

**WPI Venture Forum**

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**WPI Venture Forum**

*Presents*

**Breakfast with Ken Olsen**

**Thursday, May 13, 1999**

**7- 9 AM**

**Westborough Marriott**

*R.S.V.P. by Monday, May 10, 1999*

*Seating for this event is limited*

*Please detach and mail response. Thank you!*



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Yes! I/we would like to attend Breakfast with Ken Olsen

There will be \_\_\_\_\_ attending

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# Venture

# VENTURE FORUM NEWS

Promoting and serving technology-based entrepreneurial activity  
www.wpiventureforum.org

Volume 8 No. 9  
May 1999

A Look at the Upcoming Meeting

## Getting Real Customers To Pay Real Money For Your Product

Tuesday, May 18, 1999  
WPI Campus  
Salisbury Labs, Kinnicutt Hall  
Registration: 6:00 PM  
Meeting Begins: 6:30 PM  
Admission Fee: \$5.00 Members  
\$10.00 Non-members

Every entrepreneur feels certain that his or her product idea will fill a market niche. How do you confirm this before making a major investment in product and company development?

Desh Deshpande, Founder and Chairman of Sycamore Networks, Inc., will talk about how to qualify the idea for a new venture. How do you know if your idea is too obvious or too wacky? How important is the idea versus implementing the idea? The speaker will draw on his experiences building successful companies and men-

toring several entrepreneurs in starting new companies.

Dr. Deshpande has garnered many top industry honors, including being named one of the "Visionaries of the Industry" (Communications Week, 1996), one of the "Top 25 Technology Drivers" (Network Computing, 1996) and "Entrepreneur of the Year" (1995). He has also been the subject of numerous business and trade press articles. Prior to co-founding Sycamore Networks, Dr. Gururaj "Desh" Deshpande was founder and chairman of Cascade Communications. He grew the company from a two-person startup to one with \$500 million in revenue and nine hundred employees, and sold it to Ascend Communi-



*Desh Deshpande, Founder and Chairman of Sycamore Networks, Inc.*

cations for \$3.7 billion in June 1997.

Prior to Cascade, Dr. Deshpande co-founded Coral Network Corporation, served in various management positions for Codex Corporation, a Motorola subsidiary, and taught at Queens University in Kingston, Canada. Dr. Deshpande also serves as the chairman of Cimaron Communications – a leader in silicon solutions and ASIC cores for high-speed SONET systems – and WebDialogs, Inc. – a startup focusing on Internet-based customer interaction technology.

Dr. Deshpande holds a B.S. in Electrical Engineering from the Indian Institute of

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**Win \$10,000 in Cash and Services**  
Business Plan Contest Information on page 11

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### WPI VENTURE FORUM CALENDAR OF EVENTS

- May 13, 1999** – "Breakfast with Ken Olsen"
- May 18, 1999** – Getting Real Customers to Pay Real Money for Your Product
- June 15, 1999** – Business Plan

May Meeting Sponsors–

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## WPI VENTURE FORUM

The mission of the WPI Venture Forum is to promote and serve technology-based entrepreneurial activity and economic growth in the region by increasing the business and financial knowledge of the participants through sharing experiences with entrepreneurs as well as area business, financial and educational leaders.

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Letter From the Chair

# Technology Licensing Issues Of Interest

By Brian Dingman

Technology licensing as a means of technology exploitation, is, in my experience, becoming more commonplace. The reasons for considering licensing vary, but often, the technology developer (the licensor) is not the best party to offer the product in the marketplace. Rather, a company with established distribution channels and a proven track record in the industry, is the logical choice to sell the product.

This scenario is particularly prevalent with technology entrepreneurs and small businesses. You have the ideas, but not the horsepower to get them into the marketplace.

So, what do you do? Well, you could go get a job with the big company, but the chances are that if you're reading this, you've probably "been there and done that" (never to be done again), or, the idea may never have occurred to you! More seriously, this is a thorny issue which is not so easily resolved.

Without doubt, however, you will be best served by taking all reasonable steps to protect your intellectual property from other parties, including potential licensees and all other third parties, preferably *before* you begin any discussions with prospective licensees. This will generally entail exploring the issues of patentability and/or the susceptibility of the technology to trade secret protection.

Once these steps are taken, you will begin to take steps to approach potential licensees. If you are planning to rely on patent(s) as a means of protecting your technology, it is important to have a solid non-disclosure/non-use contractual agreement with these parties before making any confidential disclosures to them. This is so because your pending patent rights are not enforceable until the patent(s) actually issue, a process which can take up to two years, or more. Once the patents issue, these early agreements are usually entirely irrelevant.

Once you begin negotiations, the issues, and their resolution, are almost as numerous as are license agreements themselves. Without going into much detail on any issue, I have found that

an effective early strategy is this. Once the time is right to begin discussion of substantive licensing issues, you should *personally* negotiate the key issues which every deal must have, and,



without agreement on which, your deal will not fly. You may never have done this, but I can tell you from experience that business people like to deal directly with the principal(s) of the other party, and personally come to a basic understanding with them. This will create a solid footing on which a successful agreement may be built, and without this, you will likely waste a lot of everyone's time chasing an ever more elusive deal. Plan to draft a letter of intent, or some equivalent written document, reflecting that basic agreement. You can then resolve the remaining issues with confidence that an ultimate agreement is more and more likely.

As to those key considerations, my laundry list would read as follows: definition of the property being licensed, geographic and market scope of license, exclusivity, term in years, royalty rate, and up-front payment. That's it. If you can agree on these, both sides will be eager to enter the agreement, which will greatly facilitate and speed the remaining negotiations, and the drafting and execution of the agreement. And, remember that any license absolutely *must* be mutually beneficial to work in the long term.

Best of luck.

Brian Dingman is a partner in the Westborough intellectual property law firm Niels, Lemack and Dingman. Brian can be reached at (508) 898-1818, or by email at [NLDlaw@aol.com](mailto:NLDlaw@aol.com). **VF**

# Patents for Software and Computer-Related Inventions

By Brian Dingman, Intellectual Property Law, Nields, Lemack, and Dingman

Companies devote enormous resources to the development and commercialization of computer-related technologies. Much of the time, effort, and money is devoted to software development. Such technologies are, to a great extent, the key to corporate welfare, and investor returns. Yet the patentability of computer-related inventions has been questioned by, ignored by, or dismissed by many in the field.

The basic premise of the patentability of software has been and continues to be debated. The debate often centers on the public policy reasons for and against software patents. This debate is likely to continue for some time. However, business people whose livelihood depends on software and other computer-related technological advances put themselves at a competitive disadvantage if they do not understand and consider the issues concerning the patentability of computer-related inventions, as well as the timing requirements for securing such patent protection.

## What are Patents?

The United States Congress has chosen to allow the patentability of "anything under the sun that is made by man". This thought has been codified as Section 101 of Title 35, United States Code (35 U.S.C. § 101) as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent there-

fore, subject to the conditions and requirements of this Title.

The Courts have interpreted this law to exclude from patentability abstract ideas, laws of nature, and natural phenomena. However, a practical application or use of such an abstract idea, law of nature, or natural phenomenon is indeed patentable. A patent allows the patent owner to prevent any other unauthorized party from making, using, selling, or importing into the United States anything falling within the scope of the patent claims. The term of a patent is twenty years from the patent application filing date. However, a patent is not enforceable until the patent application is examined for patentability by the U.S. Patent and Trademark Office, and issued as a patent. This examination process can take two to three (or more) years from the application filing date. Thus, the effective term of enforceability of a patent is typically about seventeen or eighteen years from its issuance.

In the fast-moving world of computer-related technologies, this patent term can represent a number of product lifetimes. The expected life of the technology is clearly an issue that needs to be addressed in making the threshold determination as to whether to apply for patent protection. However, patents can and often do cover the idea or ideas embodied in the technology, and often times these ideas have a useful life (to the developer and/or to business partners) which extends well beyond the life of the product; for example, the patented invention may be embodied in not only the first product, but also in related, follow-on or replacement products..

## The Patentability of Computer-Related Inventions

There has really never been any serious debate as to the patentability of computer hardware, either from the point of view of the patent laws, or the public policy issues surrounding the laws. Such is clearly not the case with software, however. Machines and manufactures (products) are statutory subject matter of patents. However, processes are as well. Under the patent laws, the

term "process" means process, art, or method, and includes a new use of a known process, machine, manufacture, composition of matter, or material. Accordingly, if computer software may be defined as a statutory "process", under the patent laws, software should be patentable.

The U.S. Patent and Trademark Office in the past had some difficulty applying the patent statute to applications for computer software patents. These problems often arose based on the Patent Office finding that the software did nothing more than solve mathematical problems or manipulate abstract ideas or concepts, and thus was not proper statutory patent subject matter.

Despite the confusion, the Patent Office has for years been granting patents for software and software-related inventions. Some examples of such patents include: a raster-scanning engine driver for increasing resolution of half-tone dot printing; a system which detects the presence of, and separates the contributions from, multiple sources that compose a wide-band signal; a computerized method of generating film masters for embossing and printing color images; a method of determining the premium for, and writing a policy insuring against specified weather conditions; a method for insuring the funding of a future liability of uncertain cost; an apparatus and method for spectral enhancement of body-surface images to improve the detectability of subtle features; and a system and method for emulating a mouse with a touchpad.

## Patent Office Guidelines on Computer-Related Inventions

In order to help resolve this confusion, the Patent Office issued examination guidelines for computer-related inventions, which were published to provide guidance for the public, patent attorneys, and patent examiners, in determining the patentability of computer-related inventions, particularly software inventions. Those guidelines make clear the patentability of software inventions, and include specific examples on the application of the guidelines. ►

Continued on page 10

# Creating a Corporate Image

By Phyllis M. Hanlon

With all the speed and efficiency of the Lycos search engine, Ken Lang, Chief Technical Officer (CTO), capably guided Venture Forum attendees through his fascinating presentation on corporate image. Vice-President of Marketing for Lycos Jan Robert Horsfal was originally scheduled to speak, but met with a conflict.

Lang briefed the audience on his success with WiseWire, a spin-off company resulting from research done at Carnegie Mellon University. WiseWire was born at the urging of Lang's academic advisor who persuaded him to terminate work on his thesis and "start the company." Giving this attempt at entrepreneurship his all, Lang plunged ahead and has never looked back. The initial months were difficult he admitted. He warns that an "entrepreneur wears 50 hats. The object is to get rid of the hats one by one."

At this point Lang has shed all of his hats, except for one, that of Chief Technology Officer for Lycos. Lycos had been using WiseWire technology in conjunction with their own search engine. Combining the efficiency of the Lycos technology with the features of WiseWire - "watching users use the web, getting feedback, and using that feedback to learn the user's interests" - demonstrated a "convergence of interests." This relationship brought about the inevitable marriage of the two entities.

In his role as CTO Lang is able to pursue his true love: the "organic growth" aspect of Lycos. He has developed a spreadsheet model that measures the growth of the technological products that Lycos develops. With 48.5 percent of all Internet users coming to Lycos each month, he is



Photo by Ron Bouley

Ken Lang, Chief Technical Officer (CTO) of Lycos.

determined through research and development to eliminate the "bandwidth bottleneck" that is preventing the inevitable Internet entertainment explosion.

This union has reduced duplication efforts, increased simplicity and speed of operation, provided a better alignment of interests, and enabled the company to "get big fast," an oft-repeated comment by Lang.

Lang still sees a need for deeper research and development though for continued success in the Internet market. "The easy, low-hanging fruit has been taken," he said. With all of the PhD's doing research these days, new web applications are abundant. In fact, the supply is exceeding the demand right now, Lang said. He also perceives a need for more content and structure on the web. The term "new media" has no one single definition. The concept has become applicable to anything you can attach advertising to.

"As an entrepreneur you want to do something to change the world," Lang said. He emphasized that you should aim to have fun while keeping the start-up mentality. Enthusiasm helps to keep the momentum going in order to get the company off the ground. Your positive corporate image is dependent on "hard-core commitment." A half-hearted undertaking is destined to fail. He knows, since he experienced four such defeats before successfully launching WiseWire.

The Internet "Gold Rush" is as strong as ever; however, in order to compete and succeed in this wide open field, Lang reminds entrepreneurs to raise more money than you think you'll need in the initial stages and use your plethora of ideas to get past the critical mass. Portal partnering and strong marketing have become more critical than ever before in this rapidly growing industry.

In answer to audience questions, Lang reiterated that targeted advertising is the best way to achieve revenues. However, this particular media still has a long way to go. Lang feels that the balance will shift when people stop watching television and start spending more time online. Eventually he foresees the Internet grabbing a larger slice of the \$200 billion that is currently spent on annual advertising.

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## Case Presentation

*Click2commerce, Inc.*

*Hari Ravichandran, Chief Technology Officer*  
*Ravi Agarwal, Chief Executive Officer*

"Our vision is to provide everything a small business needs to succeed on the Net," said Ravi Agarwal, CEO of Click2commerce. His company is a free site that prospers by selling demographic information obtained upon sign-up to other businesses. Presently Click2commerce has six partnerships and 400,000 members with more than 100 customers signing on daily. Agarwal says that 98 percent of the 25 million businesses in existence are small companies. Of that number, 1.8 percent have Internet access. His company plans to tap into that market.

Click2commerce promises small companies several benefits: the company claims to lower

Continues

customer service costs by doing business via email; the company helps small businesses to establish credibility in this technologically advanced world where web pages are common; and the company assures increased sales with a 24/7 storefront and access to international, as well as national, markets.

Agarwal cites four different services provided by Click2commerce:

**1. Click2site** - This area of website hosting and online creation tools enables customers to set up their own business web page without having to know HTML or any other advanced technological systems.

**2. Click2cart** - This service offers transaction processing or e-commerce for existing sites.

**3. Click2commerce** - This sector acts as a business portal that sells office supplies and hosts bulletin boards and chat rooms.

**4. Click2store** - This virtual catalog acts as a transactional storefront for its customers.

The company's main strategy is to reach customers by partnering with small business affinity groups. Also, by providing easy-to-use web sites and giving away content and special offers, Agarwal hopes to attract more customers. He sees banner advertisements, e-commerce upgrades and community selling as potential revenue sources. Click2commerce offers a wide range of office supplies at discounted prices through their own alliance with Staples. In addition, Click2commerce can provide payroll processing to its customers.

Click2commerce has formed strategic alliances with Sprint, Entrepreneur magazine, as well as with other major companies. Agarwal foresees the company's affiliation with the authors of the book *Men Are From Mars, Women Are From Venus* as one key to their future growth and exposure.

By continuing to serve the existing customer base and leveraging existing distribution channels, Agarwal looks for growth and name recognition. Since no other heavyweight contender occupies a secure position in the market right now, both Agarwal and CTO Hari Ravichandran expect to continue their path of growth and expansion.

### Panel Review

Andy Devereaux, Managing Director of American Capital Company, urged Agarwal to imbed his company into the customer. This field holds zero loyalty but switching from one Internet service provider to another poses unpleasant financial



Photo by Ron Bouley

Ravi Agarwal, CEO of Click2commerce.

penalties to customers. Devereaux is concerned that this business plan has a "mall mentality." He suggests migration from the consumer market to the commercial market. He also strongly recommends signing up ten or more partners to expand the financial breadth of the company. Devereaux sees natural opportunities in national organizations such as the Chamber of Commerce and other "movers and shakers."

"You need to decide which of your four businesses you plan to focus on," said Lee Neubecker. As Senior Product Marketing Manager and Online Community Products Manager at Lycos, Neubecker deals regularly with the e-commerce industry. Experience has taught him that the market is highly competitive, making it vital for a start-up company to find a unique niche. He feels that the window of opportunity will close in six months, so timing is critical.

Neubecker dismissed the ideas of selling products to businesses and online consumers as not compelling enough. The main focus of Click2commerce, he felt, should be the selling of e-commerce tools to other businesses. Small to medium sized manufacturers generally rely on a personal advisor or an MIS consultant. By targeting these non-technical end-users, Click2commerce can create a "lock in" so the powerhouses cannot unseat them. He also recommended partnering with Peachtree or Solomon to generate extra fees and solidify the "lock in" position.

As Executive Vice President of Schwartz Communications, Inc., Carol McGarry concentrated her comments on the marketing aspect of Click2commerce. Her concerns for the company

focus on the challenge of keeping pace with technology and "breaking through the clutter" to be seen and heard above the thousands of media outlets competing for customers.

McGarry recommended market research that would identify major competitors. By providing compelling claims to superiority over these other companies, in terms of benefit to customers, Click2commerce should be able to expand and maintain a stronghold in the industry.

She encouraged Agarwal to implement some creative ideas. Retaining a small, well-known business guru to act as a spokesperson for the company would provide a link to name recognition. National business magazines are always interested in "quirky, human interest stories." By planting the seed for articles of this type, Click2commerce could reap the benefits of nationwide exposure.

Finally, McGarry urged that Click2commerce "go for the verticals." In her opinion, "mass media are the biggest influencers" and could provide the key to success.

Audience participants offered the idea of wire stories and the use of traditional media to reach potential customers not already online. One attendee predicted that "this medium [the Internet] could be more powerful than the Industrial Revolution."

Agarwal and Ravichandran are hopeful that he is right. Their goal is to catch the elevator ride on the way up.

*Phyllis Hanlon is a freelance writer with experience in the technical, journalistic, business, and creative non-fiction areas. She has written technical manuals for financially oriented software programs as well as magazine and newspaper articles covering women's and family issues. With her marketing skills she has created brochures, newsletters, press releases, print ads, and articles for area businesses. Phyllis can be reached by phone at (508) 248-5161, by fax (508) 248-5353, or by email Polishpen@aol.com. VF*

# Developing The “Right Management Stuff”

By Harvey Simkovits, President, CMC

A business is only as good as its management team. As your independent company grows and evolves in today's shifting marketing place, it is vital to make sure your executives and managers are keeping up in their job positions. Here are five dimensions along which to stay ahead in today's world of more rapid economic change, and increased company and industry complexity.

## 1. Assessing Career Credentials

An executive or manager's accumulating education, background and work experience provide them with a set of business, organizational and career credentials. Everything an executive or manager does, both inside and outside work, can add or take away from those credentials. For example, taking on optional leadership roles or educational opportunities either in your company or in the community can add to their credentials. Conversely, accumulating a random set of unrelated job positions or educational programs can significantly take away from their value.

Some job opportunities in a person's career occur serendipitously. However, without a clear direction, a person's career could be viewed as a random set of jobs with no clear focus or pattern. Over the long-term, a career-oriented person needs to exhibit a logical progression of greater job responsibility or increasing personal capacity across one or more of three fundamental career areas: a) developing an expert capability, b) building increased management responsibility, or c) taking on calculated entrepreneurial ventures. There is nothing wrong with seeing someone shift their career focus across these

three areas, as long as past experiences add to the value of the person's current career focus. For example, I moved my career from a technical/engineering focus, to a managerial focus, and then to a management consulting practice over the span of my work life.

## 2. Analyzing Job Roles

Managers play a number of roles in their positions. They wear different hats to deal with:

- Individual staff members
- Their department or whole staff team
- Their peers (in the department or divisions) across the organization
- Outside customers, suppliers or strategic partners.
- Their immediate manager (and/or other high-level stakeholders in the business)

For each role, a manager needs to be clear about the demands and expectations that each group of people (e.g., customers, peers, staff, etc.) are making of him or her. In this way, they can best consider and gauge their responses and job goals to those demands and expectations. Without clarity of expectations and goals there can be misunderstanding, confusion and loss of efficiency between a manager and those with whom he or she need to work. Also, to progress in their roles, managers must be able to define and implement their goals effectively, as well as to evaluate their performance objectively.

## 3. Building Job Skills

Not only do managers play various roles in their position, but they also need to develop critical skills to play these roles well. These skills are

generally transferable from job position to job position. Typical job skills include:

- Technical proficiency (being knowledgeable in a technical field)
- Work management (work planning, coordinating, budgeting, tracking, reporting, etc.)
- Staff management (performance management & improvement, leadership, etc.) Peer and boss interaction (communication, influence, negotiation, etc.)
- Customer service or relationship skills, and supplier negotiation and collaborations
- Self-management (time, stress, risk and change management)

It is crucial that managers and executives regularly assess their managerial skills to determine their skill strengths and weaknesses. They can then work to develop and practice relevant job skills over time. Building managerial skills enhances the manager's value to the organization and helps him/her get things done more effectively and efficiently.

## 4. Developing and Balancing Personal Style

Life flavors of ice cream, we all have different personal styles. Most importantly, we want to ensure that a manager's style fits their organizational position. Not long ago, I worked with a company CFO whose boss, the president of the company, felt he lacked good time management and personal organizational skills. We determined that this executive's preferred orientation was for technical projects rather than main- ▶

*Continues*

taining systems and controls for accounting and finance. Therefore, this manager was not well suited for his current job. Taking that information to the CFO's boss, the president said "No wonder this person is having problems in their current job!" The president then started a process to find the right project- management position in the organization for his CFO.

## **5. Building and Exhibiting Character**

Every boy or girl scout knows what good character is. No matter how outwardly capable a manager or executive is as an individual, without sound character they can be perceived by others as just "an empty suit". For me, character boils down to three critical elements:

- Initiative - not waiting to be told (by a boss or customer) to act on a problematic situation or potential opportunity. Initiative involves approaching situations as if one owned personal responsibility for it. With initiative must also come resourcefulness and determination to see things through to their completion.
- Integrity - keeping one's word. Without integrity, a manager cannot build credibility. Integrity is also about knowing who you are and what you "stand for". Without that, one has little in terms of true identity and self-worth.
- Intentionally - having a positive attitude and a personal commitment. It means that being out for the best interests of not only oneself, but all those around them. If a manager lacks commitment to others, then they will have trouble in completely fulfilling their work. Managers especially need to be able to balance the needs of all parties to progress and succeed in their work endeavors, goals and initiatives.

As a business owner or executive, it is critical to speak to these three character elements in setting the operating philosophy of your managerial team. Working on character builds managerial strength and resilience, as well as portrays credible company leadership.

Continual attention to these five dimensions will help your managers get and stay ahead in their professional work and career. You may even consider tying these dimensions to managers' performance reviews as a way to keep focus on their development. Note that a 1% compounded improvement every day yields a doubling of a person's effectiveness every 70 days. Valuable managers and executives commit themselves every day not just to their personal development but also to the development of all those around them.

*Harvey Simkovits, CMC, is an advisor to independent business and lives and works in Lexington, Massachusetts. For more information, visit Innovative Management Systems at their web site - [www.ims-ils.com](http://www.ims-ils.com) or call 781-862-3983. **VF***





# Don't miss the opening season! 1999-2000 WPI Venture Forum

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## Estate Tax Relief for Owners of Small Businesses

By Robert S. Heppe, Attorney, Mirick O'Connell

**W**e all groan when a tax practitioner recites tax acronyms like a secret code. However, if you own your own business, or advise those that do, the qualified family-owned business interest, QFOBI, may stifle the groan.

One of the concerns of a family business is the threat of being forced to sell at the founder's death to pay estate taxes. A marginal estate tax rate that climbs to over 50% often means either an outright sale to pay taxes or a business weakened by borrowing to meet the tax bill. Succession plans intended to pass the business to the children, Mary and John, often fail to address their silent partner, Uncle Sam.

Congress now has some relief for the family-owned business, the QFOBI deduction. Like so many breaks in the tax code, the tax payer must be willin to die to use it: considering the inevitability, this requirement is a timing standard designed to produce a tax benefit at the time the tax burden accrues.

### What Is A QFOBI?

Generally a QFOBI is an interest in a domestic trade or business in which:

- The decedent and members of decedent's family own 50% of the trade or business;
- The decedent and members of the decedent's family (owning at least 30%) and another family own 70% of the trade or business; or

- The decedent and members of the decedent's family (owning at least 30%) and two other families own 90% of the business; and

- With regard to the above, the decedent or members of decedent's family must have materially participated in the family-owned business 5 out of 8 years ending on the death of the decedent. A qualified heir must continue to participate for each 5 out of 8 year period in the 10 year period after the decedent's death. Material participation means working at or participating in the management of the trade or business. A qualified heir is either a family member or an employee employed by the QFOBI for at least 10 years before the decedent's death. Family members include ancestors, spouse, and spouses of lineal descendants.

### 50% Threshold

In order to be eligible for the QFOBI deduction, QFOBIs must exceed 50% of the adjusted gross estates (gross estate less debts and mortgages). For purposes of determining the 50% threshold, both taxable gifts and nontaxable annual exclusion gifts of business interests are counted. By virtue of this expanded definition, a decedent no longer having the applicable percentage of ownership at his death may still qualify for the deduction. This is a two-edged benefit, i.e., the value of gifts made over time to other family members utilizing the \$ 10,000 annual exclusion is counted for purposes of the 50% thresh-

old, but is not added back to the taxable estate for purposes of calculating the estate tax.

### When Does It Occur?

Obviously, the QFOBI benefits occur when the decedent's estate tax return is filed. Eligibility for the benefit is subject to requirements that occur both prior to and after the decedent's death. ►

*Continued on page 11*

## Patents

Continued from page 3

In determining the patentability of software inventions, the Patent Office will review the patent application and identify and understand the practical application asserted for the invention. Since patentable subject matter must be “useful”, it is necessary that the software patent application set forth at least one practical application of the claimed invention. In other words, there needs to be some indication as to why the patent applicant believes the claimed invention is useful.

The Patent Office will also review the detailed disclosure and specific embodiments of the invention as set forth in the patent application to determine what has been invented. There will be a determination of what the programmed computer does when it performs the processes dictated by the software, a determination of how the computer is to be configured to provide that functionality, and a determination of the relationship (if any) of the programmed computer to other subject matter outside the computer that is involved in the invention. Examples of the latter include physical acts to be performed outside the computer independent of and following the steps to be performed by the programmed computer, and manipulation by the software of data input to the computer representing physical objects or activities.

The Patent Office will then review the patent application to determine whether it meets the statutory subject matter requirements of 35 USC § 101, set forth above. It is clear that computer programs representing nothing more than computer listings, or data structures representing only descriptive material, are not patentable per se, as they are neither physical things, nor acts being performed. However, computer-readable medium encoded with a computer program defines structural and functional interrelationships between the computer program and the medium which allow the program's functionality to be realized, and is thus statutory patent subject matter.

When the computer program is claimed in a process where the computer is executing the program's instructions, the application is treated as one for a process. On the other hand, when a computer program is recited in conjunction with physical structure, the application is treated as one for a product. Accordingly, patent claims which define the physical structure of the

machine in terms of its hardware, or hardware and software combination, clearly define patentable subject matter.

If the software claims are set forth as a series of steps to be performed by a computer, to be patentable the process must either: (1) result in a physical transformation outside the computer for which a practical application is disclosed, or (2) be limited to a practical application. As discussed above, computer software claimed in combination with post-computer process activity is patentable. An example is a method of controlling a robot which uses stored data that represents mechanical movements of the robot, uses a computer to calculate the positioning of the robot in relation to tasks to be performed by the robot, and controls the robot's movement and position based on the calculated position. The “control” is the post-computer activity.

Also as discussed above, processes that require the measurements of physical objects or activities to be transformed outside of the computer into computer data are also patentable. An example would be a method of using a computer processor to receive CAT scan data, perform calculations on the data relating to distinguishing pixel elements, and display the resulting image.

A software process that merely manipulates an abstract idea or performs a purely mathematical algorithm is not patentable. For such subject matter to be patentable, the claimed process must be limited to a practical application of the abstract idea or mathematical algorithm. For example, a process that calculates an algorithm that models noise is not statutory. However, a process for digitally filtering noise employing the mathematical algorithm is patentable.

### Patent Application Timing Requirements

The patent laws require that any patent application for an invention be filed in the Patent Office within one year of the first publication, public use, offer for sale, or sale of the invention. If a patent application is not submitted in that time period, the right to obtain a patent is forever lost (barred), and the invention enters the public domain.

Since for-profit corporations typically do not publish or publicly use their inventions before they are offered for sale, the “on sale bar” to patentability is of most concern. The courts have recently clarified the definition of when an

invention is “on sale” in terms of the patent statute. It is critical that such commercial activity be monitored in order to maintain the right to obtain a patent.

The law is now clear that an invention is on-sale when two conditions are satisfied. First, the product embodying the invention must be the subject of a commercial offer for sale. Typically, a signed purchase agreement will constitute an offer for sale, although less well defined commercial activity may also be sufficient. Second, the invention must be “ready for patenting”. That condition may be satisfied in at least two ways: by proof of the reduction of the invention to practice, or by proof that the inventor had prepared drawings or other descriptions of the invention that were sufficiently specific to enable a person skilled in the field to practice the invention.

Since computer software is often provided to customers (or potential customers) before it is “sold” (e.g., to beta test sites), there may be instances in which the invention is inadvertently “on sale” well before the first product is actually “sold”, as the term is commonly understood in business. Be aware that if the software is sufficiently defined, for example by specifications or flow charts or their equivalent, so that it could be practiced, it is probably “ready for patenting”. And, if software at this early stage (which could be well before even the earliest version is ready for testing) is even arguably offered to a customer in a manner which could be construed as an “offer for sale”, the “on sale bar” could well apply.

### Conclusion

There is no question that computer-related inventions, including hardware, software, and systems and methods comprising hardware and software together, are patentable. If you are in a business in which you are making technological advances or improvements in these fields, you should consult with your patent attorney (well before any possible “on sale bar”) to consider the possibility of enhancing the proprietary position of your company by way of patents on your technology.

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## Business Plan Contest Begins!

### Sharpen your pencils...gather your napkin notes...it's time to write that Business Plan!

Each year, the WPI Venture Forum awards a \$10,000 prize to an entrepreneur who has written a great business plan - \$5,000 in **CASH** and \$5,000 in business services. It could be **YOURS!**

To be eligible, business plans must involve technology-based ventures and describe the development of a new product, application or process in an existing business, or the start-up of a new business. Plans are judged by a panel selected from professional service and advisory groups. The winner will present his/her business plan at the Venture Forum's September 1999 meeting.

To enter the contest, complete the entry application and mail it, along with your business plan and the \$25 application fee, to WPI Venture Forum, 100 Institute Road, Worcester, MA 01609. The entry deadline is

### Business Plan Contest Entry Application

Applicant Name/Title: \_\_\_\_\_

Name of Business: \_\_\_\_\_

Address: \_\_\_\_\_

Phone: Fax: Email: \_\_\_\_\_

Date Established/Target Launch Date: \_\_\_\_\_

Structure:  Proprietorship  Partnership  Corporation  
 LLC/LLP

Type of Business:  Manufacturing  Distribution  Wholesale  
 Research  Service  Other

Business Stage:  R&D Mode  Start-up  Revenue Producing

Number of Employees: \_\_\_\_\_ Full-time \_\_\_\_\_ Part-time In 3 years

I certify that the Plan submitted with this application is my original work to which I have all rights of ownership.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

## Estate Tax Relief

*Continued from page 9*

**Prior To** - Decedent or decedent's family must have owned and participated in the business for at least 5 of the 8 years ending at his/her death. **After** - If a qualified heir or members of the family fails to materially participate for each of the 5 out of 8 year period in the 10 years after the death, then there is a recapture of the estate tax that would have been payable without the deduction. If recapture occurs, within the first 6 years after the decedent's death, there is a 100% recapture of the tax benefit. Recapture phases out over time but is still 20% in year 10. Recapture includes not only the tax but also interest at the statutory rate from the original filing date.

### How Much?

The amount of the deduction is the adjusted value of the QFOBIs (QFOBIDA) and is deducted from the gross estate. Adjusted value is the value of the business interests reduced by the sum of claims against the estate and unpaid mortgages over the sum of any indebtedness on qualified residences, indebtedness incurred for the payment of educational and medical expenses of the decedent or the decedent's dependents and other indebtedness to the extent less than \$10,000. The QFOBIDA may not exceed \$675,000 and interacts with the applicable exclusion amount (AEA) protected by the Unified Credit.

The AEA is being increased over the next 8

years starting at \$625,000 in 1998, to a maximum amount of \$ 1,000,000 in 2000.

However, where a QFOBI deduction is taken, the AEA is frozen at the 1998 level of \$625,000 unless the aggregate amount of all QFOBIDAs is less than \$675,000. In such a case, the AEA is increased dollar for dollar by the excess of \$675,000 over the QFOBIDAs allowed, but not above the AEA that would apply in that year if there was no QFOBI. Hey, it's tax law, nobody said it wasn't going to be a mouthful.

Not all interests in a trade or business qualify as a QFOBI. For instance, an interest in a trade or business, other than a bank or a domestic building and loan association, does not qualify if more than 35% of the adjusted ordinary gross income for the trade or business for the year that includes the year of the decedent's death would

qualify as personal holding company income if the trade or business were a corporation.

However, income from a lease of property on a net cash basis by the decedent to a member of the decedent's family will not be treated as personal holding income, and such leased property will not be disqualified as a QFOBI if the family member uses it in an active business. The QFOBI deduction can be a significant portion of a relatively small business or a small percentage of a relatively large business in which the decedent has transferred controlling interest during his or her lifetime.

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