WPI Venture Forum News

To inspire and facilitate technology-based entrepreneurial activity and economic growth
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Entrepreneurial war stories

Tuesday, January 8, 2001
WPI, Campus Center Odeum*
Registration: 6:00 pm
Meeting: 6:30 pm
Cost: $10, individual annual & lifetime members
$20, non-members
No cost for discounted members

No one ever said becoming successful was easy. But every challenge you face, every curve you maneuver, every hurdle you overcome adds knowledge and stamina – two important ingredients for the successful entrepreneur.

At January's Venture Forum meeting, Stanley N. Lapidus, founder, chairman and director of EXACT Sciences, will relate some of the mistakes he has make in his climb up the business ladder. He will provide examples of some personal gaffes to encourage and reassure entrepreneurs that such scenarios are part of the growing process.

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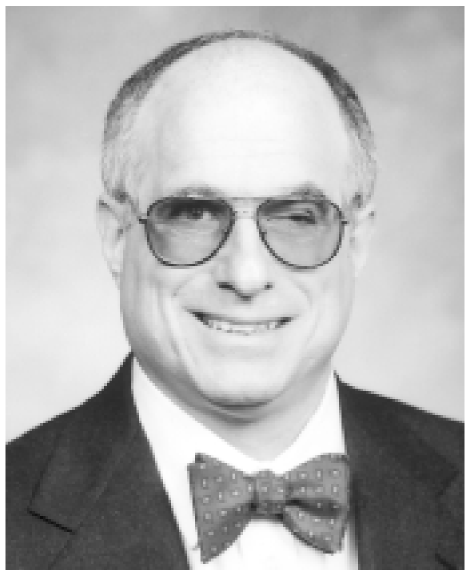
** Please note change in meeting location.*



Stanley N. Lapidus, founder, chairman and director of EXACT Sciences

Lapidus will also compare some of his early blunders with those made after years in the business world.

A renowned engineer, inventor and entrepreneur, Lapidus founded EXACT Sciences in 1995. Previously, he founded two other successful companies: Itran Corporation and Cytyc Corporation. An assistant research professor in the pathology department at Tufts University Medical School, Lapidus also serves as an advisor to the Harvard School of Public Health's Center for Cancer Prevention. He earned a BS degree in electrical engineering from Cooper Union.

EXACT Sciences, an applied genomics company in Maynard, is an industry leader in the fight to eradicate common cancers. Through widespread application of its non-invasive technologies, EXACT Sciences believes it can reduce the mortality, morbidity and exorbitant costs associated with these diseases. The company's ultimate goal is to save a significant portion of the more than 500,000 lives that are lost to cancer each year through early detection and diagnosis.

Case Presenter

Mass Megawatts, Inc.
Jonathan C. Ricker, president and founder
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As the global community searches for viable alternatives to fossil fuel energy, one source remains virtually overlooked – the wind. Jonathan C. Ricker is tapping into that under-utilized resource. President and founder of Mass Megawatts, Inc., Ricker has been researching wind power generators for the last ten years. His version of a wind-powered elec- ▶

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Going for the Gold!

by Dick Prince

The mission and strategic intent of the Department of Management at WPI is, "To be the premier provider of undergraduate and graduate education focused on the management of technology." The department uses this mission statement as a guide for every major decision they make, whether it is curricular, personnel or research-oriented. It is also the department's ultimate goal as they work toward obtaining official accreditation by the Association for the Advancement of Collegiate Schools of Business (AACSB). The department made great strides toward fulfilling this intent during a recent accreditation evaluation.

During the final stages of the accreditation process, the school is visited by a Peer Review Team, which consists of a group of three deans from three different business schools. Prior to their arrival, the deans read and analyze a self-evaluation report provided by the Department of Management. Their analysis of the report, WPI's reply and the subsequent on-site visit provide the basis for the Peer Review Team's recommendation to AACSB. The Peer Review Team visited the school during mid-November to complete its fact-finding mission and analysis of support documents. The results were outstanding!

In the words of Mac Banks, Head of the Department of Management, "We do not have the final recommendation yet but, in all, this was a very positive visit. The Peer Review Team could hardly have been more impressed with what they saw, heard and read. The strides we have made have been phenomenal and everyone is to be congratulated for a job well-done."

You may be asking yourself how this relates to the WPI Venture Forum. The WPI Venture Forum is part of the Department of Management's Collaborative for Entrepreneurship and Innovation, providing outreach to the university and the region related to technological entrepreneurship. Our monthly programs, newsletters, radio shows, business

plan contests and all other outreach programs provide integral support to the Collaborative toward the achievement of its mission.

Several of our members met with the Peer Review Team during their recent visit. We were questioned extensively as to the functioning of the Venture Forum and its impact upon the community. Once again from Mac Banks, "In most such visits the Peer Review Team cites four to six items that are strengths. Here they cited ten because they noted the extremely high level of quality begged for it. Among those they cited was our entrepreneurship program (the WPI Venture Forum and the Collaborative for Entrepreneurship and Innovation), as something that was absolutely exceptional and beyond compare."

I would personally like to congratulate Mac Banks and his team, who have been working on this process day and night for seven years. You are nearing the GOLD and you well deserve it. I would also like to thank all of our volunteers for their contributions toward making the WPI Venture Forum a success and helping the Department of Management achieve its mission.

Dick Prince

Dick Prince is retired from Norton Company and Siebe, plc and is presently a partner in Brooksville Associates, a merger and acquisition company specializing in the health and safety industry. **VF**

A look at November's meeting

The art and science of pricing

by Darleen Flaig

Jim Geisman, President of MarketShare, Inc., a management consultancy located in Wayland, shared his expert opinions on pricing with attendees at the November Venture Forum meeting. He started by asking us to "assess our worth" to our families, our businesses, our friends, our enemies and ourselves. Every assessment of our worth is different, depending on the context and the circumstances, according to Geisman.

Geisman went on to explain that in every situation, what any person, product, or service is worth is based on a number of factors. Those factors include, but are not limited to timing, payment, supply vs. demand, access and actual value.

To further clarify the steps for assessing the value and applying the proper pricing formula to a product, Geisman provided the following useful outline.

- Understand the customer — what are the customer's needs?
- Evaluate the competition — what do they offer? What do they charge?
- Evaluate market conditions.
- Assess and leverage your strengths.
- Be aware of cash flow concerns — when you are paid affects your profit.
- Assess market maturity.
- Evaluate the sales channels.
- Evaluate the economic environment.
- Avoid markets where suicide is a business model.

According to Geisman, pricing need not be the same for each customer. He noted that different customers may have different needs or value different aspects of your product or service, so pricing can be customized based on the aspects listed above. Pricing really is more of an art than a science, he said. One must investigate and ask some important questions: what does the customer need? what does this customer consider value? what is the "customer comfort level" which your product or service provides? Once these questions are answered, the basis for pricing becomes much more clear.

Geisman covered the topic of providing cost savings once the pricing structure has been set and listed three strategies to increase value - increase benefits, decrease cost or do both. He cautioned the audience to assess the risk when lowering prices or making a major change in pricing structure. When doing so, you have to reassess the value and, essentially, start all over again.

Geisman summarized his presentation by emphasizing that the key to good pricing is the pricing is accepted by the customer, it is understood and used by the sales force, and it leads to the financial and strategic strength of the company.

Businessmen share their experiences during the break at the November meeting.

Networking at the November meeting.

Case presenter

Due to a family emergency, Frederick Leber, founder and president of Orbis Vox, Inc., was unable to attend the meeting. In his place, panelist Will Kohler, an associate at Advanced Technology Ventures, gave a brief overview of Leber's business plan. Following the usual format, the panelists then offered their critiques.

Additionally, Kohler presented a day in the life of a venture capitalist. Essentially he described what happens when an entrepreneur approaches the VC. Kohler offered many useful tips on what VCs prefer and how the entrepreneur should position himself most favorably. **VF**

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tric generator, known as a Multi-Axis Turbosystem or M.A.T., is a 24-foot tall, 24-foot wide and 24-foot long steel structure that begins generating electricity with a wind speed of 14 mph. Since wind speeds average just over 15 mph, the design is profitable, according to Ricker.

Recently, Mass Megawatts built one of its high-tech windmills atop Dresser Hill in Charlton. This prototype is capable of generating two kilowatts of energy, which services only a portion of a single-family home. In the next five years, Ricker hopes to manufacture thousands of M.A.T.s for worldwide distribution. Each structure would produce one million kilowatt hours of energy annually, enough to supply power to approximately 150 homes.

The low cost factor of the generator makes it even more appealing. Ricker estimates that each unit could generate electricity for less than three cents per kilowatt, significantly lower than traditional sources, depending on the average wind speed. Companies that receive tax credits and use the new wind-powered generators would realize even greater savings.

Ricker graduated from Bentley College with a bachelor's degree in business and accounting. Before turning to renewable energy sources, Ricker had attended many inventors' conferences and had built an anti-collision device for automobiles.

Following Ricker's presentation, a panel of experts will offer comments and constructive feedback. Alan Glou of Glou International Inc., an executive recruiting firm, brings his expertise in the issues of executive search and management consulting issues to the panel. Two other as-yet unnamed business experts will join Glou in providing Ricker with helpful suggestions in his search for venture capital funding. **VF**

MassBusiness to manage new MB capital mezzanine fund

Massachusetts Business Development Corporation - known as MassBusiness - has joined 13 additional investors to create a $13.25 million mezzanine capital fund for small businesses. MassBusiness President Kenneth J. Smith announced that the new capital resource, MB Capital Fund II, L.L.C., will be used to invest in businesses, generally those with $10 million or less in annual sales. This is the second fund of this type to be managed by MassBusiness. The original $6.5 million MB Capital Mezzanine Fund was initiated in January 1998 and has been fully invested.

Smith also announced the appointment of Robert R. Bell, Jr. as Director of MB Capital. Bell was previously chief development officer for a $46 million, venture-backed health care company, where he completed several acquisitions in the health care arena. He joined the MassBusiness staff in December 2000.

"This fund is the direct result of the first fund's success," said Bell. "The original investments provided important growth capital for nine small businesses in a wide range of industries. Based on that achievement, we're now offering a second, larger fund."

Investors include MassBusiness; Massachusetts Capital Resource Company; Fleet Bank; Citizens Bank; Sovereign Bank; First Massachusetts Bank; Property & Casualty Initiative; Rockland Trust; Eastern Bank; Century Bank; Boston Private; Boston Federal Savings; Danvers Savings, and Lawrence Savings.

Bell is responsible for the management of both MB Capital II and the MassBusiness Mezzanine Fund. His specific areas of responsibility include the identification of viable investment candidates; due diligence; valuation and structuring negotiation; presentation of recommendations to the MB Capital Executive Committee, and consultation with the senior management teams of the fund's existing portfolio. He holds a Bachelor of Arts degree from Norwich University, Military College of Vermont (MCV) where he was designated a Distinguished Military Graduate and received a Regular Army commission upon his graduation.

MassBusiness, with offices in Boston and West Springfield, has invested more than $1 billion in businesses through programs intended to create and retain jobs in Massachusetts and promote business growth, especially for small and middle-market businesses. As a Small Business Administration preferred lender in Massachusetts, MassBusiness offers SBA 504 and 7A loans in addition to mezzanine and equity investments and other financial programs.

Those interested in further information can reach Robert Bell at 617-350-8877 ext. 41 or by e-mail at rbell@mass-business.com. He will maintain offices at 50 Milk Street, Boston, MA 02109.

Carol Cedrone Brennan, Business Development Consultant, 117 Park Avenue, Suite 205, West Springfield, MA 01089, Tel: (413) 732-3419, Fax: (413) 732-0751, E-mail: carolbrennan@alum.mit.edu. **VF**

When in doubt, make a fool of yourself. There is a microscopically thin line between being brilliantly creative and acting like the most gigantic idiot on Earth. So what the hell, leap!

—Peter McWilliams

Outsourcing: part I

by Stephen J. Doig, Ronald C. Ritter, Kurt Speckhals, and Daniel Woolson
The McKinsey Quarterly, 2001 Number 4

If all manufacturers sang from the same hymnal—and many do—they would outsource almost everything: management gospel holds that manufacturing is too labor- and capital-intensive to support the high margins and fast growth that investors demand. By shedding assets, companies can be born again as product designers, solutions providers, industry innovators, or supply chain integrators—and, it is said, quickly boost their return on invested capital. Indeed, Standard & Poor's reports that in the year 2000, the market-to-book ratio of the S&P 500 was six times greater than it had been in 1981—a reflection of the declining importance of tangible assets.

Such pressures and perceptions make outsourcing an almost irresistible impulse for manufacturers. Global access to vendors, falling interaction costs, and improved information technologies and communications links are giving manufacturers unprecedented choice in structuring their businesses. Through outsourcing, companies can now dump operational headaches and bottlenecks downstream, often capture immediate cost savings, and avoid labor conflicts and management deficiencies. We are aware of no managers who have been taken to task for farming out in-house operations.

But in the race to hand over capital-intensive manufacturing assets to outside suppliers, companies may be ceding the very skills and processes that have distinguished them in the marketplace. Consider the case of Gibson Greetings, the oldest US greeting-card maker. In the 1990s, it started running out of cash. To realize savings, Gibson chose to outsource its manufacturing, but it soon ran into supplier-management problems that cost the company its place at large retailers. In the meantime, its competitors had been investing in more efficient printing and production technologies. Ultimately, one of those competitors acquired Gibson. An analyst observed, "The final nail in the coffin was that Gibson got out of the manufacturing business and started outsourcing."

Farming out in-house operations has become a religion. Faith must now be tempered by reason.

Obviously, the decision to outsource usually doesn't produce such a drastic outcome; done right, outsourcing manufacturing or services can deliver game-changing levels of value. But by assuming that outsourcing is the answer rather than critically assessing its pros and cons, companies may be failing to do what really matters: improving a company's performance and maximizing value. Outsourcing can be instrumental in realizing these goals—but not always.

We are not suggesting a return to the time when Ford's River Rouge complex made its own glass, steel, and tires; an original-equipment manufacturer (OEM) facing the complexities and asset intensiveness of that level of vertical integration would now collapse under its own weight. Indeed, about two-thirds of the North American auto industry's $750 billion in value now resides with suppliers. This year, the average electronics OEM was hoping to outsource 73 percent of its manufacturing, according to Bear Stearns, and 40 percent of all OEMs were hoping to outsource the manufacture of 90 percent or more of their final product. Pharmaceutical companies have been witnessing the emergence of a $30 billion contract drug-development and manufacturing market with annual growth rates of 17 to 20 percent. In general, the outsourcing of operations and facilities across industries rose by 18 percent in the period from 1999 to 2000.

Yet the rush to outsource has delivered much less value than it might have. A McKinsey study indicates that more effective outsourcing, which requires a better process for identifying and managing the "natural owner" of every activity in the value chain, could by itself almost double the auto industry's total profits. But so far, most of the supply networks of the automakers have been notable less for capturing a larger share of the total value for themselves than for imposing punitive (and ultimately unsustainable) terms on suppliers.

In the wireless-telephone industry, as well, important players are grappling with such make-or-buy questions. One of the industry's most aggressive practitioners of outsourcing has found that it alone doesn't satisfy the investment community. By contrast, industry leader Nokia has been working to improve the productivity of its existing assets and to integrate its sourcing, sales, and manufacturing efforts. The company has designed its new Beijing complex, for example, to assemble phones with zero inventory for the supply base that it manages and the functions it hasn't already jobbed out. Antti Wäre, vice president of system business at Nokia (China) ▶

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Outsourcing: part I

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Investment Company, has said, "There's no point transferring your inventory to your suppliers, because they will then have the inventory costs, and you will see it showing up in your component prices. But if you can reduce the whole chain's inventory, then you will be very competitive."

Many practitioners of outsourcing clearly recognize that such difficulties exist. One-fifth of the executives in a recent survey say that they are dissatisfied with the results of their outsourcing arrangements, while another fifth of the respondents say that they are neither satisfied nor dissatisfied—which suggests that they are not seeing clear benefits. Dun & Bradstreet reports that 20 to 25 percent of all outsourcing relationships (manufacturing, finance, information technology, and so forth) fail within two years and that 50 percent fail within five. Nearly 70 percent of the companies responding to a Dun & Bradstreet survey asserted that suppliers "didn't understand what they were supposed to do" and that "the cost was too high and they provided poor service."

In such cases, it has often been forgotten that outsourcing isn't an end in itself but rather a strategic tool for enhancing overall performance. The ability of outsourcing to play this role depends partly on the form chosen—the release or sale of assets, a spin-off or initial public offering of the business, or the formation of an alliance or joint venture. If outsourcing isn't used strategically, it probably shouldn't be used at all.

Whether to outsource is one of the most significant decisions any executive team ever makes. Outsourcing involves massive changes to a business's delivery system—changes involving trade-offs and organizational trauma. It is difficult to reverse. It affects the livelihood of thousands of employees. And it opens critical aspects of a company's core business to the scrutiny of supply partners and other external forces, and to their disruptive interventions.

Notes:

Marcia Pledger, "The near-fall of Gibson," *Cleveland Plain Dealer,* March 9, 2000. Bear Stearns Fourth Annual Electronics Manufacturing Outsourcing Survey, May 2001.

Leah Perry, "Outsourcing industry leaders," *Pharmaceutical Technology,* January 2001, pp. 68–73. *The 1999 Outsourcing Trends Report,* LaGrangeville, New York: Michael F. Corbett & Associates, March 1999.

Richard C. Morais, "Damn the torpedoes," *Forbes,* May 14, 2001, pp. 100–9. *The 1999 Outsourcing Trends Report,* LaGrangeville, New York: Michael F. Corbett & Associates, March 1999.

Marq R. Ozanne, *D&B Barometer of Global Outsourcing,* 2000.

 VF

Build a community to sustain your business through trying times

by Jeffrey Shuman and Janice Twombly

How is YOUR business doing? Ask that question of the majority of business people and they will tell you they don't need economic statistics to show that it has become much more difficult to conduct business since September 11th. Even before the terrorist attacks, we were already facing a recession because of the painful restructuring due to consolidations and downsizing.

But all is not bleak. Why? Because due to the on-going shift from product-centric to customer-centric business models, building a business has become an effort in community building and that may, in fact, turn out to be our trump card. Here is a case in point. Most business owners are fiercely independent. After all, they had the gumption to strike out on their own and start a business. Yet there is a growing movement of businesses banding together for shared success. As *Inc.* magazine's September cover story states, "…independent companies are forming alliances, cooperatives, networks, and coalitions in record numbers." The article goes on to say, "The new movement is an antidote to the culture of consolidation. Who needs a 'parent' when you've got friends?"

Exactly. We've described a "collaborative community" as a business trading community comprising a seamless alliance of business competencies. It is developed in collaboration with customers and business partners, and everyone benefits by focusing on profitably satisfying the set of needs and wants of the customers who define the community. So naturally we were pleased to read the *Inc.* story and learn of all the collaborative communities in the making.

The Smaller Business Association of New England (SBANE) and the Bentley College Center for Entrepreneurship (BCCE) are prime examples of collaborative communities. The two organizations recently sponsored a town meeting style forum to provide area business people with an opportunity to share their concerns and seek answers about sustaining their companies in this volatile and uncertain business environment. A panel of invited leaders from government, business, and academia answered questions from participants. The panel engaged participants in an open conversation about the changes business owners are being required to make as a result of the conditions that now comprise the business environment. George Gendron, editor-in-chief of *Inc.* moderated the discussion.

Marijo McCarthy, SBANE chair and principal of Widett and McCarthy, P.C. of Newton, explained the impetus for the forum. "The small business community is mired in the most demanding economic environment in over a decade. For many business owners, this is the first downturn they've ever experienced and frankly need help in understanding what to do. The importance of small business as the engine of recovery cannot be overstated," he says. "Small business makes up 99 percent of the businesses in America, employs over 50 percent of the workforce and represents 40 percent of GDP. Small business is the source of innovation and new jobs that contribute to our quality of life. Up to now, the voice of small business has been largely unheard in the national debate around rising unemployment and economic assistance."

From our point of view, smaller businesses must look to where their strengths complement weaknesses in larger businesses. For example, many larger companies with global operations are taking steps to address possible interruptions in their supply chains. Local businesses using local suppliers are able to deliver small quantities as needed; this becomes an advantage.

In tough times, people have a tendency to "circle the wagons," "hunker down," and "put their heads in the sand." But in the contracting and changed economy in which we find ourselves, that is exactly the wrong thing to do. Now, more than ever, business people need to talk openly with their customers and business partners to better understand each others' changing needs and take aggressive action to profitably meet those needs. The current business environment is an opportune time to build relationships with like-minded people and work together towards the fulfillment of shared goals while achieving our individual goals. Working with people in this fashion builds community and uncovers opportunities that would otherwise pass you by.

Dave Blakelock, CEO of RelationsWeb Software, says, "Too many business people get mired in the day-to-day details of running their businesses and don't systematically build their relationships with the people they do ▶

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Attention published authors!

If you've written a book, we'd like to hear from you. The WPI Venture Forum will hold a special Venture Forum book signing event on Tuesday, February 12, 2002. All WPI Venture Forum members who have written and published a book are invited to participate.

We'll arrange to have the WPI Bookstore carry copies of all books, which will be on display and available for personal signing during and after the meeting.

Contact Shari Worthington, WPI Venture Forum marketing chair, at sharilee@telesian.com for details on how to participate.

Breakfast with the Stars

The Cambridge Business Development Center continues its Breakfast with the Stars series. In its sixth season, the Breakfast is a monthly networking event that brings together high-profile entrepreneurs in an informal setting with presidents, CEOs and founders of growing high-tech companies who tell personal stories of founding and growing their companies.

Breakfast attendees benefit from the speakers' insights, networking opportunities and community building. Some of the Breakfast's past speakers include Mitch Kapor of Lotus, Bob Metcalfe of 3Com, Shikhar Ghosh of Open Market, and Jeff Taylor of The Monster Board.

The next meeting of the Breakfast with the Stars will take place on January 23, 2002 and features Carl Hoffman of Basis Technology.

For more information, visit the website at www.cbdc.org/bwts or contact Theresa Park, program manager for the Cambridge Business Development Center, 494 Massachusetts Avenue, Suite 4, Cambridge, MA 02139, 617-349-4690, extension 204 (phone), 617-349-4691 (fax), Theresa@cbdc.org.

Sponsor's Business Highlight

MTDC

Massachusetts Technology Development Corporation (MTDC) is a Boston-based leading edge venture capital firm that addresses the "capital gap" for start-up and expansion of early-stage technology companies operating in Massachusetts. Since 1978, MTDC has invested more than $46 million in 105 companies. MTDC's typical investments range from $100,000 to $500,000 and are primarily equity-based. Each financing is tailored to meet the needs of the company, the interests of the co-investor and the goals of MTDC. MTDC seeks to make investments on a co-venture basis with compatible institutional and individual investors.

Prior MTDC investments include noteworthy companies such as Andover.Net, Aspen Technology, Concord Communications, Interleaf, Kronos, MicroTouch Systems, Powersoft Corporation and Zoom Telephonics. There are 38 companies currently in MTDC's portfolio representing companies such as CASTION Corporation and Clarity Imaging Technologies, Inc., both based in Western Massachusetts, and Terratherm, Inc., based in Central Massachusetts. Prospective candidates should have a technology component to their companies and a business-to-business focus.

Applications are invited not only from entrepreneurs who are principals in their own firms, but also from members of the venture capital, banking, legal, auditing and academic professions who are familiar with business opportunities. There is no application fee. MTDC makes investments on written business plans.

For more detailed information, please contact Carol Cedrone Brennan directly at carolbrennan@alum.mit.edu or discover MTDC's Web site at www.mtdc.com.

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The hidden perils of email

by Mary Casey, Esq, Susan Joyce, Webmaster, and Jean Sifleet, Esq., CPA

Email is more popular than ever since the tragic events of September 11, 2001. While email is safe from anthrax and other biological infections, it carries the risk of another damaging "infection" - the computer virus. A computer virus is a noxious computer application that attaches itself to an email message or a Web page. Like a human virus, it invades silently and invisibly, inflicting differing levels of damage depending on its program and purpose, and propagating itself across networks and email systems.

It's a crime to knowingly conceive or distribute a computer virus. The law has not defined the legal risks for the unintentional distributor of a virus. Since readily available steps will usually stop the accidental dissemination of a computer virus, ignorance and negligence may not be an adequate defense.

Recently, computer viruses have retrieved sensitive and confidential information stored on the infected computer and randomly distributed that information to addresses in the email address book stored on the infected computer, in the name of the owner of the infected computer. Depending on the sensitivity of the information, the size of the distribution, and the degree of resulting harm, the potential for damage to relationships and opportunities can be very high.

In addition to damaging relationships, computer viruses have the potential for causing severe damage to the recipients' computers and computer networks. At a minimum, they are a nuisance to isolate and remove, diverting resources from productive work to the task of restoring computers to their pre-infection state, if possible. The FBI estimates that millions of dollars are lost every year in the post-infection virus clean-up process.

Ignorance of the problem may not protect you from liability if it is your computer that is spreading sensitive information. The best protection may be to follow the traditional legal approach of taking the precautions a "prudent man" (or woman) would take. Under this rule, a person is obligated to employ the diligence, prudence, discretion, and intelligence that they should apply to their own affairs.

With a few precautions, you can reduce your company's exposure and potential legal liability. To minimize the legal riptides that may be lurking in these uncharted waters, take these basic preventative steps:

- Install virus protection on your computer (Norton and McAfee are 2 companies offering widely-used anti virus software products).
- Update your virus protection regularly (at least weekly, if not more often), which is easily accomplished by download when your computer is connected to the Internet.
- Run regular virus scans of your computer (again, at least weekly).
- Save files "to disk" when opening email attachments or downloading files from the Internet and run a virus scan of the saved file before viewing it.
- Scan a floppy disk or CD created on someone else's computer with your anti- virus software before you access and use the files stored on that media.

If your company runs an internal computer network, more extensive measures may involve your IS organization to implement, such as:

- installing (and regularly updating) virus protection on servers and firewalls
- hiring computer network security experts to audit your system's security on an regular basis

Now more than ever, email is an integral tool for business operations. To reduce the risk of legal and technical problems, take steps to upgrade your anti-virus protection and put business practices in place to assure appropriate use.

After teaming up to provide an update on Internet Law for the Worcester County Bar Association, attorneys Mary Casey (Casey@HarborLaw.com) and Jean Sifleet (Jean@SmartFast.com), and webmaster Susan Joyce (SJoyce@Job-Hunt.org), decided to work together on a book about the legal issues and pitfalls in doing business on the Internet. **VF**

Biting the hand that feeds you

By Anjan Chatterjee, T. V. Kumaresh, and Aurobind Satpathy

US-based automakers, once shining examples of businesses that did it all, have steadily handed over manufacturing to their suppliers during the past two decades. By the late 1990s, General Motors and Ford had spun off much of their remaining parts-manufacturing operations: Delphi Automotive Systems and Visteon, respectively. Today, DaimlerChrysler, Ford, and GM mostly design and assemble vehicles, and their suppliers mostly make what goes into them. For the original-equipment manufacturers (OEMs), competing fiercely in a maturing industry, deverticalization has meant moving their assets, activities, and inventories to their supply chains.

But the OEMs may have taken this strategy too far—squeezing their suppliers relentlessly, wringing out an endless series of price cuts, and extracting other operational and strategic concessions. As a consequence, most makers of auto parts have difficulty just maintaining, let alone raising, their margins, and many of these companies are earning less than their cost of capital. It isn't surprising that the market has turned against the suppliers, which are almost even with makers of fishing equipment in destroying shareholder value. If this trend continues, struggling suppliers may have to cut their investments in innovation and quality—which would in turn impair the OEMs' performance. Worse, automakers may have to reintegrate assets and activities they once proudly outsourced.

What went wrong? Suppliers are in trouble for a number of reasons—above all, their lack of bargaining power. The OEMs are substantially bigger than their suppliers (both Ford and GM have more than five times the revenue of the largest) as well as more concentrated (over 80,000 makers of auto parts around the world vie for the business of a handful of large and mid-size global OEMs). This concentration of power has given OEMs the opportunity to outsource and the ability to squeeze their suppliers, which are powerless to stop them.

And squeeze they do. Since 1995, the real price of cars in the United States has declined by approximately 0.5 percent a year. The OEMs' response has been to pressure the suppliers. Ford, for instance, has demanded and won a price reduction of 3 to 5 percent from several suppliers over the past few years. Other OEMs have won similar cuts.

Now OEMs have raised the stakes for suppliers still higher by striving to produce more car models while using fewer underlying vehicle platforms. At the same time, OEMs are trimming the ranks of the suppliers they buy from and shifting the responsibility for integration and even design engineering to the supply chain. Thus, the value of deals is rising for suppliers that don't want to be left behind. As the deals get bigger, so do the risks for suppliers that must invest in these new capabilities to win the deals and do the work. Lear Corporation, for instance, bought the United Technologies auto parts unit for $2.3 billion, hoping to make a strong bid to participate in GM's Delta Car program. GM's decision to postpone its launch delayed Lear's return on the investment. Having to compete for such business puts suppliers under even greater pressure to cut prices.

Of course, the OEMs are not responsible for all of the woes of the suppliers. To grow and to strengthen their bargaining power, suppliers closed more than 1,500 M&A deals from 1995 to 2000, but many of the resulting combinations ultimately failed to yield returns above the acquirers' cost of capital. Moreover, overcapacity is rife in some segments of the supplier industry.

It turns out that the suppliers' difficulties, from whatever source, are creating trouble for the OEMs. DaimlerChrysler, for example, had to delay the launch of its Smart Car for several months because suppliers, struggling with new processes and techniques, initially couldn't meet the carmaker's quality targets. More problems may lie ahead. If margin-constrained suppliers cut back on R&D spending, the kinds of product failures and recriminations that have rocked Ford and Firestone could become commonplace. Even worse, OEMs could face an increasing number of bankruptcies among suppliers or their exodus from the sector. If either should happen, OEMs may be forced to lend financial support to troubled suppliers of key systems—or even to become manufacturers again.

There are no easy solutions to such problems. In the near term, suppliers must continue improving operations to stay ahead of eroding margins. In the longer term, OEMs will need to explore strategies for improving the performance of the value chain as a whole. But don't hold your breath: OEMs too are under tremendous pressure and aren't likely to change their spots any time soon.

Anjan Chatterjee is a director in McKinsey's Detroit office, where T. V. Kumaresh is a consultant and Aurobind Satpathy is a principal.

Notes:

During the past five years, auto suppliers have graced investors with a return of 4 percent a year, while the return for the S&P 500 has been 22 percent. Capital is fleeing the sector.

The bargaining power that the automotive OEMs enjoy is unique. In the aerospace sector, for example, big buyers such as Boeing are matched by big suppliers such as GE. **VF**

New Event!

Recognition of entrepreneurs*

Last season the Venture Forum instituted a new event intended to give entrepreneurs an opportunity for a "60-second commercial." We are pleased to announce the return of this much-anticipated event.

After the keynote speaker and before the break, seven or eight entrepreneurs (first come, first served) will be invited to give a one-minute presentation from the podium. Our goal is to recognize entrepreneurs.

The one-minute rule will be strictly enforced and there will be no questions allowed. Each entrepreneur will be allowed to show one overhead slide, which you can bring or prepare on site. We will provide materials.

Each entrepreneur will be allowed only one opportunity to do this per each new business venture. Your main objective is to generate investments and/or advice through this opportunity, rather than sales.

**Definition of an Entrepreneur - One who organizes, manages and assumes the risk of a business or enterprise. This can include pre-startups.*

Then and now

Exciting times for Crescent Innovations

In April 2001, Al Prescott, president of Crescent Innovation, presented his case to the Venture Forum audience. He highlighted his company's plan to design a product that would treat people who suffer from temporo-mandibular (jaw) pain and have not responded to non-steroidal anti-inflammatory drugs (NSAIDs).

Preliminary animal testing of the NINJA, his non-invasive jaw approach, found it to be sterile and bio-compatible. Crescent Innovations was seeking $7 million at that time to fund additional animal and human clinical trials in an effort to commercialize NINJA.

Prescott is proud to announce that within the last six months, Crescent Innovations has achieved a number of important milestones. The company has been incorporated and brought on board its first early stage investor. Crescent has also entered into technology licensing negotiations and moved its offices from Groton to Worcester. "These are exciting times at Crescent Innovations," says Prescott.

The company is in the process of constructing a web site (www.crescentinnovations.com), which should be live by the end of the year. Those interested in learning more about Crescent Innovations can contact Prescott at alprescott@crescentinnovations.com. **VF**

Build a community to sustain your business through trying times

Continued from page 7

business with. And that causes them to leave money on the table and spend more than they should. Today, everyone in the company needs to have a customer-centric view and look for opportunities to do more and more for their customers and business partners."

For more information visit www.sbane.org or call 781-890-9070. Please join us and let YOUR voice be heard.

Jeff Shuman and Jan Twombly are the founders of The Rhythm of Business, a Newton, MA consulting firm that helps create awareness, understanding, and adoption of collaborative business. They are the authors of Collaborative Communities: Partnering for Profit in the Networked Economy (with David Rottenberg, Dearborn Trade 2001). Shuman is also a professor and director of Entrepreneurial Studies at Bentley College in Waltham, MA and the author of The Rhythm of Business: The Key to Building and Running Successful Companies (with David Rottenberg, Butterworth-Heinemann 1998). This article was written with the assistance of Rottenberg. **VF**

WPI Venture Forum

Collaborative for Entrepreneurship & Innovation
Department of Management
WPI
100 Institute Road
Worcester, MA 01609-2280

WPI Venture Forum Calendar of Events

January 8 - Entrepreneurial War Stories

February 12 - Alternative Financing

Directions to WPI Campus, Campus Center Odeum

From The East:
Take Mass. Turnpike (I-90) to Exit 11A (I-495). Proceed north to I-290, then west into Worcester. Take Exit 18, turn right at end of ramp, then an immediate right before next traffic light. At next light, proceed straight through, bearing to the right on Salisbury St. At the WPI sign, turn left onto Boynton St. There is parking in the large lot on the right behind Gordon Library or continue on Boynton St. then right onto Institute Rd., then right onto West St. Visitor parking is on the left after footbridge.

From The North:
Take I-495 south to I-290. Follow directions as from east.

From The South And West:
Take Mass. Turnpike I-90 to Exit 10 - Auburn. Proceed east on I-290 into Worcester. Take Exit 17, turn left at end of ramp, follow Route 9 west through Lincoln Square, straight onto Highland St. then right at light onto West St., through first intersection of West and Institute Rd. Visitor parking is on the left after footbridge. Additional parking on Boynton St. behind Gordon Library.