1 bill is 18 months; $5 — two years; $10 — three years; $20 — four years; $50 and $100 — nine years. Harper noted that the $50s and $100s aren't lasting as long as they used to because, with rising prices, more people are using those bills than they had in the past.

Winkler wouldn't say exactly how much his firm is earning from the project except to say that the government contract is in "six figures" but not yet seven.

Begun by Winkler when he was still a 21-year-old mechanical engineering student at the University of Wisconsin-Madison, Prototype Design specializes in taking clients' concepts and turning them into new products. The company employs five people full time and farms out a lot of work to a network of specialists it has developed through the years.

Among the company's projects, Winkler says, is making machinery for a candy factory that would stuff 800 chocolate-covered marshmallow eggs a minute into cartons; devising new fuel filter systems for gasoline pumps; equipping a barbecue grill with a built-in steamer; and providing paint formula computers for a chain of stores.

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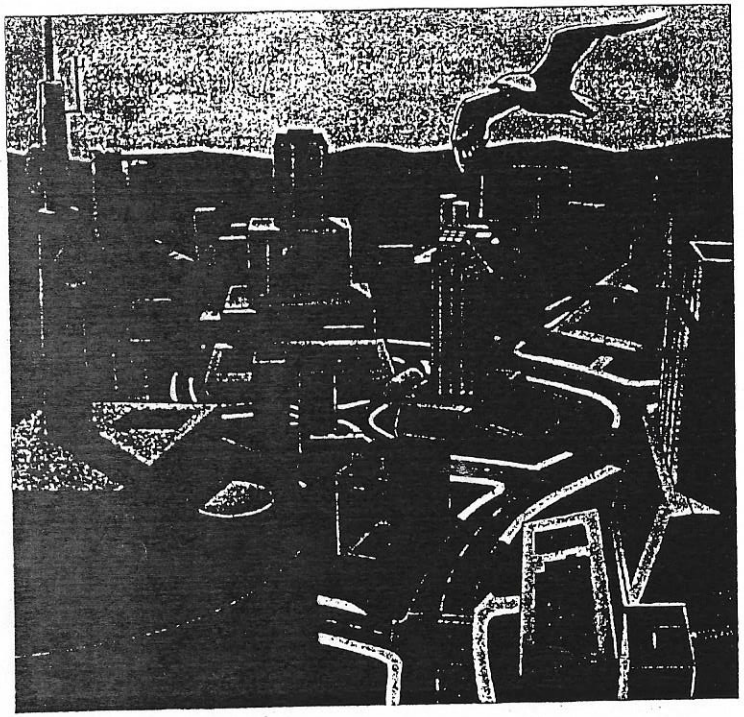

THE VIRTUAL BUSINESS

A mix of old and new philosophies has given rise to a new type of business model — the virtual corporation

BY DIANNE MOLVIG

One day about a year ago, Carroll Marcusen opened an anti-virus software package he'd bought and found a 3-1/2-inch floppy disk with no write-protect button to make it reusable. "I didn't think much about it at the time," Marcusen recalls. "I just thought, that's a hassle. Where am I going to get a button? So I searched. There was no such creature. Nobody made them."

Later he bought another set of software, this time with 19 disks — and no buttons. It hit Marcusen that here was a problem just waiting to be solved. "I thought, they're going to sell two million packages of these things. That's staggering. And there's nothing around to make the disks reusable," he says.

It was a void Marcusen knew he could translate into a business opportunity. Soon he'd designed a small plastic button to be inserted in 3-1/2-inch floppies so they can be written on again. And he'd set up a company, called MarCor Inc.

But to build his business, Marcusen didn't want to take the usual route of getting a big loan, renting space, buying equipment and hiring employees.

Marcusen prefers to avoid employee issues altogether. "I'm a creative-type person. If I have to start dealing with human relations all the time, I'm going to go bed at night worrying about things I don't want to worry about: What time did someone come to work? When did they go home? What's the insurance policy?"

Instead, Marcusen set up his business to suit *him*. He works out of a home office, so his overhead is minimal. A phone, computer, printer and fax machine are the only pieces of equipment he owns, or needs. Not only is he MarCor's sole owner, he's its only employee. In his day-to-day worklife, Marcusen puts his energy into matters he enjoys most, such as strategic planning and marketing. Everything else he's contracting out — including the manufacturing and shipping operations that will start up in early 1994.

Although Marcusen simply did what made sense to him in setting up his company, he recently learned there's a new business buzzword to describe his approach: "virtual corporation." Briefly defined, a virtual corporation is a company that contracts out most of its key functions, keeping in-house only those activities that are closest to the heart of the business.

Another way to describe this idea is to use the term "vertical disintegration," says management consultant Eric Brown, who's worked with owners of virtual corporations. "Ford's River Rouge plant was the ultimate in vertical integration," Brown explains, "in which the company owned its own iron ore mine, steel processing plant, glass plant. Every possible component that went into the car they set up a company or division to make.

"But here we're talking about the complete antithesis — namely, vertical *dis*integration, where the core of the virtual corporation is one person or a small staff running the operation by keeping overhead to a minimum and subcontracting out as much as possible."

Subcontracting — or "outsourcing," as it's commonly referred as — has been around a long time, of course. What's the difference between the old standard subcontracting and the virtual corporation? One possible answer is that it's a matter of degree.

A conventional company might subcontract or outsource its printing, advertising, accounting or payroll operation. "But," Brown explains, "when you start subcontracting something like the production, design or marketing of your product, that's at the core of what a company is all about. So that seems to be a part of what's unique about virtual corporations — that they are entrusting core activities to subcontractors."

Aiding Innovation

Still, the virtual corporation itself is not new, even if the term is. Entrepreneurs long have used some elements of this approach in devising creative ways to grow their businesses from scratch — pulling together a piece from here, another from there, to get things done with limited resources.

But in today's marketplace, marked by rapid change and ever-narrowing windows of opportunity, the virtual corporation is getting new attention, from all corners of the business world. Large corporations are looking for ways to quickly respond to shifting markets, while small companies are trying to get into markets typically open only to the big guys with deep pockets.

"There's a frustration out there," notes Bruce Winkler of Prototype Design Service Inc. (PDS), "in not being able to take an idea that even a group of experts agrees has value, and bring it to the market." Winkler sees the virtual corporation as a vehicle for bringing innovations into the marketplace — and doing so quickly. In fact, he's even put a new twist on the concept, calling it "virtual innovation."

Winkler says he first encountered the term virtual corporation about a year-and-a-half ago, although he's actually been creating such ventures for clients for 10 years. Those clients run the gamut from individuals with new ideas to large companies.

For example, to assist a solo inventor in getting a lighting control device into the marketplace, Winkler assembled a nine-person team comprised of a lighting consultant, industrial designer, attorney, marketing consultant and others.

In a project for Glidden Paint Co., he pulled together a team to devise a way to put Glidden's paint formulations, which go out to thousands of paint distributors, on a floppy disk rather than in a thick book. Team members included a computer hardware specialist, a software programmer, a manufacturer and others — none of whom were employees of either Glidden or PDS.

"One of the key elements of the virtual corporation," Winkler explains, "is that people focus to a much greater extent on their core competence. Glidden, for example, has a core competence in paint, not in electronics or microprocessor design or software."

Another hallmark of the virtual corporation is flexibility. The key players may join forces to work on a particular opportunity; when their work is done or the opportunity is gone, the virtual corporation evaporates. Winkler, for instance, assembles and dismantles teams as needed for different projects and companies.

Variations on the theme

In other cases, however, those relationships are in place for the long haul. Take, for instance, Hank Epstein's company, Information Transform Inc., which makes cataloging software for libraries, with customers across the United States and in Canada, Australia, England, Asia and Africa. Epstein has been in this business for 10 years, and throughout that time has surrounded himself with the same key partners, and added new ones as needed.

He has the same accountant in California he's had since he operated a consulting business there several years ago. Another major player is also in California: Epstein's son, who owns a company called M & M Marketing and handles all of Information Transform's sales and marketing.

For many years, when Epstein was entirely a one-man operation, he also farmed out the programming of his software under a joint development contract he had with the Department of Public Instruction (DPI). Back then, his programmer was a DPI employee who eventually came to work for Epstein part-time and then went full-time in April, when Epstein also hired a part-time employee to write user manuals.

This illustrates another point about virtual corporations: there are many variations on the theme. Unlike Marcusen, who strongly prefers being a one-employee company, Epstein has hired a few others. In the case of his programmer, for instance, "he's worked so hard on this for so many years," notes Epstein, "that he's one of the reasons it's such a good product." Plus, the company had enough work for a full-time programmer. All things considered, it seemed like a good idea to hire him as an employee rather than to contract with him as an independent.

However, it's unlikely his son will ever be an employee, Epstein says, because he has no interest in leaving California and he has a company of his own with other clients. So both father and son are content with the outside-contractor relationship.

Bruce Winkler of Prototype Design Services Inc. sees the virtual corporation as a vehicle for bringing innovations to the marketplace as quickly as possible.

For Epstein, the key advantage of the virtual corporation structure has been that it's enabled him to keep his overhead low and to grow without taking on debt. While he's grown more slowly this way, he says, "I didn't want to borrow money ... I feel it's important that I keep control of the company, so I just work out of current cash."

With pieces of Epstein's far-flung enterprise in Madison and California — not to mention the library automation experts in various parts of the country, which he calls on for advice — modern information technology is vital to keep his company tied together.

The same is true for Juliette Schick, owner of SciLog Inc., a Middleton-based company that makes computerized pumps for industrial R & D laboratories.

"I would say a virtual corporation would not be able to exist without computers, fax machines, phones and modems," says Schick. They are the tools that allow one person to run an operation like this.

Although not as geographically dispersed as Epstein's company, SciLog deals with subcontractors throughout Wisconsin. "I work regularly with two top-notch engineers in the state, but they're not on my payroll," Schick explains. "And I farm out the metal bending — the people who make the enclosures, the chassis and the covers. Then I go to another company to have the printed circuit boards stuffed."

This leaves to Schick the tasks of product design, product testing, marketing, shipping and building relationships with her distributors, in this case scientific catalog houses, which sell SciLog pumps domestically and internationally. The end result of her network is that her company "appears much larger to the marketplace than it actually is," Schick notes.

In her three-and-a-half years as a virtual corporation, Schick sees only one disadvantage to this arrangement. "I'm swamped," she says. "There's no one to share the load, no one to fall back on."

To lighten her burden a bit, Schick figures that, like Epstein, she'll hire a few employees in the near future. But she foresees keeping the relationships with the engineers, metal bender and circuit-board stuffer as they are.

"You have to make sure your relationships with your suppliers are strong," Schick emphasizes. "Typically they're going to be relatively small companies. They want to keep getting your business and to grow with you. They have that in mind. So these are symbiotic relationships."

The right match

Doug Hennig also tries to foster a "we're-in-this-together" mindset when building relationships with his company's partners. Hennig is vice president of Heartland Retirement Services Inc., a year-old subsidiary of Heartland Properties that develops and manages assisted living facilities for the elderly.

Set up as a virtual corporation, Heartland Retirement Services farms out marketing and architectural design, and contracts with a third firm to design the business infrastructure. As Hennig notes, "It would take us years to acquire this level of talent internally."

Hennig says his company has made it clear to its contractors that it's looking for long-term relationships. "We've told them what our business plan is," he notes, "and how we think they fit in. We're not so much hiring them to perform a specific task as we are working to achieve certain objectives related to those tasks ... I think of them as adjunct staff members. They come and go, engage and disengage as we need them in different parts of the process."

> *"... I think of them as adjunct staff members. They come and go, engage and disengage as we need them in different parts of the process."*
>
> DOUG HENNIG,
> HEARTLAND RETIREMENT SERVICES INC.

What such relationships demand, says Hennig, is that there be a match in business philosophy and mission, and that everyone has something to gain. "We look for companies that have a real entrepreneurial spirit," Hennig says.

Equally essential is a high level of trust between the parties, because if one person drops the ball, all will suffer. And there has to be plenty of communication. "It's like a marriage," Hennig says. "You have to work at it all the time."

Even so, those relationships occasionally can have their rough spots, as Steve Brown knows from experience. He's the owner of Charlee Bear Farms Inc. in Madison, a virtual corporation that makes dog-training treats. To help him develop his product, Brown created a team comprised of a food scientist, veterinarian, baker and dog trainer, all of whom have equity in the product. He contracts with a manufacturer in Kansas who actually makes the dog treats, and has the packaging done in Madison and Milwaukee. Brown is now working on putting in place the last piece of his venture: the distribution network.

Some months ago, when Brown was still developing his product, he ran into delays because of a breakdown at the manufacturer's plant. "If we'd owned our own extruder," he says, "we would have solved the whole thing in a week. Instead, it took three months."

It's precisely that sort of loss of control of operations that some observers cite as the chief drawback of virtual corporations. Still, the experience didn't sour Brown on the concept. As he sees it, it's a matter of tradeoffs.

"If we had our own extruder," he says, "we'd have to have five employees to run it, we'd have to have a plant. You're talking millions of dollars. And I don't *want* to own any equipment. I don't want to get bogged down with a big overhead and with managing people."

Indeed, Brown has hit on another major motivation behind adopting the virtual corporation structure: sheer necessity. "I had a product I believed in," he explains, "and very little money. So this was the only route."

In fact, it's a route he's gone down before, when he used the virtual corporation model to set up solar energy and energy conservation businesses in Maine. Perhaps echoing the thoughts of many other entrepreneurs, Brown says, "This is the way I've done things all my life. I just didn't know there was a name for it."

Dianne Molvig is a Madison free-lance writer with 13 years of experience working for local and national publications, as well as area businesses.

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KEY CHARACTERISTICS OF A VIRTUAL CORPORATION

- It's a "best of everything" company, in which each partner brings to the relationship its core competence.
- The partners must trust each other and have a sense of co-destiny.
- The partners all stand to gain from working together; it's a win/win situation.
- The virtual corporation can bring new products to market quickly, with minimal investment and low overhead.
- It's highly flexible and adaptable, and thus able to respond swiftly to changing market conditions and consumer demands.
- Information technology efficiently and rapidly links the partners, who may be geographically dispersed.

Money

Wisconsin State Journal Sunday, November 23, 1986, Section 2

Wisconsin State Journal Wednesday, June 4, 1986, Section 3, Page 4

Businessman urges others to get 'free money'

By Paul A. Rix

Of The State Journal

Bruce Winkler, 26 and just two years out of school, is trying to establish himself as an emissary of sorts for Wisconsin's high technology entrepreneurs.

"I see myself as a young catalyst, helping to bring more money into the state. You don't do that by opening another restaurant."

Winkler recently traveled to Bethesda, Md., to serve on a special panel that reviewed research and development grant applications from small businesses around the country.

He returned to Madison with words of encouragement for other entrepreneurs.

"Somebody in Madison is going to get federal money for their projects because the federal government literally needs to spend the money," he said.

Winkler said the experience was an enlightening exposure to the federal labyrinth, and how small businessmen can obtain no-interest, no pay-back grants if they have the right idea and the right approach.

"Before I was on the panel this process scared me," said Winkler, a UW-Madison engineering graduate.

"It intimidated me. I thought it was all 500-page proposals, but after going through it, it wasn't intimidating. The process is not a piece of cake but it isn't all dungeons and dragons either."

Winkler, president of Prototype Design Services of Madison, was the youngest member of the special grant committee sanctioned by the U.S. Department of Health and Human Services. He was the only non-doctor or holder of an advanced degree at the Nov. 13-14 meeting.

Winkler did not receive a federal grant when he started his company but is urging small businessmen to compete for $50,000 and $500,000 grants. The $50,000 grants are for starter projects. The larger grants are for more advanced projects.

"This is free money," he said.

Winkler's expertise, federal officials said, is in knowing how pharmacology devices might help the elderly and whether they might have commercial benefit.

"He came very highly recommended to us by another Madison businessman," said Cheryl Corsaro, executive secretary of the special review section for the National Institutes of Health, an arm of the department.

Each year the federal government provides millions of dollars in research and development grants for small business.

Many are awarded to university professors for work on defense-related and medical projects.

Others are available to entrepreneurs like Winkler and Donald Warren, a Madison businessman who served on a similar federal panel and recently landed a $50,000 grant for a bio-medical engineering project.

"The system does work," said Warren, director of the Madison Center for Applied Technology. "It's a real rigorous review process, but I wonder why we aren't bringing more money to Madison."

Warren said one of the reasons why money may not be coming to Madison is because not enough small businessmen here know about the program. Others may fear the process.

Warren believes there is a correlation between preparing a federal grant application and filling out a tax form. "Don't get things in the wrong place," said Warren. "Too many of the applications I reviewed were fuzzy."

Warren said innovators should also surround themselves with professional and technical experts who can provide good advice on everything from how to prepare a budget to building a better mouse trap.

Improved relations between entrepreneurs and professors might also ease the hostility between universities and small businessmen for federal research dollars.

"There's a lot of federal money to help small business hatch an idea," said Warren.

Bruce Winkler

PDS, AN UP AND COMING HIGH TECHNOLOGY COMPANY

by Karla J. Kroeplin

Planning, patent protection and protocol are the keys to successful exporting, according to Bruce Winkler, president of Prototype Design Services, Inc. (PDS).

PDS is a 2-year-old firm that turns ideas into marketable products. "We evaluate ideas and product concepts. We analyze them to see if they have economic value," Winkler said.

If they are worthwhile, watch out. PDS worked with Oliver Smithies, a professor of agriculture and life sciences at the University of Wisconsin-Madison to develop the Zapper, a genetic transformation system. "We took a piece of equipment conceptually developed here (at the university), an extension of work done previously by other people," Smithies said. "PDS began to market it."

The Zapper hit the market in September of 1985 with little publicity. Due to the high communication level in the genetic engineering community, word spread and demand for the Zapper soared. After a year on the market, at least one laboratory in every major U.S. city has a Zapper.

PDS began a strategic partnership with Promega Biotec, Inc. to market the Zapper nationally and overseas.

Winkler thinks it is important to find a firm respected in the market. "Your product is better received because of a familiar name and reputation backed up and supported by a firm that knows how to treat customers well and has a staff to answer questions effectively."

PDS used another route with their industrial vibration sensors. Over the summer, foreign distributors offered to market the sensors overseas. "International markets have almost come to us, we didn't pursue them. There is a lot of marketing potential (in the sensors)," Winkler said.

PDS can help other companies become cost-effective. "A company that is overwhelmed or needs expertise on a short-term basis should look to PDS," Winkler says. "For instance, a company bites off more than

Bruce Winkler, president of PDS

it can chew for a certain period of time. We can come in on a limited basis—per hour or per project—and then we can leave and the company doesn't have the liability of an extra employee once the workload decreases."

There are a number of factors that make PDS a successful company, Winkler said. "The firm has excellent local and national networks of experts and companies that we can quickly access for information, specifications, parts and assemblies and other product details." He also attributes the strong contacts with the university to part of PDS' success.

The speed in which a project can be completed, and the quality of PDS' advisers are also part of the company's strength. "We have a competent corporate staff that can quickly expedite the solution to a problem," Winkler said. "PDS can get the concept into a marketable product before the competitor can and we can do it in a cost-effective manner."

"Small companies have a lot to look at when it comes to beginning exporting," Winkler says. "Most importantly, they need to ask, is there a need for my product or will I have to create a need?"

By doing some brainstorming on your product you might find potentials for markets not found in the United States, Winkler says. "Maybe you're selling portable home generators and you haven't thought about remote areas in other countries."

Find out necessary information before beginning to export such as: shipping, export licensing, customs, export duties, regulations, insurance information and examine cultural differences and standards such as voltage (so adapters on equipment are not necessary).

Next you need to look at quotas, agreements, territorities and exclusivity.

Do not forget patent protection. Patent protection in the United States does not mean protection in other countries. "Filing a patent in the U.S. gives you up to a year to file for patents in other countries. The U.S. patent process officially produces evidence that you created the design or product where a notary public does not," Winkler said.

"Send the product but protect yourself," Winkler says. He advises caution in even sending service manuals along with equipment before the completion of the patent process in the importing country.

Some products need patent protection more than others. "There's a misconception that in Far East markets their products will be copied and sent back to the U.S. at one-half the price. If it is a labor-intensive product there may be a problem—wages are sometimes $1.50 per hour and they have some of the best manufacturing companies in the world. But there has to be a substantial product need to justify copying the product. If there is a worldwide need of 10,000 pieces then you might not have to worry. If there is a need for 100,000 or more pieces then you need to protect your product and saturate the market as soon as possible," Winkler advises.

"If you're producing a unique product you'll find that markets are undefined," Winkler says. "Japan, Canada, China and Western Europe are the easiest markets to enter. Look for companies that will represent your products on a national level." If your product is a high-technology product, chances are word will spread fast due to the high level of information exchange present in vertical markets.

Put together a potential client list, using government sources, private industry lists, directories, government agencies (i.e. departments of Commerce and Development) international industrial journals, members of organizations and industries, and continual feedback from your network.

Protocol is just as important. "Miscommunication in one sentence can be detrimental," Winkler said. He suggests getting an adviser or picking up books on protocol. In doing business overseas it is important to educate yourself to their customs. "Whether it is dressing right at the first meeting, the way you sign a letter or your representation and style of negotiating."

Be aware of the short-term marketability of your product. "In high technology you have an average of two years to do it. At that point the product might become obsolete or in need of major modifications," Winkler said.

He also advises firms to watch competitors' activities, technology advances and changes in your end-user's needs. Make sure you know what your end-user wants and how funding sources are faring. For example, if U.S. research money is cut, overseas markets might become more appealing.

Do not expect to have all the expertise for your small company in-house. "Very few companies have all the expertise or staff to maximize their business opportunities nationally and worldwide. It is important to have a good set of advisers," Winkler said.

Winkler is a 26-year-old mechanical engineering graduate from UW-Madison. His corporation has come a long way in two years. PDS had earnings of $50,000 in its first year, $500,000 in its second year and Winkler is projecting earnings of $2 million to $3 million in the third year.

And in the next two years? "We will continue to evaluate and examine opportunities that we find and those that find us. We're providing a service for which there is a definite need, whether it is doing conceptual research or product design and development, we can be used at almost any firm to improve its cost-effectiveness."

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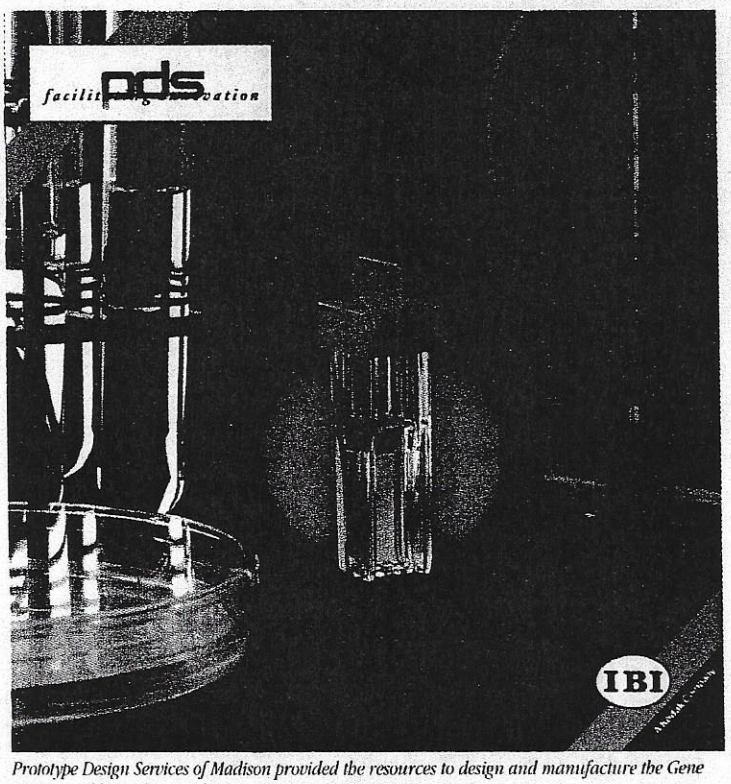
Behind the development of IBI's Gene Zapper

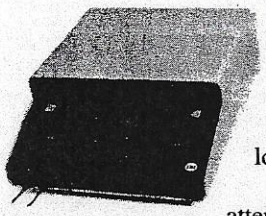


Prototype Design Services of Madison provided the resources to design and manufacture the Gene Zapper and bring it to market. **See Regional News, page 5.**

5-minute update:

PDS FACILITATES INNOVATION

MADISON – If you have a product idea, but lack the resources to develop it, manufacture it and bring it to market, Bruce Winkler, president and founder of Prototype Design Services, would like to hear from you. From its humble office overlooking the Capitol in Madison, PDS has provided the resources and R&D to develop products such as a soft ice cream machine that evenly discharges sprinkles throughout the cone, an applicator that dyes tissue for cancer research, a gas pump fuel filter and the Money Mangler – a dollar bill stress tester that is helping the Treasury Department come up with tougher, longer-lasting bills.



IBI geneZapper

The concept of the virtual corporation is gaining a lot of attention these days because of the lack of overhead expenditures that are associated with it. While PDS does indeed set up virtual corporations for clients who wish to sub out their manufacturing, Winkler prefers to view his operation as a virtual network. PDS has an extensive database of experts upon whom Winkler calls to set up specialized resource teams.

One such team developed the geneZapper, an electroplation system used in cancer research labs, microbiology laboratories and sickle cell anemia research. The company, **International Biotechnologies** Inc., was absorbed by **Kodak Life Sciences** prior to the geneZapper ever hitting the market.

"IBI had a very strong core competency in biologics and molecular research, but they didn't have a strong background in instrumentation," Winkler said. "They wanted to maintain their expertise and bring someone in who could develop what they perceived to be the end-user needs and to provide that in a single instrument at a price point they could sell it at. We worked with them to determine what were the key issues in terms of features and ergonomics, in terms of function and sterility. We came back with a very comprehensive proposal that detailed the 'what ifs'." (*continued on p. 28*)

Minergy plans sludge-converting facility in Winnebago

WINNEBAGO COUNTY – **Minergy** Corp., a **Wisconsin Energy** Corp. subsidiary that recycles industrial waste, wants to build a sludge-converting facility in Winnebago County and has selected at least one potential site, the former **P.H. Glatfelter** landfill in Neenah.

The plant could convert paper mill sludge into steam and glass product which would save on landfill space. Minergy has reportedly made sludge purchase deals with **Kimberly-Clark**, **Wisconsin Tissue Mills**, P.H. Glatfelter and **Ponderosa Pulp Products**.

Minergy was awarded a DNR Waste Reduction and Recycling Demonstration Grant to do a market study on the project. The plant would create 20 to 25 permanent positions.

CNC's the thing at Fox Valley Spring

GREENVILLE - **Fox Valley Spring** Co. tells us that it has added two sophisticated **Itaya** (Japan) CNC Spring Coilers to it manufacturing lineup. The machinery is worth approximately $500,000. Fox Valley Spring manufactures wire forms and springs at its recently-expanded 13,000-sq.-ft. facility. The company said it purchased the equipment to produce sophisticated spring components and to ensure the highest levels of quality production during the manufacturing process.

Industry Forum

• Question of the Week •

Q&A with Bruce Winkler, president and founder of Prototype Design Services.

Q: What is your philosophy regarding virtual corporations?

A: Once we determine the direction and program, we build a virtual team from a variety of people who have the core competencies to get the job done.

Q: How do you put together virtual teams and who comprises them?

A: We do two things: one, we actually build virtual teams for companies, and secondly, we teach methodology to companies that we work with. Typically we have a lead person for the client, who may bring two or three other people to keep everybody involved. We also try to determine exactly what the client wants before we put the team together. The goal is to get them to succinctly state the problem.

Q: How can conventional companies better their product development?

A: Companies are very strong in identifying their problems and implementing their solutions. They are fairly weak at determining what the genius innovation is that goes to solving that problem. They may find one or two solutions to the problem. So how do you find every solution to the problem and how do you then determine how you will produce the next-generation product? There may be 50 ways of doing it. Then when you determine which is the best way, you have to build up a patent fence to protect it. There are methodologies that are capable of finding literally every possible solution to a given problem. In a typical corporation you have a couple people in charge of innovation. Not to take anything away from them, but they are working from a limited set. One methodology was developed in Russia and is called TRIZ. TRIZ allows you to gleam the genius that has come from hundreds of unrelated industries where you would never think of looking for a solution. By utilizing the genius that is available through cross-fertilization, you exponentially increase your number of solutions.

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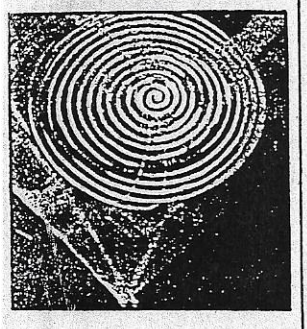
WISCONSIN STATE JOURNAL

FEB. 27, 1990 MADISON, WISCONSIN 50 CENTS

FRIDAY



Lasers to light Saturday night

After a disappointing laser demonstration at the 1986 Festival of the Lakes, festival organizers promise a light and sound show to top all of those seen before in Madison. It's called "Light Up The Night" and it opens the 1990 arts and entertainment on Saturday. Details on the event appear on Look/1D.

LASER-RIFIC

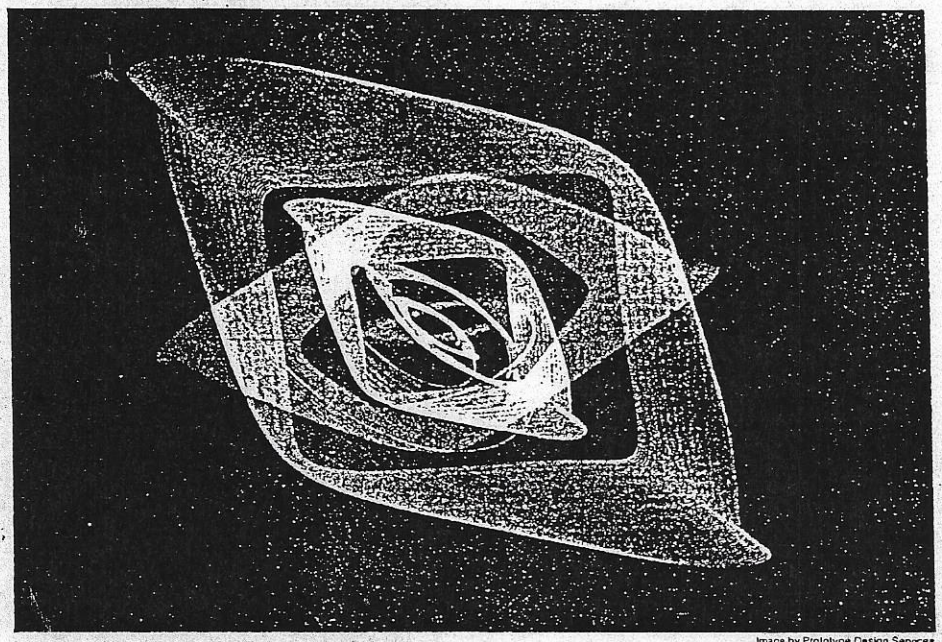


Image by Prototype Design Services

Laser images similar to this one are to be included in the Festival of the Lakes' 'Light Up The Night' event.

Organizers of festival opener promise to light up your life

By Bill Moore
Wisconsin State Journal

Those who saw Rockne Krebs' "Madison Lights" at the 1986 Festival of the Lakes might chuckle at the announcement that a laser show will officially open this year's arts and entertainment event.

Krebs' presentation was a letdown, to say the least, and left some viewers wondering whether they had actually seen what it was they had come to watch.

But Bruce Winkler says this year's presentation will surpass any laser show Madison has seen before. The free, multimedia light production he is organizing will be — pardon the phrase — the highlight of "Light Up The Night," the festival's opening event. The evening's activities also will include an exhibition of neon sculptures and banners.

■ What: "Light Up The Night," free opening celebration of the 1990 Festival of the Lakes.
■ When: Beginning at dusk Saturday; laser shows at 9:15 and 10 p.m. Rain date is Sunday.
■ Where: Mifflin Street side of the Capitol Square; laser shows will incorporate the facade of the State Historical Museum, 30 N. Carroll St.
■ Also: The laser-show soundtrack will be played over speakers on the Square and will be simulcast over WZEE-FM, (104.1). Audience members are encouraged to bring portable radios.

"One of the important things is that this not be confused with the laser events that have been done in Madison in the past," emphasized Winkler, president of Prototype Design Services (PDS), a Madison company that makes computer parts, biotechnology equipment and an array of other technical components. "Comparing previous laser shows to this is like holding a candle to a bonfire."

When Chris Rewey of PDS characterized the presentation as a "laser MTV (Music Televison) show," Winkler balked and opted instead for this description: "Images choreographed with music — multicolored images with dazzling, dancing light."

Those attending the two 35-minute laser shows — total cost about $25,000, paid for by sponsors — can expect to see "full-color, three-dimensional images and a lot of beam work as well as other special effects," Winkler said.

Images are to include dancing cows, space aliens, "kaleidoscope-type and multicolored rainbow effects." These will be synchronized to a soundtrack of pop and top-40 tunes.

Additional visuals will include stills of festival events and Madison-area scenes. They will be projected onto a 40-by-60-

Please turn to Page 2D, Col. 1

■ Weekend schedule for Festival of the Lakes/2D

ANOTHER REASON WHY THE FUTURE IS HERE:

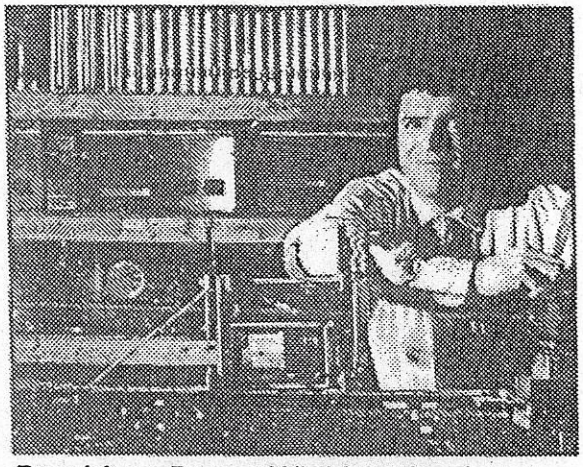
Nurturing Ideas

Turning new ideas into products for the international marketplace is the business of one west-side Madison firm. Prototype Design Services (PDS) provides the product development and entrepreneurial guidance behind everything from simple consumer products to genetic splicing and prenatal diagnostic technology.

PDS works to partner new ideas with technical and business skills. The result is viable, revenue-producing products. The firm achieves impressive results economically by encouraging networks among businesses and diverse departments at the University of Wisconsin.

"We are constantly building bridges to develop the full potential of new product ideas," says PDS president Bruce Winkler. "Madison is ideal for us. The University itself is a great resource. And UW graduates wanting to build futures here provide an exceptional talent pool. Everything we need is right here."

THE FUTURE IS HERE™



President Bruce Winkler checks quality control on a refurbished laser.

PROTOTYPE DESIGN SERVICES, INC.

CONCEPT: To provide entrepreneurial, leading-edge product development utilizing in-house and local resources.

THE FUTURE: Major growth "based on being in the right place at the right time to develop exciting products with a strong impact on society."

LOCAL SUPPORT: UW, M&I Banks, Wisconsin DOD, University-Industry Research Program, Madison Chamber of Commerce, WI Innovation Network, MGE.

MGE Madison Gas and Electric

Money

Wisconsin State Journal Sunday, November 23, 1986, Section 2

Wisconsin State Journal Wednesday, June 4, 1986, Section 3, Page 4

Businessman urges others to get 'free money'

By Paul A. Rix

Of The State Journal

Bruce Winkler, 26 and just two years out of school, is trying to establish himself as an emissary of sorts for Wisconsin's high technology entrepreneurs.

"I see myself as a young catalyst, helping to bring more money into the state. You don't do that by opening another restaurant."

Winkler recently traveled to Bethesda, Md., to serve on a special panel that reviewed research and development grant applications from small businesses around the country.

He returned to Madison with words of encouragement for other entrepreneurs.

"Somebody in Madison is going to get federal money for their projects because the federal government literally needs to spend the money," he said.

Winkler said the experience was an enlightening exposure to the federal labyrinth, and how small businessmen can obtain no-interest, no pay-back grants if they have the right idea and the right approach.

"Before I was on the panel this process scared me," said Winkler, a UW-Madison engineering graduate.

"It intimidated me. I thought it was all 500-page proposals, but after going through it, it wasn't intimidating. The process is not a piece of cake but it isn't all dungeons and dragons either."

Winkler, president of Prototype Design Services of Madison, was the youngest member of the special grant committee sanctioned by the U.S. Department of Health and Human Services. He was the only non-doctor or holder of an advanced degree at the Nov. 13-14 meeting.

Winkler did not receive a federal grant when he started his company but is urging small businessmen to compete for $50,000 and $500,000 grants. The $50,000 grants are for starter projects. The larger grants are for more advanced projects.

"This is free money," he said.

Winkler's expertise, federal officials said, is in knowing how pharmacology devices might help the elderly and whether they might have commercial benefit.

"He came very highly recommended to us by another Madison businessman," said Cheryl Corsaro, executive secretary of the special review section for the National Institutes of Health, an arm of the department.

Each year the federal government provides millions of dollars in research and development grants for small business.

Many are awarded to university professors for work on defense-related and medical projects.

Others are available to entrepreneurs like Winkler and Donald Warren, a Madison businessman who served on a similar federal panel and recently landed a $50,000 grant for a bio-medical engineering project.

"The system does work," said Warren, director of the Madison Center for Applied Technology. "It's a real rigorous review process, but I wonder why we aren't bringing more money to Madison."

Warren said one of the reasons why money may not be coming to Madison is because not enough small businessmen here know about the program. Others may fear the process.

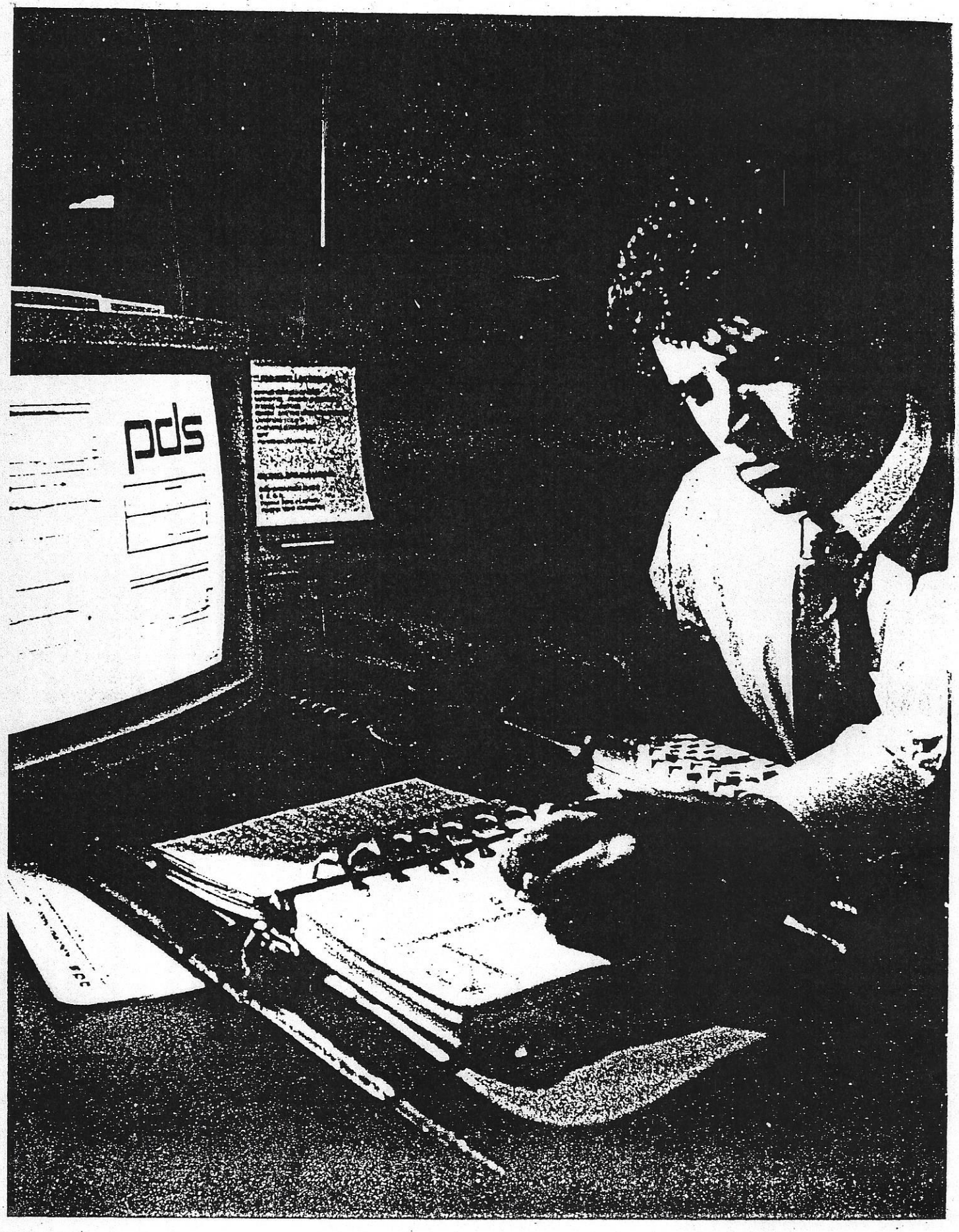
Warren believes there is a correlation between preparing a federal grant application and filling out a tax form. "Don't get things in the wrong place," said Warren. "Too many of the applications I reviewed were fuzzy."

Warren said innovators should also surround themselves with professional and technical experts who can provide good advice on everything from how to prepare a budget to building a better mouse trap.

Improved relations between entrepreneurs and professors might also ease the hostility between universities and small businessmen for federal research dollars.

"There's a lot of federal money to help small business hatch an idea," said Warren.

Bruce Winkler


pds

Bruce Winkler attributes much of his success with talking "with everybody."

FAST GROWING PDS SELLS SCIENCE

By David Tenenbaum

It's a broiling July Saturday. The sky is clear and a gentle breeze cools the picturebook sky. It may be a lousy afternoon to spend in the office, but it's perfect for floating around Lake Mendota. The powerboat is rocking gently, the first beers have been popped, and Bruce Winkler is talking business.

A master at getting along with strangers—"My motto is talk with everybody"—Bruce—head of Prototype Design Services—is chatting via cellular phone with the vice-president of a famous U.S. corporation. This company is not only a household name and a solid citizen of the Fortune 500—it's also a customer.

"Sorry to call you at home, but I had trouble reaching you at the office," says Winkler. "Yeah, I'm on my boat," he adds quickly. "You should come up and join me." Soon, he begins talking specifications and schedules for a new biotechnology device he is building for the firm, whose name, as required by PDS' contract, must remain secret.

And before you have time to say, "Let's check out that cluster of boats," another Winkler deal is a step closer to completion. Putting down the phone, he brags about spending summer days floating about the lake, talking on the phone, and working a portable computer.

This phone call is classic Winkler. It shows his ability to josh around without wasting much time. It shows his fascination with using and making high-technology gadgets, for reducing risk in an inherently unpredictable field—and it shows his knack for making money.

Since leaving UW-Madison's College of Engineering four years ago, Winkler has molded his firm, Prototype Design Services, in his own idiosyncratic mold. The firm, usually known as PDS, was started "with just a thousand dollars," and until recently operated from his living room, though recent growth required a recent move to snazzy quarters at 6524 Seybold Road. Employment is up to 13 full-timers and four part-timers.

PHOTO BY GLENN TRUDEL

The customer list includes premier research laboratories around the world and giants from the Fortune 500.

Sales, which grew 300 percent annually during the first years, are predicted to jump 500 percent this year, and Winkler's major dilemma seems to be selecting the best opportunities from the many he notices.

With diverse interests and skills, PDS has a hand in so many fields that some might claim the company is spread too thinly. The company makes and sells parts for mainframe computers, designs and builds prototypes for other companies, creates devices for amusement parks, and invents biotechnology equipment for sale under several nameplates. Other efforts include simple mechanical gadgets such as a fold-up plastic shaver, a futuristic egg-timer, and a spill-proof coffee-cup holder for automobiles.

As the name implies, Winkler began business to make prototypes which allows him to exercise his talent for designing electromechanical devices. PDS has produced complicated assemblies under contract from companies such as Ohmeda, the Nicolet Analytical Division, and Winkler's old employer, Motorola. Many of these contracts, Winkler explains, result when companies "bite off more than they can chew" but don't want to hire temporary staff.

PDS is the kind of story song Madison's boosters love people to sing. It's an aggressive start-up business with domestic and international sales. A clean, tax-paying business that employs UW-Madison graduates.

Since his childhood in Skokie, Illinois, Winkler has been fascinated by electricity. "My mother would regularly have an electrician come to my room and see if what I was doing was safe," he recalls. Early creations included a treehouse "complete with telephone and television and 110 volt" current, and an elaborate switch to control the lights and stereo in his room. Early "learning experiences" included getting "zapped across the room" by an electric gizmo he scrounged out of a dumpster.

But Winkler says he learned more than just science back then. He had few friends, so he had to "learn to communicate from the ground floor up, how to look people in the eye, and be interested in what they have to say." Winkler attributes much of his business success to his communication skill.

That principle is reflected in biweekly staff meetings, where each employee is asked "to suggest how to make a better company, a better working environment, how to be more profitable." At a recent meeting, Winkler heard his technicians complain that when supervisors assigned tasks, they failed to explain their importance. Lesson? "Employees like to feel their accomplishments, to see the milestones" in company progress, Winkler says.

Until recently, a talk with Winkler was a whirlwind tour of exciting technologies he was trying to exploit. These days, however, he seems more fascinated with managing his business. He's young enough—and smart enough—to take advice, but he's also made some discoveries. One such invention, a virtue born of capital shortages, is his habit of selling products while still on the drawing board. "We never work with a product unless it's already presold," says Dave Reinke, the head of PDS' computer-maintenance marketing. Reinke, who met Winkler while selling cars for Ahrens Cadillac-Oldsmobile, adds that such an approach "takes the risk out of it."

Unless, that is, PDS cannot deliver the goods, which is the province of six engineers on staff. These engineers spend their days hunched over electronic assemblies and computers in workrooms surrounded by growing heaps of electronic gizmos.

One presold idea served as PDS' entree into the flourishing field of biotechnology equipment. The story began a few years ago when Winkler met a scientist from the U.S. Department of Agriculture while they were shopping for electronic parts. Following his policy of "talking with everybody," Winkler asked what the man was seeking, and they began talking shop.

One thing led to another, and, although Winkler had neither experience nor ambition to sell to genetic engineers, in two months he had landed a contract with USDA to build some devices. Then Promega, a Fitchburg company that sells supplies to genetic engineers, heard about the device, but the two sides decided the project might infringe a patent and dropped it.

Sales, which grew 300 percent annually during the first years, are predicted to jump 500 percent this year, and Winkler's major dilemma seems to be selecting the best opportunities from the many he notices.

Nevertheless, the experience gave Winkler contacts at the genetics department at UW-Madison, where he met Oliver Smithies, a geneticist who has since moved to the University of North Carolina. Smithies had invented an "electroporator," a machine that allows genetic engineers to insert DNA into a cell nucleus, but he was not interested in producing it. Winkler adopted the project, created a prototype, and sold some machines.

While scientists thought the market could only absorb a few devices, Winkler contracted with Promega for worldwide distribution, and soon hundreds were showing up at some of the most prestigious laboratories in the world, including the National Institute of Health, the Pasteur Institute in Paris, UW-Madison, and Harvard University.

Sue Okray, an administrative assistant at Promega, says the electroporators "were very well received. They were good machines for us. Service was always as prompt as possible." Nevertheless, Promega discontinued the electroporators, which no longer fit their product line, and Winkler is selling a new generation of electroporators by himself. A bit of technologist's humor has accompanied the change—the machines are now officially designated by their nickname, "Zapper."

Preselling not only reduces risks—it also helps raise capital. Winkler, who contends that "high-tech companies are not really understood by the banking system," has convinced bankers to approve working capital loans by displaying a sheaf of purchase orders.

Another key to PDS' success, contends salesman Reinke, lies with the competition. "I've been working with a supplier since February," he says, "I've spent $200 on phone calls alone, trying to buy a part they stock. That attitude creates a niche for a company that can actually supply a finished good."

High-tech is, by nature, a competitive effort to develop and sell intellectual property, as witnessed by patent battles that threaten to sink the software and biotech industries beneath a blizzard of lawsuits. Companies that survive by selling information, says Winkler, need to worry about security. "Once or twice a week there's an attempt to infiltrate us," he adds, referring to callers who ask about company plans and suppliers.

In response, Winkler has begun paying close attention to corporate security. PDS employees are told what not to divulge on the phone, and a shredder is used to destroy any "sensitive" papers. In addition, some details on customers and products were omitted from this article.

Preselling is not the only trick Winkler uses. He also tries to "take advantage of the resources in Madison. If a high-tech company does not use resources like UIR [University-Industry Research office], you're making a big mistake," he says, pointing out that UIR has a comprehensive data base on who is doing what at UW-Madison and will match interested businesses with university specialists in many fields.

Merely asking a scientist about a business problem is not the best strategy, Winkler maintains, suggesting that an entrepreneur present a "scientific problem, not a profit problem. You walk in with a challenge based on good science—that's how you pique the interest of a researcher."

Until recently, a talk with Winkler was a whirlwind tour of exciting technologies he was trying to exploit. These days, however, he seems more fascinated with managing his business.

Data flow within the office is another key to success. "It's important to have an office manager who feeds you important information," says Winkler, pointing out that Gail Lamberty, who became his first employee way back in November, 1987, took the initiative to design a computerized system for compiling weekly cash-flow figures. *Continued on page 74*

With his native enthusiasm setting the pace, Winkler tries to build what he calls a "team spirit," telling workers they have the chance to get in on the ground floor of a growing business. He also maintains an open-door policy toward employees.

Winkler helps the National Institutes of Health judge Small Business Innovation Research grants. These grants, also available from many other federal scientific agencies, offer hundreds of millions of dollars in research funds to small businesses.

Although somebody as self-confident as Bruce Winkler seems unlikely to admit to shortcomings, he is realistic about the barriers facing an executive who's less than 30 years old. "I have to make sure my shoes are shined. I don't have the luxury of wearing jeans on the job," he says.

But Winkler realizes that a good presentation can allow him to converse as an equal with executives of some of the biggest American companies. It's more a matter of skill and the determination to carry through. Of having the audacity to believe he can make tomorrow's machines today. Of grasping opportunities. And of daring to call major executives. At home. From a boat on Lake Mendota. ■

Madison firm charges circuit between classroom, industry

MILWAUKEE SENTINEL Thursday Business Thursday, July 10, 1986

By Alvin L. Curtis
Sentinel staff writer

Madison — Like a miner panning for gold, Bruce Winkler searches the University of Wisconsin — Madison for nuggets of technology.

Since he was graduated from UW in 1983 with a bachelor's degree in mechanical engineering, Winkler has been earning his living by finding those technological nuggets in academia and polishing them for the business world.

Winkler, president of Prototype Design Services Inc., is building his small company around that often little understood link between the university and business.

"I know there are hundreds of ideas sitting in professors' minds and on paper," Winkler said. "I hope to tap into that."

Winkler already has started.

PDS has taken a gene transformation device, developed through university research, and brought it to the marketplace.

The device, nicknamed "the zapper," will be marketed by Promega Biotech, a Madison biotechnology firm that specializes in serving the genetic engineering and research market. The new product will expand Promega's business into instrumentation for the first time.

Essentially, the product Promega will market, and PDS will build, allows researchers to conduct more precise genetic experiments. The device throws a large electrical charge into a specific cell, enabling researchers to insert genes for experimentation.

Working with Oliver Smithies, a professor of agriculture and life science at UW, Winkler's firm took technology Smithies helped develop and found a way to market it. At the same time Winkler stayed in touch with potential users "to assure it had the functions they were looking for," Winkler said.

"We took a piece of equipment we developed here, that was patentable, an extension of work done previously by other people," Smithies said. "He began to market it."

Winkler, 26, started PDS in an apartment "with five other guys" doing, as the name implies, prototypes and models for scientists and others inside and outside of the university.

To keep his new firm going, Winkler worked at various jobs including installing burglar alarms. One installation, in the home of a bank vice president, led to an early PDS business loan.

First-year revenues were a slim $50,000.

In addition to the firm's work in genetic engineering, PDS has developed other technologies for companies such as Nicolet Instrument Corp. where it helped with designing service instrumentation.

To a PDS customer, hiring Winkler and his firm is good business, said Gregg Johnson, a Madison business consultant who has worked with Winkler. "It is employing wise use of funds," Johnson said.

Winkler has access to experts, both inside and outside of the university, that he taps for use on projects.

He has to. With a staff of only two and a half people, Winkler has become proficient at finding individuals to work for the firm on a project basis.

"That is his forte," said Patrick D. Maloney, president of Genesis Electronics Inc., a small Madison electronics design and fabrication firm that has worked for PDS.

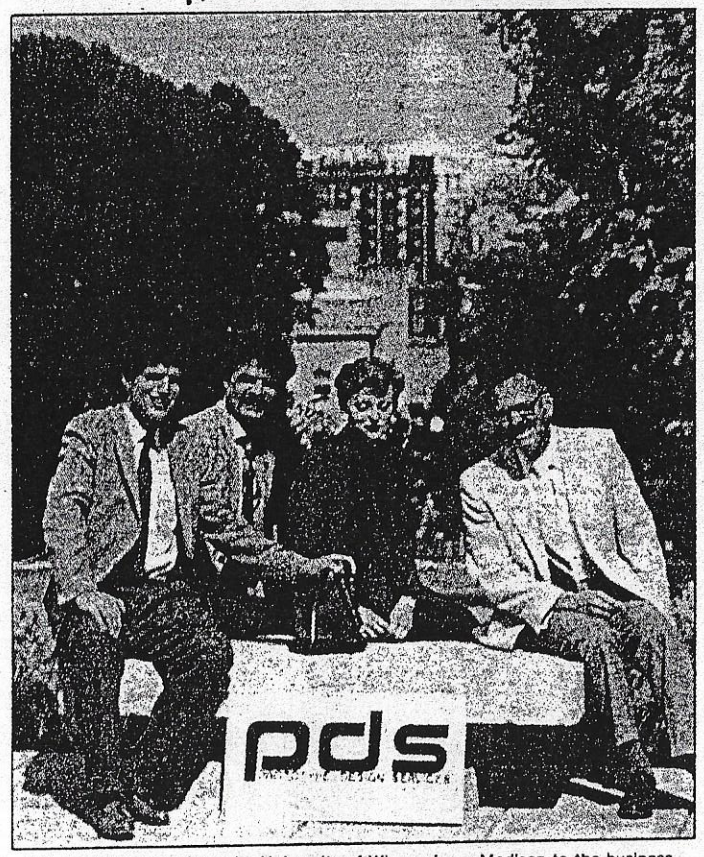
Maloney, an electronics engineer with 30 years of experience, said Winkler often acts as the link between an idea and a product, no matter how far apart the two may appear. "He's the eternal optimist," Maloney said.

In a business like Winkler's, optimism sometimes has to substitute for profits.

But from $50,000 the first year, Winkler expects to surpass $500,000 in revenues during 1986.

Winkler's firm may typify the type of businesses economic development experts say is needed to make better commercial use of university research.

The brunt of that task falls on the Wisconsin Alumni Research Foundation. Patent rights from university research can be assigned to WARF, which handles the paperwork and distributes the royalties. Founded in 1925, WARF makes research grants without many of the restrictions associated with government grants.



Bringing technology from the University of Wisconsin — Madison to the business community is the role Production Design Services Inc. wants to fill. The people both in and outside the firm helping it grow are (from left) Bruce Winkler, president; Gregg Johnson, a business consultant; Susan B. King, a lawyer who works with entreprenurial firms; and Patrick D. Maloney, president of Genesis Electronics Inc., a design and fabrication firm.

Winkler sees room for firms like PDS in developing smaller, less profitable and riskier ideas and technologies, ones that WARF chooses not to develop. "The concepts they work with have to be significant," Winkler said.

Smithies also sees a role for firms like PDS in the Madison area.

"It is a role one hopes will grow and every indication is that it will," Smithies said. It is also a role that "naturally grows around a productive university, as long as you keep open the channels of communication."

"There's too much going on for any one group to act as a funnel," Johnson said.

To Winkler, the size of a project is not as important as its diversity.

The 26-year-old Winkler turned down a secure engineering job after graduation to start PDS. It seemed like a good time to do it, Winkler said. The alternative would have been to work on a project for a private firm improving a heat sink, a device for dissipating heat.

Rather than commit to working for one employer on one problem, Winkler enjoys the variety of ideas that come to PDS. "We enjoy working on projects that test our imagination," he said. "But I don't claim to have all the answers."

The networking concept works well Winkler said. "With that you can do anything."

Winkler often can be found at the monthly High-Tech Consortium dinner meetings sponsored by the Greater Madison Area Chamber of Commerce.

There, Winkler is on the lookout for experts and for business opportunities.

Like his company, Winkler is interested in more than just work. In his free time, he is a bicycle rider and keyboard player.

In fact, the keyboard playing once created a connection for PDS at Nicolet Instruments. Winkler met the head of company's analytical operations through a mutual interest in keyboard playing.

"He is younger and he has more of the entreprenurial spirit than we see in Madison generally," said Susan B. King, a Madison lawyer who works with entreprenurial firms and who helped Winkler get PDS up and running. "He fits the classic model.

"I think he's going to be very successful."

BUSINESS

LIGHT UP THE NIGHT

Laser light show guru gets help

150 area people taking part

By Mary Conroy
The Capital Times

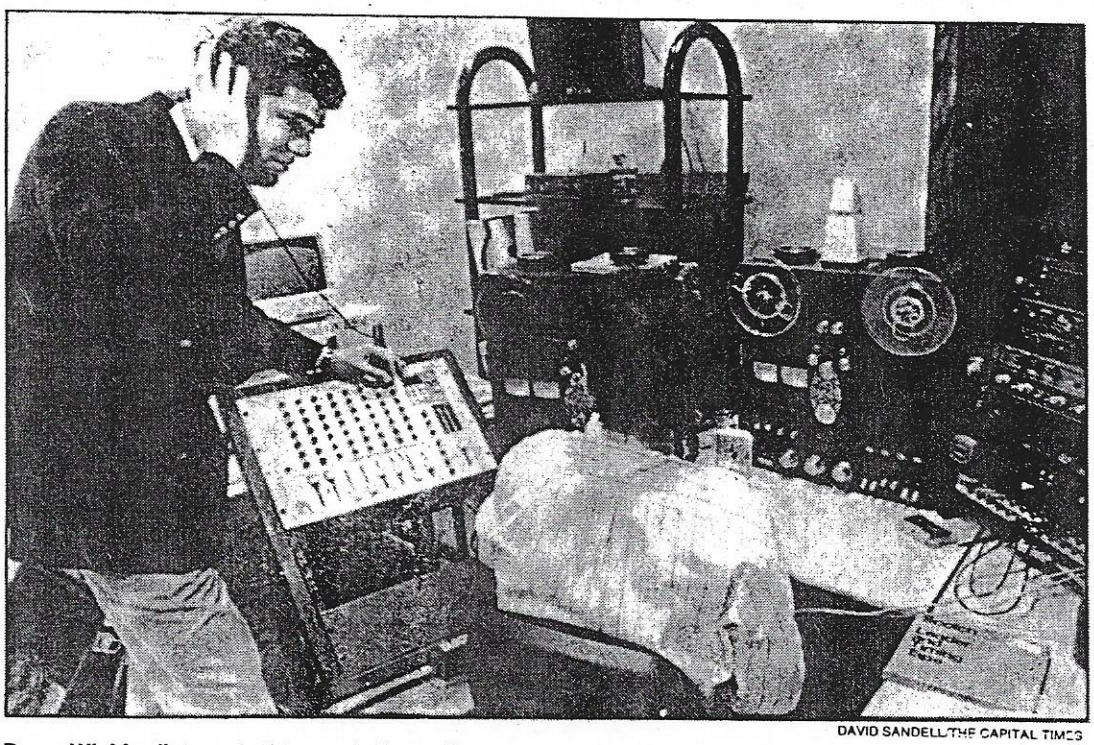
When Toto pulled back the curtain and unmasked the Wizard of Oz, the wizard pleaded, "Pay no attention to that man behind the curtain."

But if Toto attends the Festival of the Lakes, the wizard behind the laser light show Saturday night won't have any objection to being cast in the spotlight.

Provided, that is, that Toto also recognizes 150 other people who helped Bruce Winkler get the light show off the ground.

Winkler, 30, put the finishing touches on the show this week by finding people to throw the lighted Frisbees. Most of the members of Madison's Frisbee club are attending a competition in Milwaukee this weekend, but that didn't deter Winkler. He recruited members of the UW Frisbee team to send the saucers soaring.

But that was only the last of many strategic alliances Winkler made with community groups and area businesses. At the start of the project, he broke the job down into some 50 tasks, with each task involving several steps. And instead of simply assigning tasks, Winkler got people involved, drawing on businesses that ranged from Knupp & Watson Advertising to 35 West, a multimedia presentation firm.



DAVID SANDELL/THE CAPITAL TIMES

Bruce Winkler listens to the music that will accompany Saturday night's show.

The free laser shows will be at 9:15 and 10 p.m. Saturday night, focused on the Mifflin Street side of the Capitol Square. The soundtrack will be broadcast over speakers on the Square and simulcast over 104.1 FM. The audience is encouraged to bring their own portable radios to tune in.

The rain date is Sunday evening.

"When people see there's an actual plan, their confidence level raises significantly," associate Chris Rewey says. "That's the key to success here: The project was generated and managed by the person who cares the most about it, and who allowed people to contribute any way they wanted to."

Winkler, head of a technology transfer company Prototype Design Systems, agrees. "It's like when you have a disaster and people come to your aid. People could say, 'I see clearly a way to participate in this, and I'm going to make it happen.' That allows us to become facilitators."

Says Winkler: "I could either buy all the services or create opportunities for people to participate in an event that tickled them and gave them an opportunity for promotional value. You don't create the bonds we've created by buying someone's services."

• • •

So instead of assigning tasks to faraway vendors, Winkler tapped local talent. "These people live here, too," he says. "They're interested in promoting Madison as the great city it is."

And each of those people provided something unique, from sky tracking lights to special glasses for viewing the lasers. Each of the contributions adds up, though.

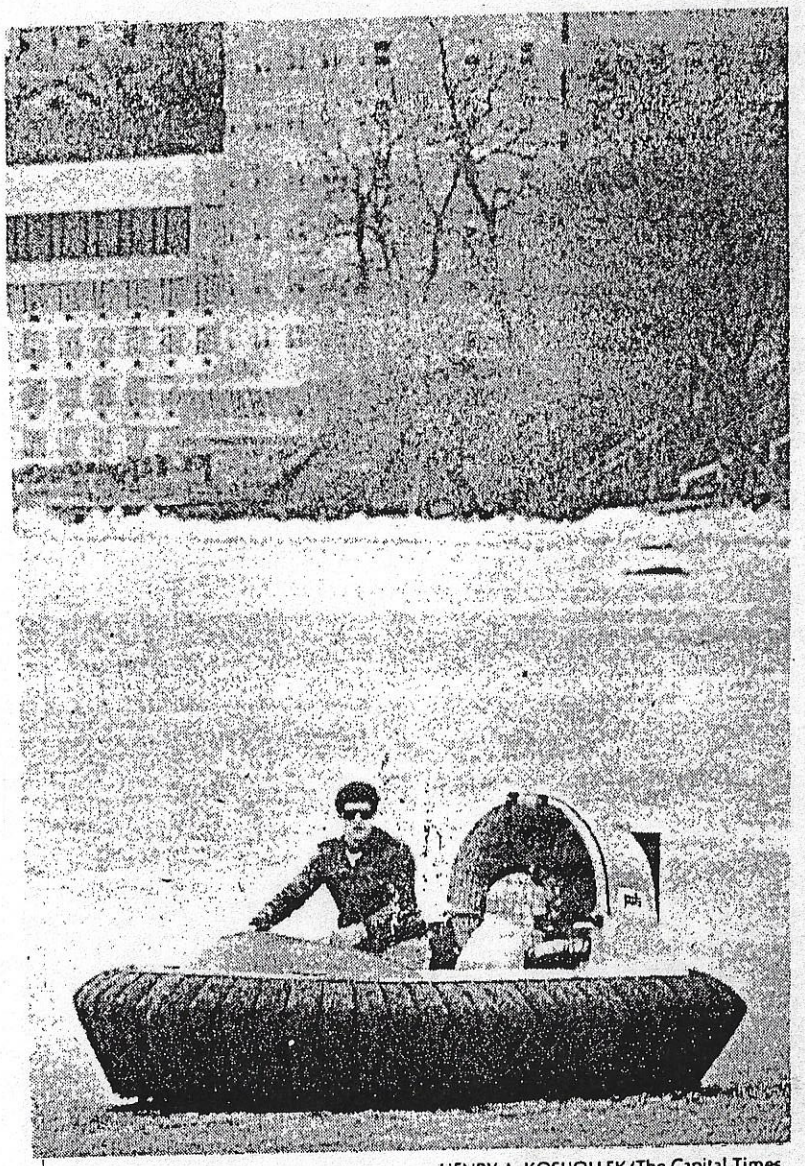
"Little things mean everything," Winkler believes.

He rattles off all the ways the State Historical Society of Wisconsin helped: "They had to allow us access to the roof for the speaker system, power access, access for mechanics to hang a screen on the front of the building, access after hours and access to water for cooling the lasers."

Winkler put himself in charge of developing a new sound effects piece for the occasion, using a Wisconsin theme.

Right now, he only hopes that his composition,"In the Mooood," plays to clear skies. "We have so many people coming together now," Winkler says. He casts a wary eye at the clouds and calls the great weatherman in the sky his only concern. "He's someone I've been trying to have strategic alliances with all my life."

— THE CAPITAL TIMES, Madison, Wis., Weekend of Feb. 28, 1987



HENRY A. KOSHOLLEK/The Capital Times

Bruce Winkler takes a ride on his hovercraft on the Lake Mendota ice recently.

Hovercraft ideal to blow off air

By MILES McMILLIN Jr.
Capital Times Staff Writer

If you're tired of slapping on skis and paying the high cost of a downhill ski ticket, read on.

If you're bored with clipping on cross-country skis, only to find yourself working a little harder than you planned, please continue.

And if you're a thrill-seeker who finds Acapulco too far to go for cliff-diving and Wisconsin's weather too cold for sky-diving, then wander down to Lake Mendota while there's still some ice on the lake.

Chances are you'll hear something like a giant lawnmower and you'll see a rather strange-looking craft spinning its way across the glassy ice in front of the Memorial Union. You won't be alone in watching this craft; several other curious onlookers will be there, too.

The craft and the idea are not new. It's a hovercraft, a circular vehicle that floats 6 to 8 inches above the ground on a bed of air. The hovercraft's pilot and builder is Bruce Winkler, president of Prototype Design Services Inc. of Madison.

Winkler's company has contracted to design and build a smaller type of hovercraft used at amusement parks. He says he built the larger version of the hovercraft so his company could maximize its power and perfect the design in order to miniaturize it for the amusement field.

"But this is also a lot of fun," Winkler said. "This is certainly not our mainstream product, but we've designed it and built it."

The basic design of the hovercraft is similar to what you see on the airboats in the Everglades. Winkler's hovercraft has one engine raised in the back with a large propeller to circulate air.

When the engine is started, one-third of the air is scooped into the bellows, which creates the lift. The other two-thirds blows back and gives direction.

Or what little direction you have control of.

"You get a false sense of security because you're floating," said Winkler. "Because you're floating, you don't get friction the same as when you're on ice. But when you're on land or water and you come to a stop, the friction takes over and you can really come to an abrupt halt."

That's why Winkler finds the frozen Lake Mendota surface ideal for testing out the hovercraft, which could be purchased for $3,000 to $5,000. In order to stop the hovercraft on ice, from speeds up to 40 miles per hour, you simply slide to a stop or turn the craft 180 degrees and start back the other way.

"If you're heading for something you don't want to hit, you're better off just cutting the gas and sliding to a stop," said Winkler. "Or when you're just driving around you can blast it around the other direction and your movement is slowed."

Winkler added that the craft, besides being used for recreational purposes, would be ideal for ice rescue.

Or an excellent replacement for cliff-diving.

PDS, AN UP AND COMING HIGH TECHNOLOGY COMPANY

by Karla J. Kroeplin

Planning, patent protection and protocol are the keys to successful exporting, according to Bruce Winkler, president of Prototype Design Services, Inc. (PDS).

PDS is a 2-year-old firm that turns ideas into marketable products. "We evaluate ideas and product concepts. We analyze them to see if they have economic value," Winkler said.

If they are worthwhile, watch out. PDS worked with Oliver Smithies, a professor of agriculture and life sciences at the University of Wisconsin-Madison to develop the Zapper, a genetic transformation system. "We took a piece of equipment conceptually developed here (at the university), an extension of work done previously by other people," Smithies said. "PDS began to market it."

The Zapper hit the market in September of 1985 with little publicity. Due to the high communication level in the genetic engineering community, word spread and demand for the Zapper soared. After a year on the market, at least one laboratory in every major U.S. city has a Zapper.

PDS began a strategic partnership with Promega Biotec, Inc. to market the Zapper nationally and overseas.

Winkler thinks it is important to find a firm respected in the market. "Your product is better received because of a familiar name and reputation backed up and supported by a firm that knows how to treat customers well and has a staff to answer questions effectively."

PDS used another route with their industrial vibration sensors. Over the summer, foreign distributors offered to market the sensors overseas. "International markets have almost come to us, we didn't pursue them. There is a lot of marketing potential (in the sensors)," Winkler said.

PDS can help other companies become cost-effective. "A company that is overwhelmed or needs expertise on a short-term basis should look to PDS," Winkler says. "For instance, a company bites off more than

Bruce Winkler, president of PDS

it can chew for a certain period of time. We can come in on a limited basis—per hour or per project—and then we can leave and the company doesn't have the liability of an extra employee once the workload decreases."

There are a number of factors that make PDS a successful company, Winkler said. "The firm has excellent local and national networks of experts and companies that we can quickly access for information, specifications, parts and assemblies and other product details." He also attributes the strong contacts with the university to part of PDS' success.

The speed in which a project can be completed, and the quality of PDS' advisers are also part of the company's strength. "We have a competent corporate staff that can quickly expedite the solution to a problem," Winkler said. "PDS can get the concept into a marketable product before the competitor can and we can do it in a cost-effective manner."

"Small companies have a lot to look at when it comes to beginning exporting," Winkler says. "Most importantly, they need to ask, is there a need for my product or will I have to create a need?"

By doing some brainstorming on your product you might find potentials for markets not found in the United States, Winkler says. "Maybe you're selling portable home generators and you haven't thought about remote areas in other countries."

Find out necessary information before beginning to export such as: shipping, export licensing, customs, export duties, regulations, insurance information and examine cultural differences and standards such as voltage (so adapters on equipment are not necessary).

Next you need to look at quotas, agreements, territorities and exclusivity.

Do not forget patent protection. Patent protection in the United States does not mean protection in other countries. "Filing a patent in the U.S. gives you up to a year to file for patents in other countries. The U.S. patent process officially produces evidence that you created the design or product where a notary public does not," Winkler said.

"Send the product but protect yourself," Winkler says. He advises caution in even sending service manuals along with equipment before the completion of the patent process in the importing country.

Some products need patent protection more than others. "There's a misconception that in Far East markets their products will be copied and sent back to the U.S. at one-half the price. If it is a labor-intensive product there may be a problem—wages are sometimes $1.50 per hour and they have some of the best manufacturing companies in the world. But there has to be a substantial product need to justify copying the product. If there is a worldwide need of 10,000 pieces then you might not have to worry. If there is a need for 100,000 or more pieces then you need to protect your product and saturate the market as soon as possible," Winkler advises.

"If you're producing a unique product you'll find that markets are undefined," Winkler says. "Japan, Canada, China and Western Europe are the easiest markets to enter. Look for companies that will represent your products on a national level." If your product is a high-technology product, chances are word will spread fast due to the high level of information exchange present in vertical markets.

Put together a potential client list, using government sources, private industry lists, directories, government agencies (i.e. departments of Commerce and Development) international industrial journals, members of organizations and industries, and continual feedback from your network.

Protocol is just as important. "Miscommunication in one sentence can be detrimental," Winkler said. He suggests getting an adviser or picking up books on protocol. In doing business overseas it is important to educate yourself to their customs. "Whether it is dressing right at the first meeting, the way you sign a letter or your representation and style of negotiating."

Be aware of the short-term marketability of your product. "In high technology you have an average of two years to do it. At that point the product might become obsolete or in need of major modifications," Winkler said.

He also advises firms to watch competitors' activities, technology advances and changes in your end-user's needs. Make sure you know what your end-user wants and how funding sources are faring. For example, if U.S. research money is cut, overseas markets might become more appealing.

Do not expect to have all the expertise for your small company in-house. "Very few companies have all the expertise or staff to maximize their business opportunities nationally and worldwide. It is important to have a good set of advisers," Winkler said.

Winkler is a 26-year-old mechanical engineering graduate from UW-Madison. His corporation has come a long way in two years. PDS had earnings of $50,000 in its first year, $500,000 in its second year and Winkler is projecting earnings of $2 million to $3 million in the third year.

And in the next two years? "We will continue to evaluate and examine opportunities that we find and those that find us. We're providing a service for which there is a definite need, whether it is doing conceptual research or product design and development, we can be used at almost any firm to improve its cost-effectiveness."

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Bruce Winkler
President
Prototype Design Services Inc.

Landa Dewey
First Vice President & Consumer Banking Division Manager
First Wisconsin National Bank of Madison

Peter Brey
Vice President
Merrill Lynch

David Stark
President
The Stark Co.

Keith Pollek
First Vice President
Valley Bank

Kenneth Nonn
President
Nonn's Flooring Inc., The Tile Center Inc.

Tom Kuntzsch
Owner
Badger Office Supplies

Steven Mixtacki
Vice President/Finance
American TV & Appliance of Madison Inc.

Michael Knopstein
Executive Vice President & Account Service Director
Waldbillig & Besteman Inc.

Craig Currie
Director of Marketing & Product Development
Pleasant Co.

Kenneth Murray
Project Coordinator
Chamberlain Research Consultants

Maysie Raine
Director of Marketing
Dane County Title Co

Scott Braucht
Management Consultant
Smith & Gesteland

Julie Pedretti
Vice President/Programs & Services
Wisconsin Manufacturers & Commerce

Jay Loewi
President
QualiTemps Inc., Qualified Personnel

David Sanks
Vice President & General Manager
WISC TV

Mike Mathews
Manager/Economic Development
Madison Gas & Electric Co

Stephen Fleischman
Director
Madison Art Center

Anne Ross
Partner
Foley & Lardner

Mike Theo
Vice President/Government Relations
Wisconsin Realtors Association

Photos: Joel Rathbun

In Business recently surveyed 100 "seasoned" area CEOs and community leaders to see who might be in the leadership spotlight 20 years from now. The "twentysomething/thirtysomething" here were mentioned most often as potential leaders for the year 2011.

By Ruth Benedict, Editor

Bruce Winkler, 31, spans boundaries in high tech, grantsmanship, health, and the arts. His clients include Agricetus, Kodak and the Mayo Clinic; his civic contributions have benefitted the Madison Children's Museum, Kanopy Dance Co., Mendota Mental Health Institute and others. From championing the needs of high-tech startups at the Governor's Conference on Small Business to developing a laser show for 40,000 during the "Festival of the Lakes," Winkler lives his dream that Madison blossom as a nucleus of R&D, technology and culture.

From her nine years in Madison, **Landa Dewey**, 31, is proudest of her involvement in purchasing a new office for (and renovations on two properties) for the Blackhawk Council of Girl Scouts; "this investment was made to better serve the changing needs of Girl Scouts." Dewey, a Rotarian, banking instructor and former loaned executive for United Way, enthusiastically manages a staff of 162 with a philosophy that empowered employees create a better climate for business and citizens alike.

Peter Brey, 36, is no stranger to basketball fans, as recipient of the Big Ten Medal of Honor. But today Brey is known as a founder of the Badger State Games, whose economic impact to Madison exceeds $5 million. Around Madison, he's been a leader with organizations ranging from the W Club to the Queen of Peace School and Family Board, all while managing $90 million for his clients. Two dreams? To organize a youth basketball league in the city and help Madison attract more manufacturing firms.

Name an area non-profit organization — and chances are **Dave Stark**, 37, has served on it. In particular, he's handled tough assignments in expanding the scope of the Greater Madison Board of Realtors, in rescuing the YMCA and revitalizing the local American Heart Association chapter. Just one month after becoming company president, Stark successfully finessed a merger. Helping Madison become a "can do city," with the business community playing a confident, leadership role with government and the university, is first on Stark's wish list.

Keith Pollek, 36, is a believer in what service clubs, business and inspired individuals can do together. His track record includes chairing a $59,000-net golf classic for the Ronald McDonald House of Madison, and his Sertoma Club's gifts toward infant screening monitors for Meriter Hospital. Pollek, who dreams of business and education being so in tune they can dissolve the gap between work place demands and getting the unemployable ready for jobs, wants to see Dane County leaders set new priorities for the entire community.

Because he observes, asks questions and acts, **Ken Nonn**, 34, personifies the proverbial "results" side of community leadership. He started out as a carpet installer at age 19, launching two award-winning flooring firms within the decade. Nonn's civic admirers call him an "unsung hero" — someone never too busy to respond to special needs (Dane County Advocates for Battered Women, committing funds/peoplepower to Olbrich Gardens). Nonn awaits the Badgers' return to the Rose Bowl, and enthusiastically supports that dream as a director of the Mendota Grid Iron Club.

As a new, small-business owner and long time Monona resident, **Tom Kuntzsch**, 26, has big plans. He's been involved with the Monona Jaycees since age nine ("a dues-paying member for the past 10 years"); his many awards there include words like "Best _____" and "Member of the Year." Yet he manages to coach youth baseball, with teamwork and leadership as mottos. Kuntzsch hopes to thank the company's former owners and his parents for their faith in him by donating time, money and merchandise to area non-profits.

Jaycees, Rotary, the YMCA, United Way of Dane County, Wisconsin Business Alumni, church committees, various public commissions — on and on runs the list of causes in which **Steve Mixtacki**, 37, has participated. Those who know him are accustomed to thoroughness, sensitivity, professionalism and wit (the latter a trait he admits accountants aren't typically known for). His vision includes improving the way education meets kids' needs, meeting community challenges in cooperative ways, and discussing the public agenda in an open, action-oriented manner.

Mike Knopstein, 35, has more civic and professional credentials than Madison has lawyers (well, almost). But it's excitement for his "rare opportunity" to combine vocation and community challenges that fuels this many-time local, state and national ad award winner. Knopstein's served on six United Way committees in the past decade, been a director and cabinet member there, and assisted other non-profits — all while distinguishing himself and clients. His dream? For Madison to gain the reputation as a mecca for market research, planning, advertising, design, printing, and AV production.

Troop #6 Assistant Scout Master, Westmorland Neighborhood Board member, an active participant in the Madison International Trade Association ... these commitments are only some of those with which **Craig Currie**, 28, fills his busy days. Currie is fired up about product and community marketing, and enjoys the limelight of being associated with one of Dane County's hottest corporate success stories. And why not? Currie is key to what's happening in the new world order of books, dolls, and fun. He hopes to run for local elected office someday

With two promotions in the first two years of his career, **Ken Murray**, 24, is showing promise as a high-energy leader. He's active in the American Marketing Association and Madison Advertising Federation, serving on committees in both. But his dream is to see Madison become one of the five largest test markets for new products/services — something not far out of reach if Murray can help it. He's motivated by client success, and is a strong believer in the power of planning, research and strategic action.

In looking at a list of **Maysie Raine's** volunteer activities, you realize these are doing roles, not advice from the sidelines. Raine, 39, is a downtown Madison booster, and a champion of telethons, benefits and walks for local causes A-Z. Two of her proudest roles were getting area mortgage bankers involved with "Meals for Madison," and raising funds for the zoo. Through it all, Raine maintains "volunteering time, energy and money is an ongoing obligation for those of us fortunate enough not to be in need."

Introducing people with mutual interests is a skill **Scott Braucht**, 33, has so fine-tuned, the beneficiaries of his networking enjoy the special joy of first-hand contacts. As consultant/teacher/promoter, Braucht quietly works his vision of assisting area companies as they plan for the next generation. Other passions include building bridges between university and business, and recruiting volunteers to support the work of area charities. A proud accomplishment? Chairing a three-day "Jail and Bail" fundraiser for the American Cancer Society; net $125,000.

Julie Pedretti, 33, plays on a real-world field. As an officer in her association and in a number of city, professional and business-women's organizations, she's known as tireless, focused, fun. Pedretti teaches market research to high school students through the Business Education Partnership, and is future oriented via volunteer work with the Girl Scouts and Big Brothers/Big Sisters. Pedretti hopes to run for local office someday; until then, she's sure to be a visible participant on committees appointed by Governor Thompson and her peers.

Of the many associations **Jay Loewi** enjoys, none pique his energies like those which open doors for the handicapped. At 34, Loewi treasures his role with Access to Independence, and dreams of improving the lives of all disadvantaged persons. By being active in Girl Scouts and the Madison Chamber Orchestra, he invests in now; he also hopes to lead efforts to preserve Madison's uniqueness, and to ease its inevitable growing pains. In both areas, he'd like Madison to be a model for the rest of the nation.

David Sanks' favorite hopes are all future oriented: building the Monona Terrace Project, cleaning up area lakes, pushing local government to help the community live within its means. And Sanks, 39, rolls up his sleeves on several committees which look toward the years ahead — as a committee chair for the convention and visitor bureau, Madison Ad Federation, downtown Rotary and the Wisconsin Broadcasters Association. He's worked hard with the Badger State Games Executive Committee, serves on several CBS Affiliates committees, and is a proud backer of downtown Madison

As a city plan commissioner and economic development specialist, **Mike Mathews**, 32, is right in the heart of Madison's largest projects. He serves on a half-dozen city/state commissions, taking the most pride in results that come via team effort. Favorite challenges require "big picture thinking," such as the MG&E Innovation Center, an idea he brought home from a conference. Mathews' output includes second prize in an international competition to design an advanced information city, and a "Downtown Madison Salute" for an inventory of development opportunities there

Hoping to make Madison "an even more vital center for contemporary art," **Steve Fleischman**, 37, is happy to be back in the city of his undergraduate and graduate years. While a member of several civic organizations, art absorbs the majority of his time and energies. As it has in the past, Fleischman wants Madison to keep presenting important art exhibitions and education programs. Some specific ideas he'd like to implement include a broader variety of shows, a strong public art program and a better professional climate for artists

Those who know **Anne Ross**, 36, find her thoughtful, altruistic, far-reaching. Her habit is to devote precious time to the least privileged, a population she met in a decade of YMCA involvement. Ross was a founder (now president) of The Business Forum, today with 160 members and $31,000 for charitable purposes to its credit. She often breaks new ground, serving on corporate boards and teaching. And Ross is a fan of small business, which continually impresses her with its capacity to give to the community

Believing that politics are good, **Mike Theo**, 35, has distinguished himself in that arena. Governor Thompson nominated him to the American Council of Young Political Leaders. Theo has introduced international delegations to the legislature, and he's helped build his association into the second-largest PAC in Wisconsin. In Madison, he supports the Dane County Public Affairs Council and the Madison Scouts Drum and Bugle Corps. His dream? For Madison to replace its "too liberal" image with "city of innovation" — perhaps by stretching housing for all income levels