

PHASE III

COMMERCIALIZATION^M

SPRING 2009

11

STEPS^{OF}
DUE DILIGENCE

THINK GLOBAL:

Alternative Energy

Outside the Borders

Clearing the Path to Commercialization

Understanding Negative Covenants:

Keep **Your Business**
Out of a **Precarious Situation**

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EDITOR'S NOTE

FOCUS ON BUSINESS SUPPORT

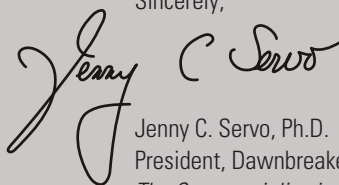
Small businesses, especially advanced technology firms often require specialized support to aid their efforts to align innovative technology with the business realities of the market. Firms need information and guidance to foster their sustained growth. At the federal and local levels government leaders have recognized the need to spur and nurture entrepreneurial endeavors, evidenced by programs like the U.S. Small Business Administration's Small Business Development Centers, as well as technical and commercialization assistance provided to the SBIR community. The significance of these business support mechanisms cannot be understated during this challenging economic climate.

The importance of commercialization in the SBIR community has not lessened as the economy has been rocked, and the funding agencies still have high expectations of their SBIR firms. Knowing now more than ever that the economy can turn on a dime, it is important for small businesses, especially advanced technology firms relying on government R&D funding, to be prepared for any eventuality. The articles in this issue of *Phase III Commercialization* magazine take the volatility of the markets into consideration, with the realization that business doesn't just halt itself in a bear market situation. Funding will be sought, manufacturing will move forward, businesses will still be bought and sold.

We at Dawnbreaker believe that knowledge is power and we strive to provide timely, helpful information to small businesses that are committed to growth in their chosen market. That is why we produce *Phase III Commercialization* magazine, now in its third year of production. Our approach cuts across agencies, disciplines and industries and focuses on three broadly defined content areas—medical, energy and defense. As in past issues, we also highlight commercialization strategies that advanced technology firms use and potential financing options.

We hope you enjoy this publication. Our goal is to provide insight and information to those who are intent on being successful in transitioning, commercializing or infusing their technologies into the marketplace. Please feel free to send us suggestions for future articles you would find of interest.

Sincerely,



Jenny C. Servo, Ph.D.
President, Dawnbreaker, Inc.
The Commercialization Company



REVIEW BOARD

David Metzger

A partner at Arnold and Porter, LLP and a member of the Virginia, District of Columbia and Wisconsin Bar Associations, Metzger practices in the area of government contracts, concentrating on all aspects of federal government contracting law. Admitted to practice before the U.S. Supreme Court, Court of Federal Claims and Court of Appeals for the Federal Circuit, he has prosecuted and/or defended bid protests, terminations for default, and suits involving prime contractors and subcontractors. He received his B.A. and his J.D. from University of Wisconsin.



Jo Anne Goodnight

The NIH and DHHS Public Health Service SBIR/STTR program coordinator, Goodnight also serves as acting director for the Division of Special Programs in the Office of Extramural Research. In her 25 years of government service, she has held a variety of positions encompassing research, program administration and management for the U.S. Department of Agriculture, the Food and Drug Administration and the National Institutes of Health. She has also published numerous scientific studies during her tenure. Goodnight holds a Bachelor of Science in microbiology from Virginia Tech.



Brent Brown

Managing Partner of Madison Parker Capital, a Boston based boutique investment firm, Brown is an active advisor, investor and partner to leading advanced enabling material and technology companies. Through his career, including time as an investment banker for Canaccord Capital where he helped to develop the firm's Advanced Enabling Materials franchise, he has been involved with the financing, acquisition and/or sale of 36 companies with an aggregate value of \$2.8B. Brown has a B.S. in engineering from the U.S. Military Academy at West Point, a master's in engineering from Southern Methodist University and an MBA from Harvard.



John May

Co-author of the book, *Every Business Needs an Angel*, May is the managing partner of New Vantage Group, a Vienna, Va. based firm that mobilizes private equity capital into early-stage companies. He administers four regional angel funds—the Dinner Club, eMedia Club, the Washington Dinner Club and Active Angel Investors, and has joint ventures with other angel networks. May also works in the venture fund arena, serving as an investment director and general partner in Seraphim Capital based in London and as the managing general partner of two U.S.-based venture capital firms.



Richard Sun

Founder and owner of Sun & Co., Sun brings more than 30 years of banking and investment experience to his clients—offering capabilities in startups, venture capital, private equity investment and fund management. He has originated, structured, placed and closed over 70 deals valued at over \$4B and has originated and led over 30 advisory assignments valued at over \$7B. He has played a role in over 25 startups, including TerraCycle, which was named the "Coolest Little Startup in America" by *Inc.* magazine. Sun holds a bachelor's degree from Princeton and an MBA from NYU.



Tallam Nguti, Esq.

Presently senior patent counsel for Xerox Corporation, Nguti received a B.S. in engineering from Purdue University, an MBA from Purdue's Krannert School of Business, and a J.D. from Valparaiso University. Prior to law school, he worked for 12 years—first as a managerial trainee for Johnson & Johnson, and then as a manufacturing engineer for Zenith Radio, BRK Electronics and Lever Brothers. In the 20 years since law school, Nguti has worked as a patent attorney, counseling many small inventors and start-ups—obtaining more than 500 patents for clients.



Dennis Thompson

Dennis Thompson serves as the executive director of the Doyle Center for Manufacturing Technology. Throughout more than 30 years, he has held positions at Chrysler, Stanadyne, Advanced Drainage Systems, Remington Arms and Catalyst Connection. Thompson holds an M.S. in business management from Rensselaer Polytechnic Institute at the Hartford Graduate Center.



CONTRIBUTORS

Jenny C. Servo, Ph.D.

The founder of Dawnbreaker, Jenny Servo specializes in designing government agency programs and assisting small, advanced technology firms with organizational development, market research and business and strategic planning. A frequent SBIR conference speaker, she has also written extensively on innovation and is the senior author of the books *Business Planning for Scientists and Engineers*, *Knock Their Socks Off: Making Winning Presentations to Investors* and *Indicators of Commercial Potential*. Servo holds an M.S. from the University of Kansas and a Ph.D. from the University of Rochester.



Robert F. Larsen

Bob Larsen, a manufacturing consultant and portfolio manager at Dawnbreaker, is focused mainly on manufacturing assessments. Larsen's 25 year professional career has been spent directing the growth of domestic and international original equipment manufacturing and service businesses. He was general manager and senior vice president for multiple divisions of Lockheed Martin, and at TransTechnology and Puritan Bennett. His B.S. in business is from New York Institute of Technology. During the Vietnam War, Larsen served as crew chief for a U.S. Army helicopter gun team.



John G. Servo

John Servo, a Dawnbreaker vice president, utilizes his 20+ year sales career in assisting primarily advanced energy technology clients with strategic planning, market research and contract negotiations. Working with firms that participate in company conducted programs for the DOE, DoD and DOC, he also has the primary responsibility for interfacing with the investment community and managing participation for the investment events that culminate most of Dawnbreaker's programs. These events, referred to as Commercialization Opportunity Forums, are largely attended by corporate executives and venture capital firms.



Steve C. Orth

Steve Orth joined Dawnbreaker in 2003 as a portfolio manager, concentrating on investor related issues. Prior to that time, he spent 17 years working in the photonics, technology and aerospace industries. His career began at Grumman Corp., moving then to sales and business development roles at EG&G in military and commercial fluid power applications, followed by management of domestic and international sales activities at Burleigh Instruments. He holds a B.S. in mechanical engineering from Clarkson University and a B.S. in physics from SUNY at Potsdam.



Erick W. Page-Littleford

Since joining Dawnbreaker in 2006, Erick Page-Littleford has worked extensively with Dawnbreaker's Phase III data collection program. He plays a critical role in the collection/analysis of data and in the compilation of client reports regarding program participant outcomes. Located in Washington, D.C., Page-Littleford, who holds a B.S. in public policy from Rochester Institute of Technology, also serves as a liaison to SBIR and other Dawnbreaker clients, apprising them of company projects and activities.



Terry M. McMahon, MBA

Terry McMahon, a Dawnbreaker portfolio manager, has an extensive background in marketing, product development and both business and strategic planning. During his nearly 40 year career, he has, among many other things, served as a marketing director for an Eastman Kodak venture company and led business development efforts for a \$190 million global parts and service business. McMahon holds an associate degree in electrical technology, a B.S. in business management and an MBA in finance.



Richard V. Smerbeck

When joining Dawnbreaker in 2008, Rich Smerbeck had 25 years of R&D experience in the pharmaceutical and medical device industries. Throughout his career, he has played key roles in the development and launch of more than 50 products, including pharmaceuticals and nutritional supplements, and he is listed as an inventor on 25 patents. Smerbeck has served in positions at Warner Lambert, Schering Plough, and Bausch and Lomb, where he was vice president of global pharmaceutical R&D.



Alexander D. Stoyen, Ph.D.

Alex Stoyen, who joined Dawnbreaker in 2007, is the founder of 21st Century Systems, where he also served as chairman and CEO at the award-winning company. In his career, he has written extensively and contributed to key technological concepts in information systems at distinguished institutions such as the University of Nebraska's Peter Kiewit Institute and the IBM Zurich Research Laboratory. Stoyen's Ph.D. in Computer Science is from the University of Toronto.





ROYALTY AUDITS

Preparing to Get the Most Out of Your Licensing Agreement



Finally, after months of negotiation, you have your first licensing agreement in hand. If you're like most small businesses, you hope that royalties will now begin to roll in. You can put this baby on auto-pilot and shift your attention to the next project! Unfortunately, it doesn't work that way.

by Jenny C. Servo, Ph.D.



THOSE LONG ANTICIPATED ROYALTIES depend not only on the care taken during negotiation of the initial terms in the licensing agreement, but also upon the company's diligence in monitoring performance once the contract is executed. In this regard, a royalty audit (a method used by specialized accountants to determine if a licensor is receiving the royalty it is due under the terms negotiated) can serve the licensor well.

Under-Reported Royalties

It has been noted that 80 to 90 percent of licensees report royalties incorrectly. And, you guessed it, errors are rarely in the licensor's favor. Errors in calculating royalties and in complying with other terms in the license may result in underpayments that can reach as high as 25 percent.

How could this occur? Why would a licensee under report royalties? According to an article written by Deborah Stewart and Judy Byrd for the Oct. 2007 issue of the Licensing Journal, "Willful misreporting happens, but, it only happens in a minority of cases." Stewart and Byrd indicate that the errors are most often the result of inattention, oversight and the fact that those that implement the license are usually not the same as those who negotiated it. Lack of communication amongst departments within the licensee's organization is another frequent culprit. Royalty payments are calculated and dispersed by accounting departments, which in turn depend upon information they receive from engineering, production and sales.

Mistakes are Made

In analyzing the types of errors that led to unreported royalties in a 2006 sample, Stewart and Byrd found the following:

- ▶ 5% of the errors were simple math errors
- ▶ 5% from unreported benchmarks and milestones
- ▶ 4% were the result of errors in the royalty rate
- ▶ 4% from transfer prices for intra company transactions
- ▶ 9% Royalties from Disallowed Deductions that relate to definitions of gross and net sales
- ▶ 16% from Underreported Sales,
- ▶ 17% from Unreported sublicenses
- ▶ 40% from Questionable License Interpretation

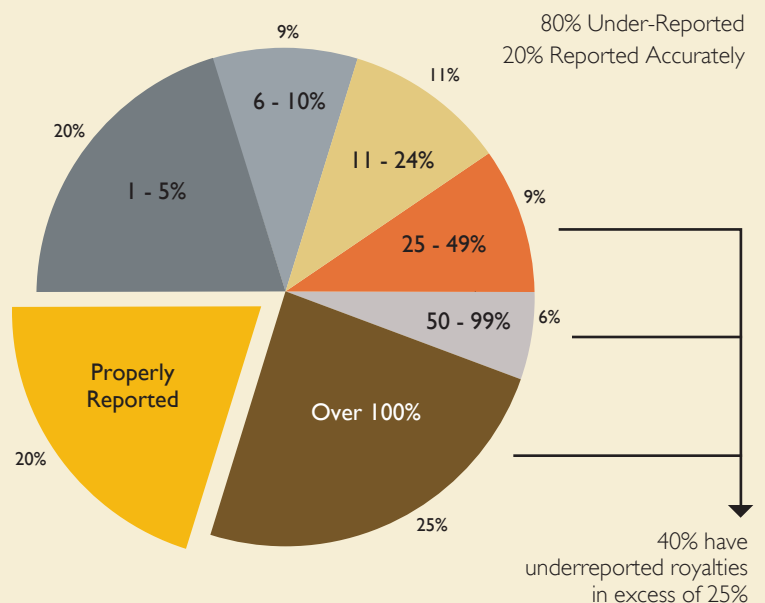
Stewart and Byrd published a similar report based on their work in 2008 with the Invotex Group. The specific percentages vary from year to year, but under-reported sales and differences in interpretation of licensing terms remain the most significant factors.

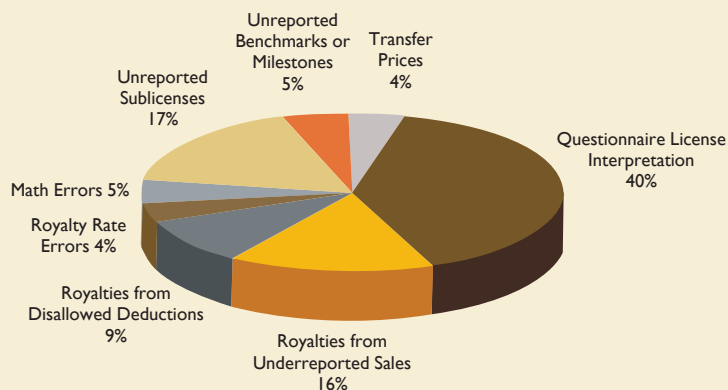
Auditing the Royalties

Given that under reporting royalties seems to be common, what can a licensor do to mitigate this risk? First, consider hiring a good accountant with demonstrated experience in conducting royalty audits, to conduct an audit for you. Most licensing agreements contain a section entitled, "Record Inspection and Audit." That section should be read very carefully. Typically it contains clauses regarding who will pay for an audit, how often an audit can be conducted, what types of information will be provided by the licensee, and if there are penalties that accrue to the licensee for under-reporting.

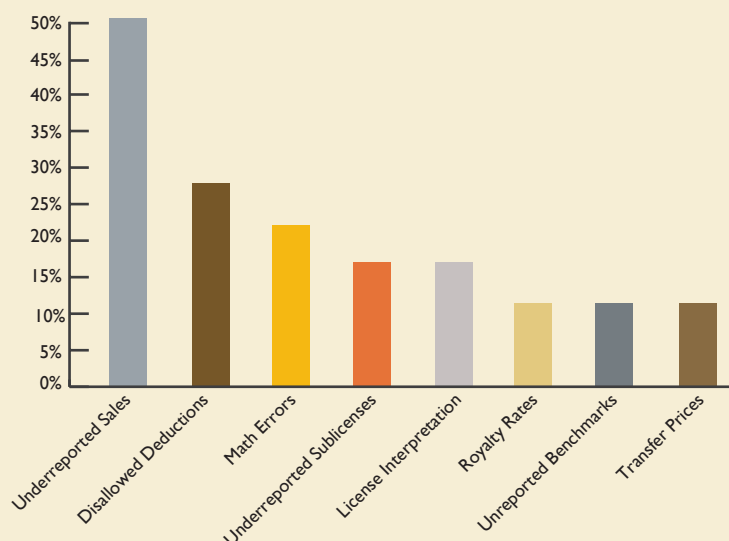
Note that the Record Inspection and Audit clause is important to negotiate when first drafting the licensing agreement. The licensor will want to have a broad right to audit the licensee's records in both paper and electronic format. You should expect that the licensee will want to limit the information to which you have access as pricing information is considered sensitive. Another term to negotiate when reviewing the initial licensing agreement is under what circumstances the

Historical Statistics for Under-Reported Royalties as a Percent of Reported Royalties





Frequency of Common Underreporting Errors



Source of 3 graphs:
Invotex Group
Royalty Compliance
Audit Results

licensee will bear the full cost of payment for the audit. According to Ray Throckmorton, CPA, MBA, "If there is under-reporting above a specified amount, usually 2%-5%, the Licensee should pay the full cost of the audit."

Assuming that there is a Record Inspection and Audit clause in the licensing agreement, take advantage of the right to an audit early in the relationship with a licensee. As Russell Parr advises, "If performed early in the licensing relationship, licensors gain assurance that royalties are being calculated, reported, and paid as required, from the onset of the agreement period. It also sets expectations and standards. By performing just one royalty audit, licensors set a precedent, applicable to all of their licensees, demonstrating that royalty streams will be monitored on a regular basis, under-reporting will not be tolerated, and that the licensor values and protects its assets."

This advice is likely to fly in the face of what most small businesses will be tempted to do. When the first royalty check arrives, the business owner will be so pleased to receive the check that he or she will not bother to look at the details that support the amount of the check. The last thing on the licensor's mind will be to conduct a royalty audit. However, it is recommended that this be an anticipated business expense and a part of the licensor's overall strategy for protecting the negotiated royalties from the licensing agreement. ■■■

WHAT TO LOOK FOR: 7 Areas of Greatest Payoff in Royalty Under-payment

According to a report by Ray I. Throckmorton, CPA, MBA, there are seven areas that are most profitable for those that under-pay royalties. Businesses licensing their goods should watch for:

1. Under-reported sales: related product lines that use licensed technology, trademark, etc. or revenue generated in foreign territories.
2. Adherence to contractual requirements, i.e. maximum amount for deductions or minimum guarantee for sales.
3. Transactions with related parties not conducted on an 'arms-length' basis.
4. Cost allocation that unfairly burdens licensed product, i.e. a combination sale.
5. "Free After Rebate" traps and other clever product bundling approaches.
6. Unclear contractual definitions of "returns" and "allowances".
7. Under-reporting that is not readily apparent by reviewing reports, i.e. to find unreported revenues, the auditor should inspect records that show relevant cost information that might be inconsistent with reported revenues.

For more information on Royalty Audits, visit:
[www.amicour.com/html/Brochures/
Royalty_Audit_Checklists.pdf](http://www.amicour.com/html/Brochures/Royalty_Audit_Checklists.pdf)





Clearing the Path to Commercialization

SMALL BUSINESSES in the medical device, biotech and pharmaceutical (MDBP) industries often find that a well-funded co-development partner is a critical ingredient for successful commercialization of technology or early stage products. These heavily regulated industries typically have later stage development costs that include clinical trials, major capital equipment purchases, production facility development and considerable investments in industry-specific personnel. Together these can add millions of dollars to the total cost of commercialization—amounts well beyond what most small businesses can fund.



by Richard V. Smerbeck

Additionally, small businesses in the MDBP industries require Phase III funding far earlier in product development than businesses in other fields. Typically, Phase II SBIR funding will only partially fund a program through early development. A medical device product launch (first revenues earned) may still require 3 to 5 years of funding while a pharmaceutical or therapeutic biologic product launch may still be 8 to 10 years out.

Funding and/or developing MDBP products also represents a high-risk proposition for any investor. The hurdles set by FDA, Europe's EMEA and Japan's MHLW require a number of considerable hurdles to overcome in order to achieve acceptable safety and efficacy for a new drug, biologic or medical device. The vast majority of potential products entering the regulatory process fail to gain market approval. This means that potential Phase III investors cautiously examine even those opportunities with significant technical merit.

MDBP business development specialists and VCs discuss the numerous opportunities they see but are reluctant to fund. While the technology was sound and there was product potential, obstacles to a rapid, regulatory approval were obvious. They look for technologies with the clearest path to market, which is as important as the technology itself. To create a clear path to market for a technology, a small business needs to:

- ▶ Have a strong intellectual property position
- ▶ Deliver regulatory submission-quality research and development results, and
- ▶ Create a strong collaborative relationship with the licensee

To maximize commercial potential, a small business should develop its technology in much the same manner as a large MDBP corporation. Creating a clear path

to market can be done, but it requires more than just a good idea and a solid technology. It also requires forethought, planning and a deep commitment on the part of the small business.

Intellectual Property

With multi-year development times as the norm for MDBP products, a strong patent position is considered to be "table stakes" for a technology to even be considered for licensing. Bausch & Lomb Pharmaceuticals Business Development manager, Cynthia Edington, explains that, "Intellectual Property is essential and a key ingredient that business development professionals look for," as part of the package for bringing in new opportunities. In the case of MDBP products, the best IP is in the form of patent protection. Protecting a technology through the patenting process should be considered essential, even when funds are tight. The patenting strategy for a small MDBP business should proceed as follows, in order of importance:

1 File a patent application(s) on a technology early, as the filing date establishes the priority date. The priority date is recognized globally as the day the invention was established. In the case of multiple applications for the same invention, the application with the earliest priority date will be granted the patent.

2 It may be pertinent to file patent applications around a core patent(s) to block others from working in the same area. For example, one may patent a new chemical entity (NCE) for use as a treatment for cancer. The patent could include the synthetic process as well. In this case, alternate synthetic routes (including those which are less than optimal) would be patented to prevent others from producing the NCE via a different route.

File a patent application early. The filing date is recognized globally as the day the invention was established.

Non-clinical R&D studies, and their results, are the basis for determining the commercial viability of a technology.

3 It is critical to determine the scope of the “freedom to operate” or practice an invention. It is quite possible to have a patent granted for a technology yet other patents block your ability to practice it. Searching the U.S. Patent Office database of patents and published applications should disclose potential blocking patents. This does not take the place of a freedom to operate opinion from patent counsel, but it will provide assurance to a potential licensor/investor that the technology is worth investing over the multi-year development horizon.

According to Edington, “Having a solid intellectual property portfolio gives a competitive advantage to those companies looking to either out-license or exit from the technology through acquisition.”

Regulatory Submission-Quality R&D Results

Non-clinical R&D studies, and the study results, are the basis for determining the technology’s potential development into a commercially viable product. To submit these results as part of a formal application for regulatory agency approval, they must have been generated from R&D studies conducted under specific guidelines. The Food and Drug Association (FDA) has codified these guidelines in the U.S. under Good Laboratory Practices (cGLPs) and Good Manufacturing Practices (cGMPs).

Typically, small businesses will not have the resources to fund the clinical trials required for regulatory approval and will most likely require Phase III funding at this stage. However, the small business will, as part of their R&D efforts, have generated non-clinical results to support the predicted safety and effectiveness of the technology in a product form. The quality of these studies can positively or negatively impact licensing opportunities. Results from required non-clinical studies carried out under cGLPs can be submitted directly to FDA, but if these studies are not carried out under cGLPs a licensor/investor will have to repeat them leading to extensive delays.

Of note for small businesses in the Medical Device industry is that under the cGMPs, medical device designers are considered to be manufacturers and must follow the Design Control Regulations, found in the Medical Device Quality Systems manual. Design control regulations allow FDA to trace a medical device’s design history from inception. To ensure a medical device is safe and effective when used as directed, the FDA believes that it must be developed according to

quality systems. Because a design history is difficult to recreate after the fact, a licensor/investor is more likely to invest in a device developed according to regulations.

To maximize Phase III funding opportunities, small MDBP businesses should:

- ▶ Learn the regulatory path of approval, starting with the FDA website, fda.gov. Implement the required non-clinical studies, which will speed the development process and enhance the technology value.
- ▶ Develop and implement cGLPs in the lab. Studies carried out under the cGLPs can be included in the regulatory submissions.
- ▶ Follow relevant cGMPs as early in the design process as possible. Design controls should be instituted when the first design activities are initiated.

Development efforts that shorten the time to commercialization allow the small business to command a higher value from a licensor/investor.

Licensee and Licensor: Collaborative Relationship

Licensing a technology to a large company is the culmination of significant financial and intellectual efforts for many small businesses. This is not the case in the MDBP arena where an agreement to develop a technology often requires several years and millions of dollars until product commercialization is realized. It also requires the licensing company and the technology licensor to work together from the date of acquisition through the date of regulatory approval, which increases the partnership commitment.

In the MDBP industries, licensing companies and investors are looking for a small business that:

- ▶ has the financial resources to contribute and remain viable for the duration of product development (in the case of pharmaceuticals this could be as much as 10 years);
- ▶ will commit key personnel to the program for the duration of product development;
- ▶ will continue to give the project the highest priority.

In other words, the small business needs to have the desire to effectively work together for the duration. Under this set of circumstances, collaboration produces efficiency and competition produces delays and possible failure.

There are many solutions to any problem. In the health care market, there are many different medical devices and drugs that can resolve the same condition. When looking to license, acquire, invest in or co-develop a technology, MDBP companies will look at a number of technologies that have the potential to be a product and/or fill an unmet need. With many potential solutions, the companies will be drawn to the technologies that appear to be safe and effective. From there, they will want to see their investment protected by intellectual property. They will want the technology that is at the most advanced stage of development resulting in the shortest time to approval and to market. They will want a partner that is as committed as they are to getting the product launched. The small business that provides these is most likely to be the one that realizes success. ■■



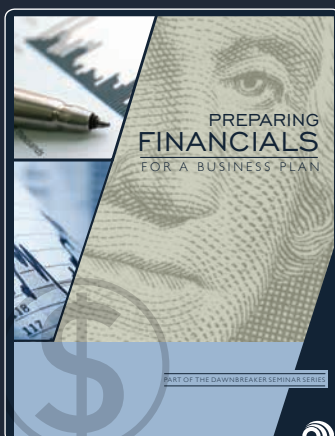
Find the FDA Medical Device Quality Systems Manual: Small Entity Compliance Guide at fda.gov/cdrh/dsma/gmpman.html

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Negative Covenants and Their Impact on SBIR Companies

keep your business out of a precarious situation



by Erick W. Page-Littleford

NEGATIVE COVENANTS, common in the investment industry, are clauses in investment agreements used to restrict an investee firm's actions to reduce risk for the investor. An unintended consequence of these covenants in the SBIR realm is that they can result in the affiliation of the small business with the investor and the investor's portfolio. Such affiliations may render a small business ineligible for future SBIR awards.

David Metzger, partner at Arnold and Porter LLP, and Navy Opportunity Forum presenter, was asked by Phase III Commercialization magazine to discuss negative covenants, their role in investor agreements and the potential implications when these clauses are included in an agreement between the SBIR firm and a large business investor or venture capital (VC) firm. According to Metzger, "A 'negative covenant' is a standard investor provision requiring consent of the investor to the small business concern's (SBC) actions. These covenants commonly apply to actions such as declaring a dividend, liquidating the company, selling large assets or taking out a large loan. The intention of the negative covenant is to reduce the investor's risks but an unintended consequence is the negative impact they can have on an SBC's size status for future Phase I and II SBIR funding."

While negative covenants are status quo in the investment industry, SBA case law concludes that they provide the investor negative control. Control is the essential ingredient of affiliation. "If the inves-

tor can veto actions of the SBC, then the SBC is not considered an 'independent' small business because the ability to veto actions gives the investor what SBA calls "negative control" over the SBC. When this occurs, these small firms are considered affiliated with their VC or larger firm and if the VC uses such negative covenants as standard provisions in all of its investments, the VC is considered a 'common owner' of all of its investments, thus affiliating the SBC with the VC firm's en-



If the investor can veto actions of the SBC then the firm is not an 'independent' small business. When this occurs, these small firms are considered affiliated with their VC or larger firm.

tire portfolio," Metzger explained.

This action would cause the SBC to no longer be considered a small firm, hence, no longer to be eligible for SBIR funding. This could come as a shock to an unprepared SBC. It is important to read investment agreements thoroughly and negotiate terms that will not limit the SBCs ability to operate as a small firm, if that is the desired outcome.

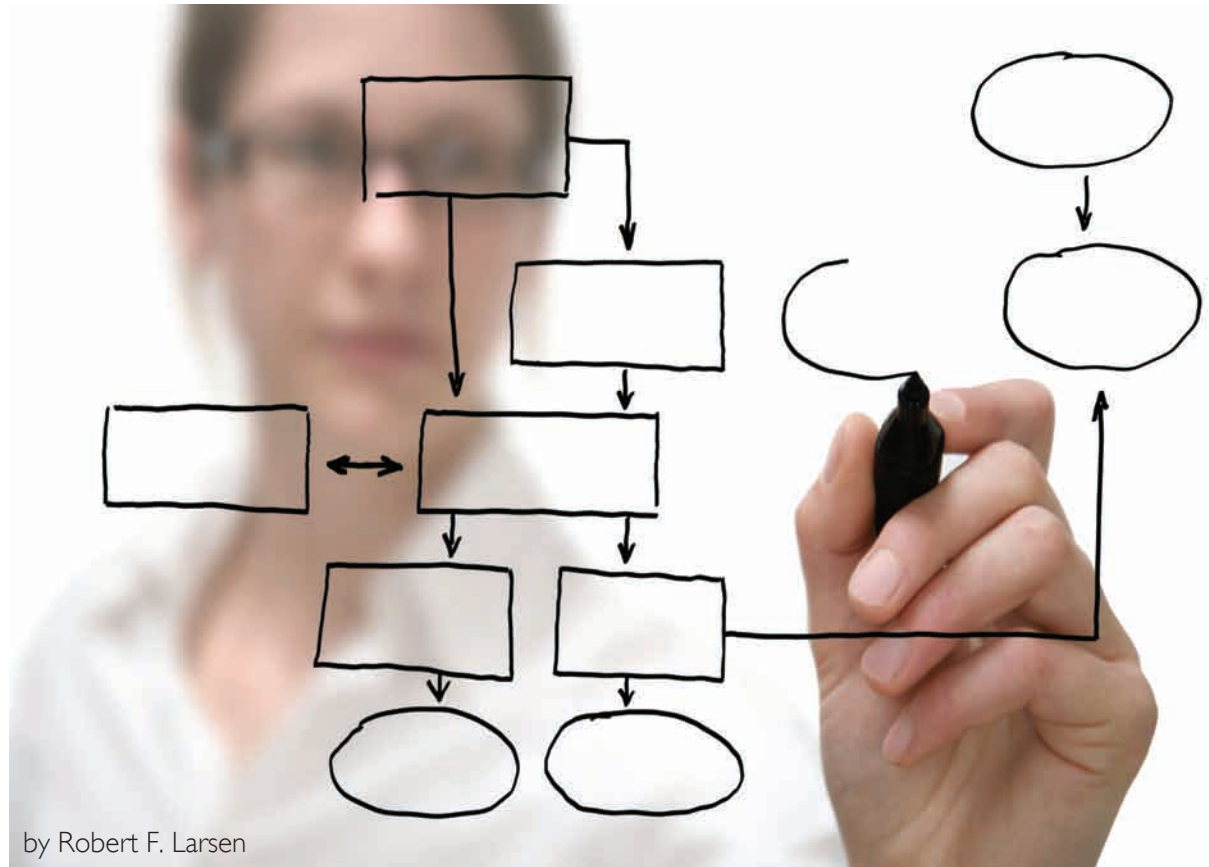
"Such negotiations are probably not as easy as it may sound, because investment firms consider such provisions vital to protecting their investments," Metzger

cautioned. "SBA's test for control, or lack of it, is that the SBC must be able 'to do as it freely chooses.' An investor that demands control through such covenants as a condition of its investment has control. Leaving such provisions in the agreement causes control, watering them down may not satisfy the investor and rejecting such negative covenants can lead the investor to walk away. Unfortunately, the issue has no obvious middle ground. Either control exists or it does not and only one party can have it, therefore many informed parties abandon the transaction."

Because negative covenants have caused SBCs significant issues, some possible legislative changes to SBA SBIR affiliation rules have been considered. In the 110th Congress, completed last year, two pieces of legislation tackled this problem. Neither bill was passed, but if similar bills are passed in the 111th Congress, it will have the effect of eliminating the risk of affiliation from VC investments and would allow the VC firm to exercise the degree of control customary in VC agreements without either fear of affiliation or a loss of SBIR eligibility for the SBC.

Small businesses should continue to monitor the 111th Congress concerning this legislation to see how it progresses. SBCs may want to contact their representatives as well to express concerns and or opinions on the matter as it could significantly impact the way they do business in the future. ■■■

Mapping Out a Manufacturing Plan



IT SEEMS RATHER ELEMENTARY to say that project planning is important in manufacturing. Certainly a manufacturing company will think through the basics—what tools will be needed? where should materials be acquired? where will the widgets be built? and how will the product be distributed? However, there are several additional factors to be considered when project planning that, if missed by novice manufacturers, can be expensive and potentially cause irreparable harm to the business.

To Start With: the Driver, the Terms and Conditions, and the Learning Curve

Project planning in manufacturing starts with a “driver”—the thing that drives the manufacturer to build a product or produce something. The driver can be one of a few things—it can be a customer, a contract or a purchase order.

Every driver has a set of terms and conditions that the customer and manufacturer agree upon. The terms and conditions include:

- ▶ Delivery Date
- ▶ Quantity of Product
- ▶ Product Performance
- ▶ Quality Tests
- ▶ Price

There may be penalties written into the performance conditions, which are typically assessed in negative percentages. These penalties will most likely be tied to the delivery date or the quality of the products, i.e., if the product is delivered late or if the quality of the

product does not meet the agreed upon standards there will be a 10% charge to the manufacturer. In the planning process you have to take into consideration all of the terms and conditions.

Another consideration in the planning process is the manufacturer’s experience in the business area of the product to be built. If the manufacturer has worked in the business area and has a working familiarity with it, the learning curve for production will be shorter and not as high as it would be in a new area. If the manufacturer is unfamiliar with the business area, then the learning curve will be more lengthy and steep, requiring that more time and effort be expended to meet the desired outcome. Of consideration here is whether or not the “business” is new to the manufacturer. If this is a new business, the learning curve is going to be longer and steeper. If the business is not new to the manufacturer the learning curve will be shorter and a good deal lower.

Mapping the Value Streams

Once the terms and conditions are established, the manufacturer needs to plan how to meet the goals efficiently and effectively. Value Stream Mapping (VSM), a Lean technique developed by Toyota, is an end-to-end planning process, and an effective technique that is used to analyze the flow of materials and information required to bring a product/service to a consumer.

A “Value Stream” is the set of all of the actions, both value added and non-value added, that are required to bring a specific product or service from raw material to the customer. The VSM process focuses on identifying opportunities for improvement in lead time. It does not

require complicated tools, rather just a piece of paper, a pencil and a deep consideration of all of the value streams involved in creating the end product.

Discovering a Bump In the Road

The impact that project planning and the utilization tools such as VSM can have on a beginning manufacturer's success can be profound. An example of a critical issue is staffing considerations that could, if not properly planned for, make the manufacturer's contractual delivery date impossible to reach.

Small business XYZ, Inc. has received a substantial contract to build 10 machines that are to be delivered

Lean manufacturing processes are designed to get "brilliant results from average people managing brilliant processes" instead of getting "average results from brilliant people managing broken processes."

to the customer in 18 months. The prototype has been built, the research and development is complete, and the current facility will easily accommodate the manufacturing process.

XYZ, Inc. has three full-time employees, whose main focus has been R&D, and one part-time office manager. All of the current employees have been with the company since its founding. Until working through a manufacturing assessment with a consultant, XYZ, Inc.'s management believes that the 18 month time frame for delivery will be easily reached.

The consultant introduced them to value stream mapping and when the group began to apply VSM to their situation, a potentially serious impediment to the successful completion of their order was unearthed. The problem was the hiring of skilled workers and engineers that would create the tooling and machinery necessary to build the final products. While it had not been a red flag for XYZ, Inc. prior to working on their VSM, when they started to consider all of the factors and the time involved with hiring these skilled employees, what

they discovered opened their eyes to the reality that 18 months was not a significant amount of time after all.

First they needed to decide how many employees would be required and for what positions. Then, a job description for each position had to be written and the job posted. Someone would need to then review the resumes and decide upon candidates to interview. Interviews, often more than one per candidate per position available, had to be held. If through this process an appropriate candidate is identified, then an offer needs to be crafted and made. If the early pool of candidates is not appropriate, then the position needs to be reposted and the process starts all over again.

Once an offer is accepted, then arrangements need to be made for orientation, job training, preparing office equipment and completing paperwork. Time considerations must be made if the new hire is relocating as well. But what if the offer is rejected? The company is again back to square one.

It can be months before the staff is at full manpower and that is not counting the time needed for the full staff to be up to speed. Depending on where the business is located, the available workforce may not have a large pool of workers with the necessary skill set. Relocating new hires is time-consuming and does not always work out well. Also to be considered are the many instances where new employees relocate and discover that their new home is not a good fit, causing them to leave. That will send the company back to the help-wanted ads.

The important thing to remember is that all of this, and much much more, has to occur before production can ever begin because these employees are the ones that will build the machinery that will be used to manufacture the end product.

In the End...

Toyota developed much of the lean manufacturing processes used today and their management is fond of saying that they get "brilliant results from average people managing brilliant processes." While their competitors often get "average results from brilliant people managing broken processes." Mapping out the value streams and creating efficient manufacturing processes early in the game can make the difference between a successful business venture and bankruptcy. Plan accordingly. ■■■

Value Stream Mapping is used to analyze the flow of materials and information required to bring a product/service to a consumer.

RAMPING UP MANUFACTURING CAN BE DAUNTING. Dawnbreaker's manufacturing assessment staff can help you map out a plan. Our assessment includes an on-site evaluation of every aspect of production, including:

- ▶ Engineering Design
- ▶ Inventory
- ▶ Process
- ▶ Packaging
- ▶ Areas of Risk
- ▶ Quality Control
- ▶ Suppliers
- ▶ Facilities
- ▶ Contractual Obligations
- ▶ Mitigation Techniques

MANUFACTURING ASSESSMENT

FOR MORE INFORMATION, CONTACT:

Lyn Barnett

585.617.9493

lbarnett@dawnbreaker.com

Thinking Globally:

Alternative Energy Priorities Around the World

There is no crystal ball concerning the future of alternative energy and the funding of related clean energy technologies. If there were, it is likely that the current global economic crisis would cloud the view of even the most astute fortune-teller. Without psychic assistance, those in the alternative energy sector must look to the facts and follow the trends, making educated assumptions about what will come next.

by John G. Servo



On one hand, there is unrest in the Middle East, Russian/Ukrainian disagreements over gas supplies and an extremely cold winter in both Europe and North America—all of which drive energy security issues to top of mind awareness for government leaders. On the other hand, oil prices have tumbled from historic highs, there is nearly unprecedented global economic unrest, and as a consequence, investors are even more risk-averse than usual. While the economic environment is not as robust as a small energy firm would like, it isn't impossible to find funding, but it will likely require expansions of horizons and an openness to think globally. Knowing the trends found in the countries leading the renewable energy charge will enable small firms to plan more effectively for the uncertain future.

Global Trends

Energy security concerns and global climate change have long been key drivers for investment in renewable energy. There are strong indicators that this will continue to drive investment towards the clean energy sector, even in the volatile economy anticipated for 2009. However, that does not mean that the sector will see the extraordinary increases in investment, year after year, as it has since 2005.

There are a lot of questions and a good deal of anxiety, but it seems most likely that 2009 will see a flattening in clean energy investment globally. According to the New Energy Finance report, *Global Trends in Sustainable Energy Investment 2008*, “the investment flows have not only continued to grow—more than 60% compared to 2006—but have broadened and diversified.” Though the clean technology VC investment numbers for 2008 have surpassed the record books, by looking just at the fourth quarter, the numbers tell a different story. Cleantech Group LLC, a pioneer in clean technology investment, reports that VC investments in North America, Europe, Israel, China and India reached a commitment level of only \$1.7 billion over 99 deals, which is down 35 percent from the third quarter and down four percent from the last quarter of 2007. According to a January 2009 Wall Street Journal article, the 35 percent fourth quarter drop is the steepest quarterly drop in two years for this sector.

In a *CleanTechnica* interview with senior director of research at the Cleantech Group, Brian Fan, he said that he interprets the 2008 numbers to mean that “the cleantech sector is not immune from the global economic environment” and that the pain had been felt across the board, though Europe's numbers fell the most in the fourth quarter. Fan's belief is that the number of deals will stay steady, but the average size of the deal will decrease and for now, the “mega-

rounds” of \$150 to \$200M investments will “be fewer and farther between.” Though the current economic predictions point to a tough economic cycle, Fan believes that the cleantech prospects are still strong in the long-term. But, in the face of the current credit crunch, the several years it will take for renewable energy policies to be negotiated Cleantech Group is “predicting that the failure rate for cleantech startups will double in 2009.

The United States—Early Stage Is Where It's At

The U.S. is still at the top of the indices of the most attractive countries for investment in renewable energy, followed by Germany, India, China and Spain according to Ernst and Young report, *Renewable Energy Country Attractiveness Indices: Global Highlights*. Early-stage financing remains the focus in the U.S. where the investment is skewed towards VC funding and accounts for 75 percent of the total global VC investment.

With a new administration in the White House that has repeatedly stressed the critical nature of alternative energy, there is a greater chance of increased public funding for green initiatives. In his January 2009 economic stimulus speech, the then President Elect Obama asked the U.S. Congress to, “act without delay” to pass legislation that would double alternative energy production in the next three years and would include building a new electricity “smart grid.” Obama has also stressed his commitment to creating a new “green economy,” pledging \$150 billion over 10 years to develop alternative energy. True to his pledge, since President Obama took office, approximately \$59 billion in funding included in the stimulus bill is earmarked for energy initiatives. This includes \$39 billion the Department of Energy and \$20 billion in clean-energy incentives.

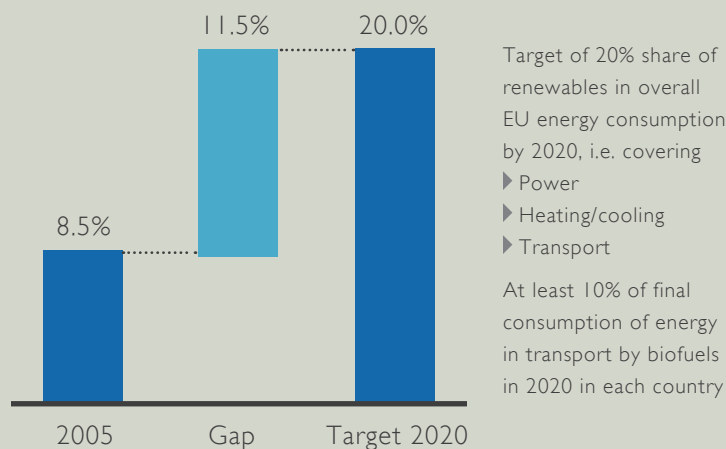
The additional commitment by the Obama administration will certainly be a boon to America's clean energy sector, but where public funding is concerned, the U.S. still lags behind European Union Member States in energy R&D. According to Professor David L. Levy, Department Chair of Management and Marketing at UMass, the EU provided approximately €2.3 billion in public funding in 2005. This is more than double the amount public funding available in the United States. Europe, and indeed many other countries, have made a commitment to reducing use of fossil fuels, reducing carbon emissions and in doing so have made a commitment to directly and/or indirectly funding clean energy R&D and technologies.

Energy security concerns and global climate change have long been key drivers for investment in renewable energy. There are strong indicators that these will continue to drive investment for the clean energy sector, even in the volatile economy anticipated for 2009.

For more info on Early Stage Investments, see earlier issues of Phase III Commercialization magazine, available online at www.dawnbreaker.com.



Overall share of renewable energy in EU



mission has even launched a Global Energy Efficiency and Renewable Energy Fund (GEEREF), in an effort to mobilize private investments in energy efficiency and renewable energy projects for developing countries and economies in transition. The GEEREF will be targeted at small-scale projects, and the Commission will kick-start the fund with a contribution of up to €80M from 2009-2012.

The Sun is Rising in China

China has rapidly emerged as a cleantech manufacturing center, particularly in solar and wind, and is poised to benefit from the growing adoption of cleantech globally. The growth rate of clean tech investment in the area grew 67 percent annually from 2006 to 2008. Energy efficiency is an emerging segment due to the country's large-scale construction activity and energy consumption. Makers of energy efficiency technologies see in China an opportunity to achieve scale quickly. Multinational corporations increasingly view China as a test market for intelligent network systems and sensors.

As for what the numbers say, in the first three quarters of 2008, Chinese cleantech investment grew rapidly, raising \$165M (U.S. dollars) compared to \$29.1M during the same period in 2007. The Energy/Electricity Generation category received \$95.8M, up from \$4.6M. Solar was largest component of investment in this category, raising \$85.2M. The next largest category of investment was Industry Focused Products & Service, which raised \$54.5M for companies focused on agriculture, consumer products, materials and transportation. In 2007, Chinese asset financing also reached a record of \$10.8B -mostly for new wind capacity.

India Enters the Market

India has become an emergent market in the past few years and while it is still struggling with reducing poverty and building infrastructure, it has been a robust market for clean technology. Currently India receives a high score for onshore wind and infrastructure from Ernst and Young. The country has plans for 143 hydro-power projects, with 20GW of generation capacity. As the country moves forward, its estimated electricity generation needs to grow at a minimum of 10 percent a year to support the economic and industrial growth. According to an Ernst and Young report, Empowering the East and North East, "to provide electricity at to all by 2012, meeting peak demand, over 100,000 MW of capacity needs to be added in the generation segment." This will require approximately \$200B (U.S.) of investment.

What Comes Next

While this article by no means provides a comprehensive outline of global trends or where it would be best to look for funding opportunities, the intent is that small firms caught in the maelstrom of economic woes and uncertainties understand that there are still opportunities available. That they understand that governments and investors are still moving forward with clean technologies, especially wind and solar, but that the expectations are higher than they have been in the past five years and the amount of funding per project is most likely to be less. Companies with innovative technologies need to prepare for stiff competition and for higher standards from investors to ride out the current downturn. They will need to sharpen their marketing skills, hone their technological advances and prepare for the economic recovery, because the demand for alternative energy, per all the available data, will not abate. ■

The EU 20-20-20 Directive and Beyond

With two of the top five countries for renewable energy investment, (the UK was displaced by China during the first half of 2008) and despite the economic crisis, on Dec. 17, 2008, EU leaders reaffirmed their commitment to clean energy by adopting the 20-20-20 Renewable Energy Directive.

This directive sets the climate change reduction goals to be reached by 2020, as compared to 1990 levels. As such, the EU aims for a 20 percent reduction of greenhouse gas emissions, a 20 percent increase in the use of energy from renewable sources and an overall 20 percent reduction in energy consumption by 2020. This directive points to sustained growth for the clean energy sector throughout the next decade.

EU Member States are very serious about funding their energy directives. For example, 2009 EU budget includes a record investment of €0.5B to be set aside for the EU's Competitiveness and Innovation program (CIP) to finance ground-breaking sustainable technologies funding for this directive—an increase of 22 percent from 2008.

The top individual EU Member States have continued to focus on wind power and solar. At the end of 2007, Germany became the leading solar PV producer, in addition to being the leading nation for both wind energy and solar capacity. To wit, the Germans have also created legislation, including feed-in tariffs, which guarantee the rate for electricity generated from solar energy.

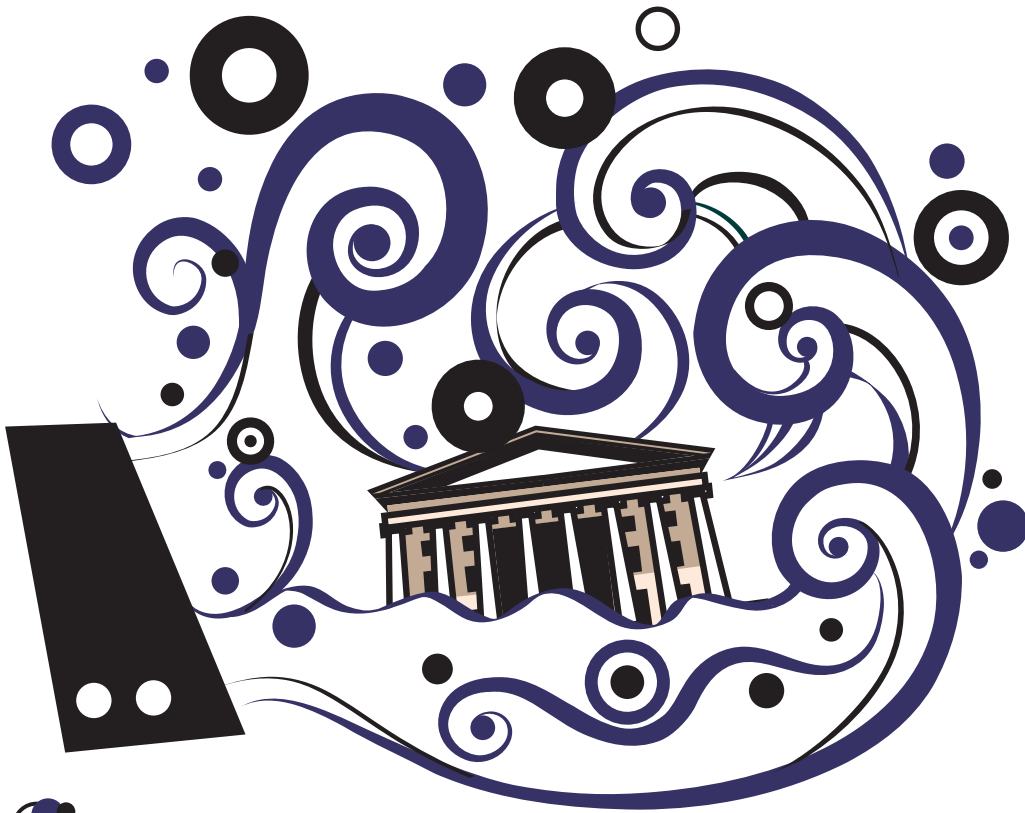
Per the Ernst and Young report referenced earlier, Spain excels in solar energy and onshore wind, with a much lower score for offshore wind energy. Spain's government agreed to subsidizing the first 1,200 MW of solar capacity installed, which gave a healthy boost to the solar industry. Spain ranked 2nd after Germany for new solar pv installations in 2007 and ranks third, just behind the U.S., for total installed wind energy capacity.

The EU has also followed a trend that New Energy Finance has noted in its earlier referenced Global Trends in Sustainable Energy Investment 2008 report. That trend concludes that there has been a "continuing shift of investments from developed to developing countries," with China, India and Brazil increasing their share of new investment from 12 percent (\$1.8B) in 2004 to 22 percent (\$26B) in 2007. This is a market expansion of 14 times. To this end, the European Com-

Source: EU Commission, 2008. Proposal for a directive of the European Parliament and of the Council on the promotion of the use of energy from renewable sources.

Angel Funding • in the Current Economic Climate

by Steve C. Orth



ECONOMIC WOES are seemingly everywhere—the recession, the housing market crash, the billion dollar bailouts of the “pillars” of the U.S. economy. The country is facing “unprecedented economic times” according to one article in a recent issue of the Wall Street Journal and the outlook is uncertain not only for the next year, but for potentially, the next decade. While this economic tumult has caused investor fear, it does not mean that “active” angels have stopped investing. Though most angels are being cautious and altering their investments as they look ahead, they are not ceasing activity. It is in their blood to participate in the entrepreneurial adventure.

Investing with Caution

Business angels invest their own capital. Due to the reduction in net worth caused by the economic downturn, angels are often working with less investment cash than they were even a year ago. But all the economic doom and gloom has not brought angel investing to a halt. Instead it has held steady, even increasing in some arenas. There has been an increased trend towards angels partnering together to reduce individual risk. Follow-on investments have also seen an increase in angel funding and promising start-ups have received investments targeted to keep them alive through to the other side of the credit crunch. It is obvious that angel investors intend to stay in the game and are even growing in numbers. They are just being a little more selective when choosing the right business to assist with needed capital and invaluable assistance. The numbers bear this out.

In the most recent report from the University of New Hampshire’s Center for Venture Research (as of this magazine’s printing) the numbers show that while angels are being more cautious, they are still investing. For instance, total investments for the first half of 2008 were up 4.2 percent over the same time-period in 2007. Though there was a 3.8 percent decrease in the number of entrepreneurial firms that received fund-

ing in that timeframe, the number of angel investors increased by 2.1 percent. The decrease in investments coupled with the increase in funding and angel investors resulted in an 8 percent increase in the average size of the individual investment.

Offsetting Risk

Even though over half of all seed and start-up capital in the U.S. comes from angel investors, market strains are causing them to be innovative in their approach to funding and more disciplined in their investment strategies. Existing portfolio companies will get first attention in a downturn.

It is also important to remember that angels are not only investing their capital, but their entrepreneurial skills as well. In the past, this has led most angels to assist small firms in their geographic area, allowing them to be more hands-on. The past year has seen a number of angels reaching outside of that area to work with angels around the country, pooling funds to assist viable business ventures. Syndicates of angels are co-investing with other groups of angels. Angels have also historically provided capital in the early stages of a firm, though to offset personal risk, some have recently begun to engage in more later-

stage rounds. While some investors are pulling out, the changes made by those that remain and those who have entered the ring, could serve to maintain investment levels.

Light at the End of the Tunnel

The economic downturn has created some favorable conditions for angels by driving down the cost of starting many businesses, which makes start-up costs easier to bear. With valuation down, angels are able to get more of a company for their money.

So where is this money going? According to the University of New Hampshire report referenced earlier in the article, at 18 percent, software accounted for the largest percentage of investment. Software is closely followed by health care, industrial/energy and retail, with biotech falling from the top three preferred investing sectors for the first time in years.

All in all, the message angel investors seem to be giving is that even in this uncertain economic era, they are still funding start-ups. Competition is steep. Fewer firms are receiving funding, but by stepping up the game, being prepared and standing out in the crowd, it is not out of the question. As one angel put it, “the survivors will win.” ■

Solving the PoR Puzzle: Identifying Funding by Following PEs

by Alexander Stoyen, Ph.D.

Only technologies that are consistent with prevailing technology development strategy are part of the technology development stage.

SMALL BUSINESS CONCERNS (SBCs), with SBIR/STTR Phase II contracts from the Department of Defense, need to understand how to transition their technologies into acquisition programs of record (PORs) and how that is best accomplished. While every instance of technology transition offers unique and intricate considerations depending on POR timing, capability gap and operational requirements, and availability of funding the following article summarizes the process and makes straightforward, useful recommendations for moving forward.

First, a strong case must be presented to a program manager with a current or aspiring POR in order to potentially gain admission into the said POR. As a Program or Record, or preliminary work towards a POR, matures in its current lifecycle spiral, technology insertion typically becomes more difficult. The most opportune time to approach a program manager is when a current or candidate POR is involved in Concept Refinement and/or as the execution of an approved Analysis of Alternatives (AoA) plan takes place. This occurs well before the Milestone A review. During the consequent technology development stage (from Milestone A to Milestone B), technology is matured in preparation for the post-Milestone B System Development and Demonstration (SDD) stage.

Only technologies that are consistent with the prevailing technology development strategy are part of the technology development stage. Because it increases programmatic risks, a technology that was not part of the concept refinement AoA consideration is not typically admitted. Moreover, no program has unlimited funds or time. Finally, per Public Law 109-163, Section 801, all technologies in an acquisition program should achieve Technology Readiness Level (TRL) 6 prior to Milestone B. This means that the Technology Development Stage should bring all candidate technologies from TRLs 2 to 4 to a solid TRL 6 or higher. Few SBIR/STTR-seeded technologies are properly qualified, tested or assessed prior to Phase II completion, so it is fair to say that most of these technologies are relatively immature. This uncertainty requires the program manager to assume additional programmatic risk when including such technologies.

To better position the technology for inclusion in a POR, an SBC should try to align the technology with documented capability gaps and program requirements early in the acquisition cycle of the candidate

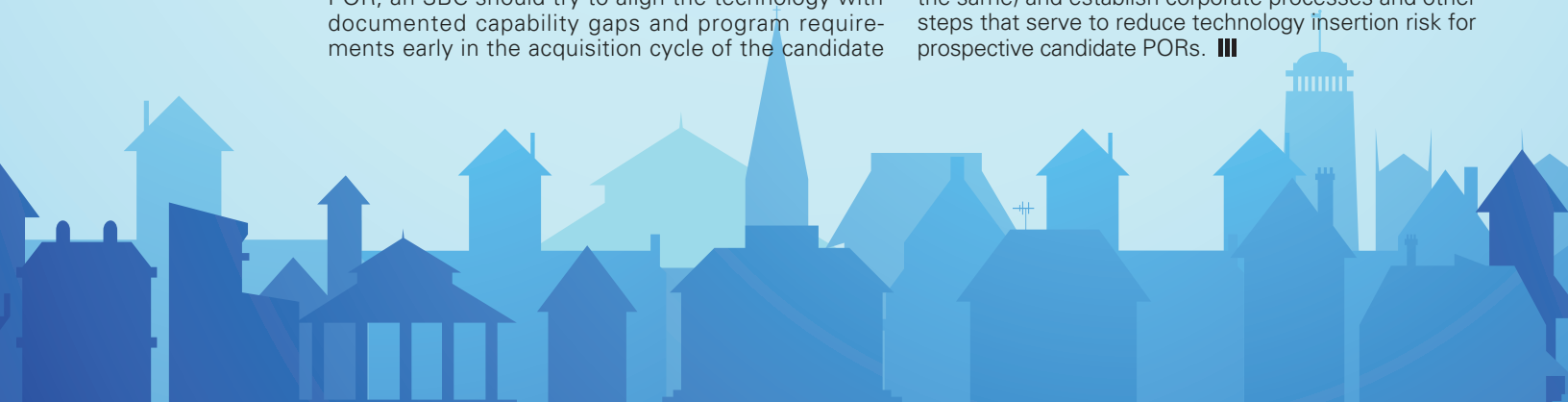
transition POR. In general, transitions into acquisition programs of record (PORs) require substantial effort and dedication. In this effort, it is critical to research public sources concerning the targeted POR, learning as much as possible about the program and preparing the technology to fill a capability need.

Particularly helpful sources of program information are the descriptive summaries of Program Elements (PE). RDT&E program elements (accounting for 6.1-6.7 spending) are easily found via the online RDDS system. (See below right for the RDDS web address.) For example, consider the summary of the PE 0604270N. Whereas the PE is nominally a 6.4 (Advanced Component Development and Prototypes (ACD&P)), it is actually designated as a Budget Activity 5 (as a 6.5 PE would normally be), for System Development & Demonstration. The specific activity is Electronic Warfare Development.

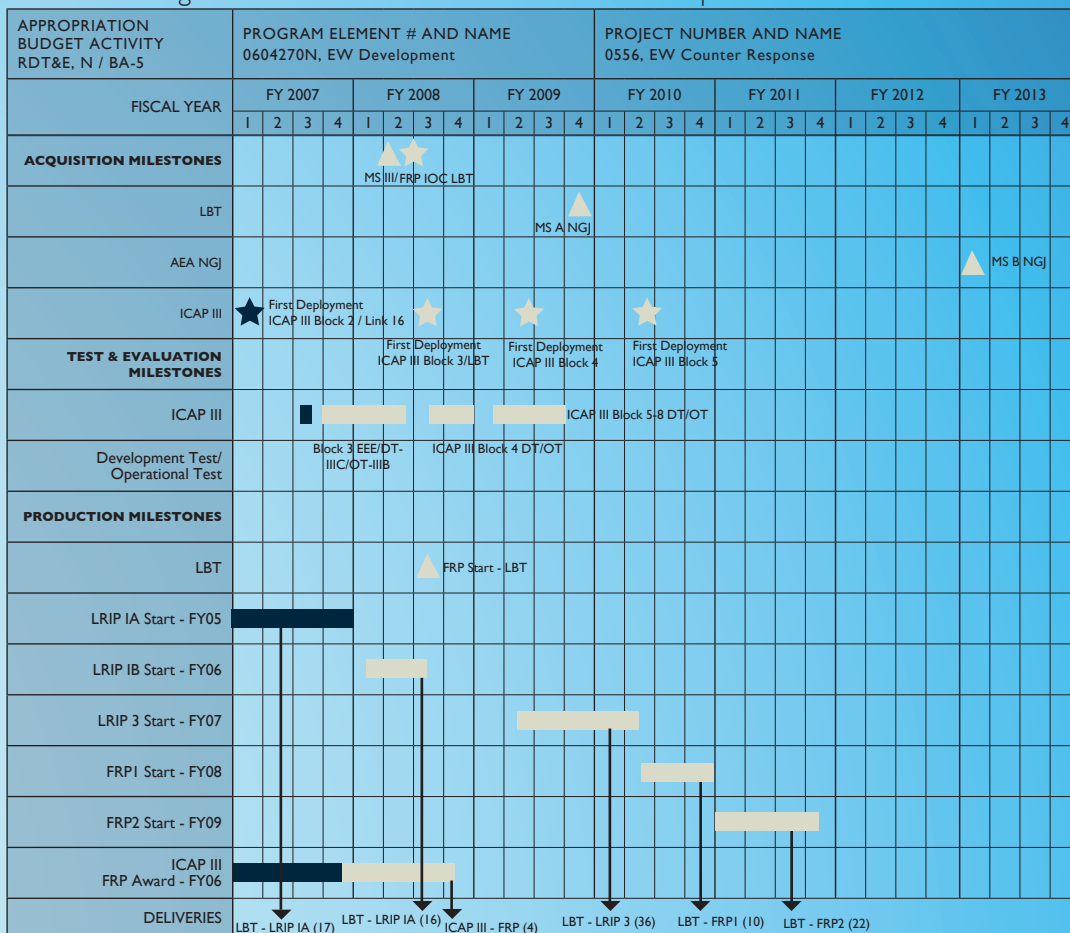
Looking over the milestone diagram (see Fig. 1), it shows the milestone schedule of project 0556, Electronic Warfare Counter-Response. As expected, the majority of the projects in PE 0604270N are fairly mature and as of this article's writing, most activities are in various stages of deployment with many already in Low Rate Initial Production (LRIP) or even Full Rate Production (FRP). Attempting to insert a new technology at these advanced stages would be difficult, at best.

However, on the other hand, the activity Next Generation Jammer (NGJ) is not planning its Milestone A review until 4Q2009 and is planning another three+ years of technology development, that will culminate in the Milestone B review in 1Q2013. Inserting additional technology that addresses a capability gap into the Next Generation Jammer is much more likely and should be easier than attempting the same insertion with more mature activities.

While this brief discussion provides introductory exposure to POR transition and is by no means a definitive source of information. Keep in mind that every technology transition situation may well exhibit unique properties. SBCs with SBIR/STTR, and other seed S&T contracts that wish to transition technology in this manner should devote substantial resources to technology maturation (including informal technology readiness assessments and documentation and testing towards the same) and establish corporate processes and other steps that serve to reduce technology insertion risk for prospective candidate PORs. ■



Milestone Diagram for Electronic Warfare Counter Response



Technology Readiness Level (TRL) 6: The system/subsystem model or prototype is demonstrated in a relevant environment.



Phase III Transition Portal: For more information concerning TRLs and the acquisition process can be found by clicking the Acquisition tab on the Phase III Transition Portal site: dawnbreaker.com/p3p/home



RDT&E Program Elements: RDT&E program elements can be found via the RDDS system: js.pentagon.mil/descriptivesum

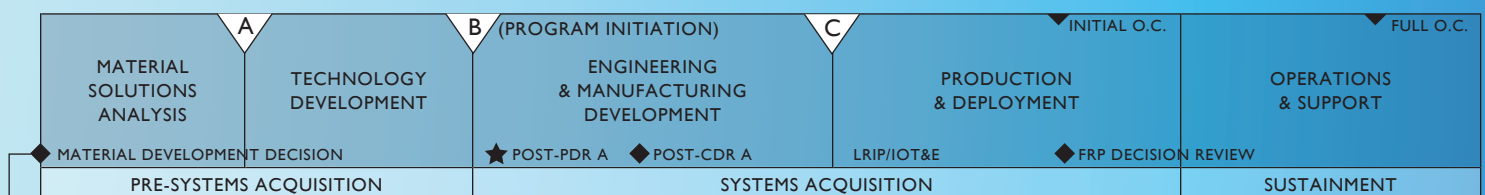


Analysis of Alternatives (AoA): Evaluation of the performance, operational effectiveness, operational suitability and estimated costs of alternative systems to meet a mission capability.



Milestone B Review: an evaluation of program concepts for implementing the new system. Milestone B approval authorizes the PM/FPO to move the system into System Development and Demonstration phase.

The Defense Acquisition Management System



◆ = DECISION POINT ▼ = MILESTONE REVIEW ★ = DECISION POINT IF PDR IS NOT CONDUCTED BEFORE MILESTONE B

USER NEEDS / TECHNOLOGY OPPORTUNITIES & RESOURCES

► THE MATERIAL DEVELOPMENT DECISION PRECEDES ENTRY INTO ANY PHASE OF THE ACQUISITIONS MANAGEMENT SYSTEM

► ENTRANCE CRITERIA MET BEFORE ENTERING PHASE

► EVOLUTIONARY ACQUISITION OR SINGLE STEP TO FULL CAPABILITY



Preparing to Sell A Business: 11 Must Haves for Due Diligence

by Terry M. McMahon



SELLING A BUSINESS is not like selling real estate. It is a complicated endeavor requiring significant planning and preparation by the Seller. Similar to the creation of a commercialization plan used to launch a business, selling a business requires a comprehensive game plan and a team of professionals to guide the sale to closure. Effective teams generally consist of a broker, CPA, attorney, appraiser and personal financial planner.

Realistic Valuations

Obviously, this is not a simple process. It can take several months and require high-levels of confidentiality, which is crucial because suppliers, customers and employees are often unaware that the business is for sale. The Seller can keep it moving though, through thorough preparation. Notably, negotiations most often break down because the Buyer and Seller cannot come to an agreement on the value of the company for sale, which is typically the result of unrealistic valuation expectations from the Seller. The business should be valued from two perspectives:



See "What's It Worth" in Issue I, Vol. I of Phase III Magazine to learn more about basic valuation approaches, available at dawnbreaker.com

- ▶ **Perspective One:** The perspective of a financial buyer where no synergies are involved
- ▶ **Perspective Two:** The perspective of a strategic buyer where synergies are involved and they might pay a premium to obtain the synergies.

A realistic valuation of a company should be determined early on with decisions made concerning the asking price and terms, the expected price and

terms, and the walk away price and terms. These decisions should be made before getting caught-up in "deal fever."

Mitigating Risk With Due Diligence

With so many unknowns to consider, especially in the current economic environment, the risks in making a corporate acquisition are significant. To mitigate the risk, the acquiring group will conduct due diligence, which is the information gathering process Buyers conduct prior to committing to the purchase of a business. The Seller is expected to provide thorough information. Not doing so can be construed as an attempt to conceal potential liabilities and open the door to future litigation.

Preparing the materials for due diligence will take time. Anticipating the types of information that may be requested and planning ahead will keep the momentum of the deal going. Advanced preparation also gives the positive impression that the business is run in a professional manner. This raises the face value of the company in the eyes of the acquirer and could lead to a higher sale price.

The following 11 items are necessary in preparation for due diligence.

Financial Review

A comprehensive financial review is critical. Accurate balance sheets, earning statements, and cash flow statements, going back several years will be requested by potential Buyers. Most Buyers will also want to discuss pricing policy and marketplace position. Audited financial statements for the current year to date and the three prior years are generally required unless the company has revenue under a few millions dollars. It is also common for a Buyer to request reports of a mix of sales by business/product segment over the prior three years with the associated gross margin. Because asset values represent a significant part of the asking price, Buyers will want to inspect the business property/equipment to understand the rationale behind the valuation process.

Expenses

A list of expenses that will not be considerations for a Buyer, including the current owner(s) take out of the business and any related expenses.

Company Milestones

A basic timeline of significant company events/milestones starting with the creation of the company and continuing to the current day.

Organizational Charts

An organizational chart that includes supervisory levels and the number of their employees. The exception to this is for Sales and Engineering functions where all employees should be shown. In addition, a Seller should also:

- ▶ Prepare a list showing total employee headcount over the last three years, listing the length of service for all employees.
- ▶ Outline payroll commitments, benefits packages and other HR issues.

- ▶ As for the Engineering function, develop information on the background and qualifications of department personnel. Document the product development processes and design tools/systems in place and indicate how much engineering effort is spent on:
 - ▶ Live order applications
 - ▶ Cost reduction projects
 - ▶ Product extensions
 - ▶ New products

Intellectual Property

Documentation on Intellectual Property (IP), patents, inventions, invention studies (whether patentable or un-patentable), designs, copyrights, mask works, trademarks, service marks, trade dress, trade names, secret formulae, trade secrets, secret processes, computer programs, algorithms, confidential information and know-how, including:

- ▶ A list of all IP that the company owns.
- ▶ Copies of patent documents:
 - ▶ Agreements and associated royalty reports obtaining or granting the right to use any IP;
 - ▶ Any outstanding order, decree, judgment, stipulation or agreement restricting the scope of the use of any IP owned or used by the Seller.
- ▶ A list of all pending litigation, including the status of any settlement discussions, involving IP rights in which the company is named defendant or where the Seller/Associate is a named plaintiff.

Operations

The new owner will approach operations in their own way, however they will need to understand current processes and procedures, vendor relationships, ordering procedures, inventory management, management systems and customer relations. Everything that relates to the day-to-day operation of the company is fair game in the due diligence process.

Customer Base Profile

The acquirer could request a customer list, from the last three years, for 80 percent of the business. Due to the sensitive nature of this request, it is typically acceptable to indicate the total number of customer accounts and the number of customer accounts that comprise over five percent of total business sales.

Percentage Of Sales From Key Industries

A profile of the percentage sales from key industry segments will be expected. List 80 percent of the sales by industry group, with the remaining listed as "Other."

Sales/Marketing Summary

A summary of the marketing program and a list of the sales tools/support with a brief description of what the company does for:

- ▶ Price books (electronic or hard copy)
- ▶ Product selection tools
- ▶ Literature
- ▶ Training
- ▶ Advertising

- ▶ Tradeshows
- ▶ Lead generation
- ▶ Newsletters
- ▶ Ecommerce

Legal/Liability Issues

Legal and liability issues are a very strong concern of the due diligence process. Prepare a list of:

- ▶ All necessary permits, licenses, franchises and other authorizations from public authorities
- ▶ Any pending or threatened action or proceedings which could result in the revocation/suspension of business activities

Human Resources

The following HR issues will be of particular interest to any potential Buyer.

- ▶ Is there a union?
- ▶ What is the employee turnover?
- ▶ Review of benefits
 - ▶ Pension Plan/Savings match
 - ▶ Vacation
 - ▶ Health programs/Dental/Optical
 - ▶ Disability
 - ▶ Relocation policies
- ▶ Employee Health and Safety (EHS)
 - ▶ Who has the responsibility for EHS at the location?
 - ▶ Is there a safety committee? What are its activities?
 - ▶ What safety statistics are routinely collected?
 - ▶ Have any OSHA citations been received in last five years?
 - ▶ Has the facility ever experienced a fatality?
 - ▶ How many workman's compensation claims are there per year over the past three years?
 - ▶ What process is used in drug testing?
- ▶ Air & water pollution control
 - ▶ Is a National Pollutant Discharge Elimination System (NPDES) permit in place?
 - ▶ Has the business received any notices of violation, administrative orders or compliance schedules in the past three years?
 - ▶ What is the facility's source of potable water?

All parties want the due diligence process to run smoothly. While preparation for the sale requires a lot of work up front, it is the best insurance against a drawn out sales transaction, which can cause high levels of frustration on both sides of the negotiating table and may not lead to a favorable outcome for either side.

The Strategic Buyer Strategy

After doing all of this work, it is to the seller's advantage to focus efforts on interacting with a strategic buyer. A strategic buyer is one who can do more with the business than the seller could if it remained as a stand-alone company. These synergies are often the reason why the strategic buyer is interested in the acquiring company. Synergies have a value and can come in the form of sales growth (they can grow the sales

With few second chances in selling a business, it is critical that two key members of the team—the investment banker/broker and the lawyer—are experienced and trustworthy.

faster than the acquired company can do itself), cost savings (eliminate duplication of resources or leverage better purchasing power), and financial synergy (lower cost of capital, taxes, debt capacity).

Evaluating the potential synergies the buyer sees in the business should be part of the seller's due diligence process when entering into negotiations. Do not expect the acquiring company to openly reveal these synergies due to the natural tension between a buyer and a seller. Obviously, the seller wants to receive from the buyer an amount that includes the synergies in the valuation and the buyer only wants pay for what the business or technology would be worth if it continued as a stand-alone business.

The seller needs to make an assessment of the company's baseline value as a stand-alone company and then value it again from the viewpoint of the acquirer, with the realization of potential synergies. It works to seller's benefit to understand the magnitude and importance of synergies to the acquiring company. If they are important, then the seller is in a stronger position to negotiate a value that takes into account a portion of the synergies—increasing the selling price above a stand-alone value. If purchasing the company only plays a small part in realizing the buyer's synergies then the seller is in a weaker negotiating position. Knowledge is power, and adequate due diligence will prepare the seller for these negotiations and will likely provide a better overall outcome for the final sale. ■■

Check List for Marketing Your Company For Sale



Just as selling your business is a little more complicated than selling real estate, marketing your company for sale requires a little more leg work than marketing a widget does.

FIND POTENTIAL BUYERS

- ▶ Identify synergistic companies that would place the most value on your business. Consider:
 - ▶ strategic alliance partners
 - ▶ competitors
 - ▶ vendors
 - ▶ key management personnel
 - ▶ financial buyers in the industry

SCREEN POTENTIAL BUYERS

- ▶ Qualify potential buyers prior to providing information about the business.
- ▶ Establish a contact chart that identifies the key relationship, contact information and result of last contact.
- ▶ Rank the entries on the contact chart in order of anticipated level of interest and probability for closing a transaction.

MEET WITH POTENTIAL BUYERS

- ▶ Divide the contact list of potential buyers up by relationship to members of the business sales team. The team member with the closest relationship should make the introductory call.
- ▶ Prior to sharing any confidential information, make certain there is a nondisclosure agreement in place and that negotiations take place with a person who has the corporate authority to make an agreement.

PROVIDE AN OFFERING MEMORANDUM TO POTENTIAL BUYERS

- ▶ The offering memorandum is an extremely important document that incorporates the valuation of and describes the business. This document is the primary means to describe the seller's business, the basic value proposition and must combine both salesmanship and truth—putting the business in the most positive light. This document sets the stage for all future negotiations. It should accomplish the following:
 - ▶ Describe the industry, core products/services, mar-

keting/growth strategy and the management team.

- ▶ Provide three years of historical, quarterly income statements and a balance sheet.
- ▶ Providing financial projections for the company should also be considered as an inclusion to the offering memorandum, since it is likely to be the basis for determining the valuation of the company.

ASK FOR A LETTER OF INTENT

- ▶ When a potential Buyer shows interest, the Seller should ask for a "Letter of Intent" (LOI).
 - ▶ An LOI is a written promise from the potential buyer to the seller that essentially says that the buyer will follow through with the deal if due diligence shows that the information provided is substantially correct. It lays out the deal structure including offering price, terms and other important information.
 - ▶ LOIs resemble written contracts, but are usually not binding upon the parties in their entirety. However, many LOIs contain provisions that are binding, such as non-disclosure agreements, a covenant to negotiate in good faith, or a "stand-still"/"no-shop" provision that promises exclusive rights to negotiate.
 - ▶ An LOI may also be referred to as a memorandum of understanding (MOU).
- ▶ "Letters of Intent" need to be evaluated and a first choice must be selected for negotiation. It is considered unethical to deal with multiple buyers, so only negotiate with only the top buyer (for a limited time). If that falls through, move onto buyer number two and so on.

DUE DILIGENCE AND NEGOTIATING

- ▶ During this time frame (which typically lasts no longer than 4 to 6 weeks), the prospective buyer has the right to delve as deeply into the business as they need to in order to feel comfortable in committing to the purchase. This scrutiny of financials, physical inventories and even interviews with key employees can be intense and may be uncomfortable at times. Remember though, while it is stressful, due diligence is survivable.

COMPLETE THE SALE

- ▶ Make a list that includes a time-table of all closing items needed to complete the sale and follow through on them quickly. ■■

About Us ...

Dawnbreaker® , Inc.

Dawnbreaker specializes in providing commercialization assistance to small advanced technology firms and their investors. Since 1990, we have worked with over 2,500 firms that have received funding from the Small Business Innovation Research (SBIR) program, the Small Business Technology Transfer (STTR) program, the Advanced Technology Program (ATP), and others.

Dawnbreaker's depth is in understanding the intent, method and objectives of the SBIR and STTR programs. Having worked within large corporations and small businesses, our staff understands the perspective and financial imperatives of both and is uniquely well-prepared to assist companies in planning for and succeeding in transitioning to Phase III (Commercial phase).

The success of our services is reflected not only in our track record, which includes a 60 to 1 return on investment, but also in the percentage of companies that receive investment and/or increased sales within 12–18 month of a programs' culminating Opportunity Forum®. To date, over \$1 billion has been secured by participating firms. For more information, visit our website at www.dawnbreaker.com.

Phase III Commercialization™ Magazine

Phase III Commercialization™ magazine is a publication of Dawnbreaker, Inc. and is meant to provide information, gleaned from our highly knowledgeable staff, to advanced technology firms, prime contractors, program managers and investors in the areas of health care, energy and defense.

Editors and Designers for Phase III Commercialization

Executive Editor
Dr. Jenny C. Servo

Art Director/Graphic Designer
Adrienne Stiles

Managing Editor
Julie A. Smith

Comments

We welcome comments and questions from our readers. Please feel free to email us at phase3editor@dawnbreaker.com.

All mail should be sent to:
Editor, *Phase III Commercialization*
Dawnbreaker, Inc.
2117 Buffalo Rd., Suite 193
Rochester, NY 14624



MARKETING COMMUNICATIONS

Your plate is full. You are steering the growth of your company, doing it all and burning the candle at both ends. In the never-ending transformation of your company, let Dawnbreaker assist you.

Dawnbreaker, a leader in Small Business Innovation Research programming, is a vendor with an appreciation of small business challenges. We can provide the services you need to keep your company in the forefront of your customers' minds.

Our professional marketing and communications staff can help you sharpen the content of your message to the world. Dawnbreaker's services are customized and interactive. We are here to meet your needs by meeting your expectations and objectives by positioning your company/products to target your customers.

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FOR MORE INFORMATION, CONTACT:



LYN BARNETT
585.617.9493
lbarnett@dawnbreaker.com

[illegible]

Services available for small businesses, government agencies and prime contractors.

Contact Lyn Barnett: Phone: (585) 617-9426 | Fax: (916) 367-7575 | Email: lbarnett@dawnbreaker.com

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