Angels and Informal Risk Capital

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Raising risk capital is always a challenging and difficult task. "Business angels" play a key role in the risk capital market by providing seed capital for inventors, and start-up and growth capital for small, technology-based firms. This article discusses the investment characteristics of a sample of angels active in New England, offers suggestions for entrepreneurs looking for angels, and recommends steps to improve the efficiency of the informal risk capital market. Ed.

The 1980s have been touted as an age of technological entrepreneurship in the United States. Success stories like DEC and Apple have stimulated expectations for an economy energized by technology and entrepreneurs. A growing body of research data documents the contribution of small, technology-based firms (STBFs) to job creation, technological innovation, and other economic benefits, such as productivity gains, price stability, and favorable trade balances. The Small Business Innovation Development Act of 1982 is testimony to the economic and technological virtues attributed to STBFs (and to the increasing political influence of small business). The Act provides for a federal investment of about $1 billion in research by STBFs over the next five years.

Risk capital investors play an essential role in the growth of the high-tech sector. However, despite tremendous growth in risk capital investments in STBFs, there is a continuing perception that "gaps" exist in the capital markets for smaller firms, and this raises questions about the vigor of any "age of entrepreneurship." Though such gaps have not been convincingly documented, the capital gap folklore maintains that there are shortages of product development financing for technology-based inventors, of start-up financing for STBFs that fail to meet the criteria of professional venture capital investors, and of equity financing for closely held STBFs that are growing at a faster rate than internal cash flows can support. Created by Congress in 1958, the Small Business Investment Company (SBIC) program was an early institutional attempt to fill such gaps. Following the 1980 White House Conference on Small Business, more recent efforts to deal with the gap include the Small Business Investment Incentive Act of 1980 and the SEC's new Regulation D streamlining securities law for small business.

The capital gap folklore is based upon the observable behavior of financial institutions, including SBICs and professional venture capital firms. However, the data we have collected suggest that capital gaps may be more apparent than real. The folklore overlooks the investment record of informal risk capital investors — the "business angels." (Angels do not include founders, friends, or relatives.) Not only do these angels exist, they may represent the largest pool of risk capital in the country. According to our data, they tend to invest in precisely the areas that are cited as gaps in the capital markets for STBFs.

The effect of capital gaps can be created when markets fail to function efficiently. Modern financial theory rests upon assumptions of efficient capital markets where all relevant information about sources of funds and about investment opportunities is freely available to buyers and sellers of capital. Efficient risk capital markets require fully informed entrepreneurs and investors. Our data indicate that this necessary condition is not fulfilled in the angel segment of the risk capital markets. In the absence of efficient markets, the flow of capital from less productive to more productive uses will be impeded. The efficiency issue is a cause for concern, because angels play an essential role in the financing of many STBFs. Angels fill what would otherwise be a void in the risk capital markets by providing development funds for technology-based inventors, seed capital for STBFs that do not meet the size and growth criteria of professional venture investors, and equity financing for established STBFs. In 1980-81 Jeffry Timmons

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and David Gumpert conducted a survey of fifty-one of the largest and most active professional venture capital firms. The survey showed that the range of an individual investment was from $300,000 to $4 million and that the size of a typical individual investment was $813,000. The figures were similar for SBICs, but substantially higher for corporate venture affiliates.[4] However, it is clear that risk capital financing of between $50,000 and $500,000 is primarily the domain of the angels and is a vital resource for many inventors and STBFs.

Many entrepreneurs will confirm that, once personal funds and "friendly money" have been exhausted, raising the first piece of external risk capital can be an enormous obstacle to creating or expanding a small, technology-based firm. STBFs tend to be founded by technically skilled individuals; although some of these founders may have management experience and marketing savvy, they seldom have had experience in the capital markets, particularly in the risk capital markets. The problem is compounded by the fact that the most likely sources of risk capital for many STBFs are the least visible — those mythical business angels. They are a diverse, dispersed population of individuals of means; many have created their own successful ventures and will invest their experience as well as their capital in ventures they support.

Informal Risk Capital

Any useful discussion of risk capital must recognize the diverse nature of the commodity and its sources of supply. The market for risk capital consists of at least three segments, each having a unique set of distinguishing characteristics:

— The public equity market,

— The professional venture capital market, and

— The market for informal risk capital (business angels).

Although the boundaries separating these segments are indistinct and often overlap, nonetheless an appreciation of the distinctions is essential for entrepreneurs seeking funds. A founder can waste much time talking to sources about deals that are unlikely to occur.

The public equity market and the professional venture capital market are relatively efficient and well understood. At the risk of serious oversimplification, it can be said that, if an entrepreneur is trying to raise from $2 million to $5 million (or more) for a venture with sex appeal, the speculative new issues market represents a potential source of funds. The professional venture capitalist is generally interested in ventures that require $500,000 (or more) of postrevenue financing, that yield projected revenues of more than $20 million within five to ten years, and that can go public or sell out by that time.

The informal risk capital market, on the other hand, is virtually invisible, inefficient, and often misunderstood. Yet searching for an angel is appropriate for a technology-based inventor looking for development funds or an entrepreneur looking for less than $500,000 to start or expand an STBF. Inefficiency and the invisible nature of the angel segment of the capital markets contribute to perceptions that funds for such purposes are unavailable.

There is evidence to suggest that individual investors (despite their low profile) represent the largest pool of risk capital in the country. In 1978 the organized venture capital industry invested approximately $500 million; in 1981 the industry invested an estimated $1.2 billion. Although there are no data documenting the total volume of risk capital provided by individuals, clues can be found. For example, in 1981 private placements reported by corporations to the SEC under Rule 146 totaled over $1 billion. In a 1980 SEC survey of a sample of issuers who filed Form 146, it was found that corporate issuers were engaged primarily in high technology or in other manufacturing or nonfinancial services, and that they were generally young companies employing few

workers. The survey indicated that 87 percent of those buying corporate issues were individual investors or personal trusts. The average amount invested by an individual in a corporate issue was $74,000. The $1 billion corporate financing reported under Rule 146 represents only a fraction of the total transactions that occurred in the informal risk capital market. Rule 146 private placements by noncorporate issuers engaged largely in oil- and gas-related activities or in the real-estate business totaled over $3 billion in 1981. Individuals and personal trusts represented 93 percent of the purchasers of noncorporate issues. Note also that Rule 146 private offering data exclude financings exempt from registration because of their intrastate nature (Rule 147) or financing by closely held firms under small-offering exemptions (Rules 240 and 242). Effective June 1982, Regulation D replaced the exemptive provisions that existed under Rules 146, 240, and 242.[2]

Other empirical data confirm the importance of angels in the financing of STBFs. In an examination of capital market imperfections, Charles River Associates, Inc. (CRA) excluded "individuals who act informally as providers of venture funds." Yet CRA commented that "they may represent the largest source of venture capital in the country." The CRA study looked at the composition of external funds received by STBFs prior to making initial public offerings. The study showed that between 1970 and 1974 "unaffiliated individuals" accounted for 15 percent of external funds while "venture capitalists" accounted for 12 percent. When the data were classified by stage (age of venture), unaffiliated individuals provided 17 percent of external capital during the start-up year, while venture capitalists provided 11 percent.[3]

A similar pattern can be found in David Brophy's study of financial support for new, technology-based firms that were incorporated and operating from 1965 to 1970. In a sample of Boston-area firms, private individuals (excluding founders, friends, and relatives) provided 14 percent of total financing and SBICs and private venture capital firms provided 15 percent. The figures for a sample of Ann Arbor and Detroit firms were 16 percent from individuals and 2 percent from venture capitalists.[4]

Clearly, angels play a key role in the early financing of many STBFs: one or more wealthy believers will provide seed capital, help solve problems, and exploit the opportunities associated with commercializing an invention or innovation or with starting up a new enterprise. Most entrepreneurs have heard of business angels and some entrepreneurs have found them. However, no one has ever really found out where angels come from, how many there are, how to find them, or what angels look for in a venture proposal.

The Study of Angels

With the SBA's seed capital we undertook a hunt for business angels in New England in an attempt to learn more about this invisible segment of the risk capital markets.[5] Our search turned up 133 investors who fit the description of a business angel, a sample large enough to at least draw tentative conclusions about the characteristics of angels. However, much more study is required before definitive statements can be made about the functioning of the informal risk capital market. Our work focused on the role of informal investors as a source of funds for three types of investment situations:

— Financing for technology-based inventors,

— Start-up and early stage financing for emerging firms, and

— Equity financing for small established firms growing faster than retained earnings can support.

This article presents the results of our research and our perceptions of the lessons they offer for entrepreneurs.

It took nine months and the assistance of several professional organizations to identify and collect data from our sample of angels. We discovered that angels tend to be found

in clusters that are linked by an informal network of friends and business associates. Finding one investor typically led to contacts with three or four more, a tedious but productive "snowball" search technique.

The total population of informal investors is unknown and probably unknowable. Our sample represents approximately ten investors per million population, or about 1 percent of the 1,000 per million incidence of "millionaires" based upon 1972 IRS data. Given ten years of inflation and the drop in capital gains tax rates, it is likely that the total population of angels in New England is substantially larger than our sample, perhaps by a factor of twenty or more.

Investment History

Our sample of angels reported risk capital investments totaling over $16 million in 320 ventures between 1976 and 1980, an average of one deal every two years for each investor. The average size of their investments was approximately $50,000, while the median size was about $20,000. Thirty-six percent of past investments involved less than $10,000, while 24 percent involved over $50,000.

In 60 percent of past financings, respondents participated with other individuals in larger transactions. It is clear that informal investors are accustomed to sharing investment opportunities with friends and business associates. Participation with other financially sophisticated individuals permits venture financing that approaches the $250,000 to $500,000 interest threshold of venture capital firms and equity-oriented SBICs.

Venture Life-cycle Preferences

The data developed by Gumpert and Timmons show that professional venture capital firms currently place from 25 percent to 35 percent of their funds in start-up situations; this is an increase from the mid-70s figure of approximately 15 percent.[6] While these professional investors appear to be increasingly willing to look at start-ups, their interest is generally limited to proposals from entrepreneurs with successful start-up track records or to investor-initiated start-ups in emerging technologies (e.g., genetic engineering and robotics). Even then their interest is only for ventures with enough growth potential to justify liquidation expectations through a public offering or acquisition by a larger firm within five to ten years of initial financing.

Historically, informal investors have been the principal source of external seed capital. The age distribution of ventures receiving financing from our sample of angels is consistent with this record. Forty-four percent of past financings were start-ups, and 80 percent involved ventures less than five years old. If the definition of start-up is tied to the achievement of break-even operations rather than age, 63 percent of past investments were in situations that had not achieved break-even performance. With respect to future investments, 78 percent of our sample expressed a "strong interest" in start-up and early stage financing for emerging firms. The lesson for entrepreneurs is clear: if you need less than $500,000 to launch a new venture, look for one or more angels.

For technology-based inventors the lesson is even more compelling to find an angel. One third of our sample of informal investors expressed a "strong interest" in financing technology-based inventors. An angel with technical and managerial experience in the commercialization of related technology can bring a "sense of the market" to the work of an inventor. When asked whether their interests were limited to specific fields of technology, the areas investors cited most frequently were electronics, computers, energy, and health care. However, the principal criterion cited by these investors was that the technology be in a field that they understood and could evaluate:

— "A field in which I have some technical competence."

— "Fields in which I am sufficiently experienced to permit evaluation."

— "Related to my background in organic chemistry and pharmaceuticals."

— "Those I know: electronics, physics, mechanics."

— "It is limited to what I know and understand myself, especially about the marketplace, or can get trustworthy opinions on."

Approximately one respondent in five expressed a "strong interest" in equity financing for established firms. Investors interested in established firms anticipated larger investments (approximately $75,000 per firm). In our sample of angels, the incidence of advanced technical training and start-up management experience was lower among investors interested in established firms than among investors interested either in technology-based inventors or in early stage financing for emerging firms.

Venture Relationships

Both informal investors and professional venture investors typically contribute more than capital to the situations in which they invest. They are active investors, generally playing a consulting role or serving on a working board of directors. The investors in our sample are no exception. They are a well-educated group and experienced in the management of start-up situations. Ninety-five percent hold four-year college degrees and 51 percent have graduate degrees. Of the graduate degrees, 44 percent are in a technical field and 35 percent are in business or economics (generally an MBA). Three-quarters of the sample had been involved in the start-up of a new venture.

The relationship between angels and their portfolio firms was tested by asking respondents about the nature of their contact with portfolio firms. Passive investors were defined as those whose contact consisted of receiving periodic reports and attending stockholder meetings. Active investors were defined as those whose relationship included one or more of the following roles: membership on the board of directors, a consulting role, part-time employment, or full-time employment. Eighty-four percent reported that they expect to play an active role, typically having an informal consulting relationship or serving on a board of directors. In addition to raising capital, the entrepreneur's task is to find investors with a combination of training and experience that will contribute to the venture's success. For first-time entrepreneurs this resource can be more valuable than capital.

Geographic Patterns

The tendency of informal investors to maintain close working contact with ventures they finance is reflected in the geographic distribution of their portfolios. Three-quarters of the firms financed by our sample of angels were located within 300 miles of the investor (roughly one day's drive). Fifty-eight percent were within 50 miles. The geographic distribution of portfolio ventures may also reflect the absence of systematic channels of communication between investors and entrepreneurs. The likelihood of an investment opportunity coming to an individual investor's attention increases, probably exponentially, the shorter the distance between the two parties. The lesson for entrepreneurs looking for angels is: "Look close to home."

Industry Preferences

Both professional and informal risk capital investors display a broad range of industry preferences. The fields that interest professional venture firms are described in Stanley Pratt's *Guide to Venture Capital Sources*, but information about the tastes of angels is very difficult to find.[7]

Our sample of angels reported a clear preference for manufacturing enterprises in general and for "high technology" manufacturing in particular. Fifty-seven percent of past investments were in manufacturing firms: 28 percent in high technology products, 20 percent in industrial products, and 9 percent in consumer products. Service firms were a distant second, attracting 12 percent of past investments. Reported investment objectives were more broadly distributed. At the top of the list, 64 percent of the respondents ex-

pressed "strong interest" in high technology manufacturing, 33 percent in industrial product manufacturing, and 30 percent in service firms. At the bottom of the list, only 5 percent expressed a "strong interest" in wholesale trade, 3 percent in retail trade, and 1 percent in transportation firms. Even in the least attractive categories (retail trade, wholesale trade, and transportation), one investor in three reported either a "moderate" or a "strong" investment interest. These patterns indicate two things to entrepreneurs: first, some types of ventures attract much more interest than others; and second, somewhere there is an angel interested in backing a viable opportunity in virtually any business or industry category.

Exit Expectations

Risk capital is "patient money." Returns take the form of long-term capital gains realized after an extended period during which an investment possesses little or no liquidity or marketability. Liquidation expectations with respect to timing and method are variables that influence risk capital investment decisions. Forty-seven percent of our respondents reported that provisions for liquidating their investment were "definitely" or "generally" included in the initial investment agreements.

The "patience level" of informal investors was tested in terms of expected holding periods. The median expected holding period of respondents was five to seven years. Entrepreneurs will be particularly interested that 24 percent of the respondents either consider the holding period unimportant or expect to hold their risk capital investments longer than ten years, a "patience level" well in excess of the typical expectations of venture capital firms and SBICs.

Patience and shared exit expectations are particularly critical for ventures with a five- to ten-year sales potential below $20 million (i.e., ventures with limited prospects for a public offering or acquisition by a larger firm within the typical exit horizon of risk capital investors). Patience is a virtue, and angels tend to be virtuous.

Rejected Proposals

Most entrepreneurial lessons come the hard way — by making mistakes — and the same can be said of venture investing. "Schools" for entrepreneurs and venture investors are out on the street, not on university campuses. However, some entrepreneurial lessons can be learned from the mistakes of others. In order to help guide future entrepreneurs, we wanted to discover the reasons our sample of investors had rejected past investment proposals.

The "typical" angel seriously considers and rejects two or three investment opportunities each year. The most common reasons cited for rejection were lack of confidence in management; unsatisfactory risk/reward ratios; absence of a well-defined business plan; the investor's unfamiliarity with products, processes, or markets; or the venture was a business the investor "did not want to be in." The following comments reflect the range of reasons for rejecting investment proposals:

- "Risk/return ratio was not adequate."
- "In most cases management did not seem adequate for the task at hand."
- "Simply not interested in the proposed businesses. Saw no socio/economic value in them."
- "Unable to agree on price."
- "Too much wishful thinking."
- "One of two key principals not sufficiently committed — too involved with another activity."
- "Unfamiliar with business."
- "Wife refused."

Entrepreneurs can learn several important lessons from this:

- Be realistic about the prospects for your venture and about the risks and costs of venture investing.
- Be sure all essential management func-

tions are staffed with experienced, committed individuals.

— If you cannot put your proposal in writing, you cannot finance it.

Risk Perceptions

The world is populated with risk-averse individuals, including venture investors. Risks and, consequently, required rewards vary substantially over the spectrum of risk capital investment opportunities. However, with the exception of a number of highly visible success stories, little is known about the past performance or future expectations of risk capital investors, particularly informal investors. The problem of dealing with risk/return considerations is compounded by the absence of generally accepted risk measurement criteria.

We addressed the question of risk by hypothesizing portfolios of ten investments of a given type, all of which met the investor's criteria regarding investment size, industry, location, and management qualifications at the time of the investment. Investors were asked to specify how many of the ten would probably turn out to be "losers." Losers were defined as investments in which eventual losses exceeded 50 percent of the original investment. This definition of risk was selected because it is representative of the way investors think about "downside risk."

We also asked risk-and-return questions for five types of investment portfolios:

— Technology-based inventors,

— Start-up firms,

— Infant firms about one year old and approaching break-even operations,

— Young firms less than five years old and entering a rapid growth stage, and

— Established firms growing too fast to finance from retained earnings.

By measuring risk and return for the five types of investments, it was possible to identify investors' risk/return tradeoffs — not only how expensive risk capital is in general, but also how much more expensive it is for inventors than for start-ups, established firms, etc.

As expected, venture investors perceive noticeable risk differences among the five types of portfolios. The median number of expected losers in a ten security portfolio covered the following range: seven for inventors, six for start-ups, five for infant firms, four for young firms, and two in a portfolio of ten established firms. The dispersion of expectations within each portfolio was also substantial. Informal investors do not have homogeneous perceptions of risk.

The range of loser expectations indicates that perceptions of risk drop dramatically over the developmental stages in the life of a new venture. Since risk and cost are directly related, entrepreneurs can conclude that the longer a venture can survive on personal funds, "sweat equity," and internal cash flow, the lower will be the cost of external risk capital — i.e., the lower the share of equity required to purchase any given amount of venture capital. A start-up venture that is at the frontier of some new technology can be an exception to this generalization. Having no track record may then be an advantage. In such a case the dreams (and sometimes avarice) of investors can lead to startling share prices. Recent examples of this include many genetic engineering firms and the Denver penny energy stocks. Selling romance instead of reality is a treacherous game, and is not recommended as a strategy for raising funds or for building lasting relationships with sophisticated investors.

Reward Expectations

Entrepreneurs who pursue venture capital are always concerned about the questions: "What will it cost?" and "How much of my venture will I have to give up to raise the capital I need?" The answers will depend upon a number of variables, including the amount of capital required and the rewards expected by investors. The other variables, however, are unique to the firm, its history, and its prospects, and this makes the answer

also unique to the firm. The methodology for arriving at mutually agreeable terms, however, is not unique, and every entrepreneur should become familiar with it before entering negotiations.[8]

Entrepreneurs are advised to think of fund raising as a process of "buying capital," rather than of "selling stock." The difference is subtle but important. Risk capital is a commodity that is available from a variety of sources on a variety of terms. For every venture some combination of sources and terms will be more appropriate than others, and will exert a powerful influence on the future performance of the venture. Besides the price, such factors as exit expectations, the availability of future growth funds, and the quality of management assistance available from an investor will all influence the choice of sources. The final deal should be a partnership of professionals with complementary resources and shared goals.

In our research we undertook an assessment of the reward expectations of informal investors. Within each risk category, we posed two questions dealing with rate-of-return expectations. The first dealt with the "upside potential" of the most successful venture in a ten investment portfolio. It was an attempt to identify the expectations of returns on individual investments. Presumably, all investments of a given type possess the upside potential of a "winner" at the time an investment is made. Expected returns on winners represent the cost of risk capital to successful inventors and entrepreneurs. This cost is substantially higher than the average cost of risk capital for a given type of investment. As the risk questions reveal, investors recognize that many expected winners turn into losers. Substantial returns on the real winners must offset the losers and provide an adequate return on a portfolio of risk capital investments. The second question dealt with portfolio rate-of-return expectations — the average cost of risk capital.

With respect to "winners," investor expectations ranged from median five-year returns of 50 percent per year and capital gains multiples of ten times for inventors and start-up firms, to 38 percent per year and six times for infant firms, to 30 percent per year and five times for young firms, to 23 percent per year and three times for established firms. Rate-of-return expectations were widely dispersed around these medians, again reflecting the diversity of the informal investor population. With respect to minimum acceptable portfolio returns, median expectations were a consistent 20 percent compound annual rate and a five-year capital gains multiple of three times for all portfolios except established firms, where minimum portfolio returns were 15 percent and capital gains multiples only two times in five years.

The data suggest several observations of interest to entrepreneurs. First, seed capital is expensive. Despite every entrepreneur's confidence in his or her "sure thing" investing in entrepreneurs is extremely risky, and investors must be paid to take risks. Remember that risk capital investors win only when a venture succeeds, i.e., only when the entrepreneur is an even bigger winner. Entrepreneurs and risk capital investors earn their financial rewards from creating ventures whose economic muscle (cash earning power) supports equity values many times the amount invested. Second, given the extraordinary risks inherent in risk capital investing, the overall level of both "winner" and portfolio expectations seems low when compared to the range of expectations usually attributed to professional venture capital firms. The relatively low cost of informal risk capital may be due in part to the nonfinancial rewards that often motivate informal investors.

Nonfinancial Rewards

The influence of nonfinancial factors is a characteristic that distinguishes angels from professional venture capitalists. Professional venture investors consider the financial risk/reward relationship to be paramount. Individual investors, on the other hand, often look for nonfinancial returns from their risk capital portfolios. These nonfinancial re-

turns fall into several categories; some of them reflect a sense of social responsibility of many informal investors and some seem to reflect forms of "psychic income" (or so-called "hot buttons") that motivate individuals. The influence of these motivators was explored through questions that posed a form of nonfinancial reward and asked investors which ones, if any, represented substitutes for financial returns. Investors responding affirmatively were then asked how large a reduction in the rate of return would be accepted in exchange for the nonfinancial reward. We recognized that tradeoffs may involve undertaking higher risks in situations exhibiting nonfinancial benefits, rather than accepting lower returns. Difficulties in quantifying risk precluded asking the question in this form.

The list of nonfinancial considerations included ventures creating jobs in areas of high unemployment, ventures developing socially useful technology (e.g., medical or energy-saving technology), ventures contributing to urban revitalization, ventures created by minority or female entrepreneurs, and the personal satisfaction derived from assisting entrepreneurs to build successful ventures in a free enterprise economy.

Nonfinancial considerations affect the decisions of a significant fraction of our sample of angels — 45 percent in the case of "assisting entrepreneurs." Between 35 percent and 40 percent of the respondents reported that they would accept lower returns (or perhaps assume higher risks) when risk capital investments create employment in their communities or contribute to the development of socially useful technology. Median rate-of-return reductions of 20 percent were associated with investments that create employment and that assist minority entrepreneurs. Entrepreneurs sensitive to the match between the characteristics of their ventures and the personal tastes of investors should be able to raise funds on terms that are attractive to both parties.

Referral Sources

In view of the difficulty entrepreneurs encounter in locating potential investors, we were particularly interested in discovering the channels through which angels most often learn of investment opportunities, and their level of satisfaction with these channels. Respondents were provided with an illustrative list of sources of investment opportunities, and asked to classify each as a "frequent source," an "occasional source," or "not a source" of proposals they had seriously considered during the previous five years.

The pattern of "frequent source" responses reveals that informal investors typically learn of investment opportunities through a network of friends and business associates. Fifty-two percent cited "business associates" as a frequent source, 50 percent cited "friends," and 41 percent cited "active personal search." The next most common source, "investment bankers," was cited as a frequent source by 15 percent of the respondents. All other sources, including business brokers, commercial bankers, attorneys, and accountants, were insignificant.

Tapping this informal network is not easy. Entrepreneurs can expect little guidance in finding their way through the maze of channels leading to informal risk capital. By the same token, angels continue to rely largely on random events to bring investment opportunities to their attention. There are no systematic techniques for identifying clusters of individual investors or for assessing their distinguishing investment objectives. The best advice for entrepreneurs seems to be: put your plan in writing and then look close to home for an angel familiar with the technologies and markets you plan to exploit.

The angels in our sample were asked if they were satisfied with the effectiveness of existing channels of communication between bona fide entrepreneurs seeking risk capital and investors like themselves. "Totally dissatisfied" respondents (34 percent) outnumbered "definitely satisfied" respondents (8 percent) by more than four to one. The opinions expressed by our sample of angels support a conclusion reached by Bean, Schiffel, and Mogee with respect to

venture capital markets in general: "The issue of little knowledge of the venture capital/new technological enterprise is multi-faceted. Entrepreneurs and potential entrepreneurs seem to need better information on financial sources while capital suppliers seem to need better information on new venture/technological investment opportunities."[9]

Respondents were then asked to indicate their interest in an experimental referral service that would direct investment opportunities to their attention. Fifty percent reported a "strong interest" in such a service and 38 percent reported a "moderate interest." Timeliness, objectivity, and confidentiality appear to be essential ingredients of such an activity.

Conclusion

Business angels are often the most likely sources of funds for technology-based inventors looking for development funds and for small, technology-based firms looking for start-up and growth capital. Collectively, angels appear to represent the largest pool of risk capital in the country, and they finance perhaps five times as many ventures as the public equity markets and professional venture capitalists combined. Based upon our experience, entrepreneurs can expedite the search for informal risk capital by following some basic guidelines:

1. First, prepare a comprehensive, documented business plan, including a two- to three-page synopsis of the venture and its management.
2. Be realistic about the risks of and prospects for the venture.
3. Recognize that risk capital is and deserves to be expensive, and understand the process investors follow in structuring and pricing a deal.
4. Look for an angel with relevant experience as well as capital — i.e., look close to home for an investor who understands the venture and will work with it.
5. Be prepared to discuss when and how an investor can cash in his or her chips. Shared liquidation expectations are especially critical for ventures with limited prospects for an eventual public offering or acquisition by a larger firm.
6. If the venture is likely to appeal to an individual investor's "hot buttons," exploit them for both sides will benefit.
7. Anticipate the need for substantial follow-on financing if the venture succeeds, and be sure that either the initial investors can provide it or they are themselves realistic about the cost of additional outside equity.

Public Policy Proposal

Since the end of World War II, the question of institutional gaps in the capital markets serving small firms has periodically been a topic for economic and political debate. The first serious study of capital gaps was conducted by the Federal Reserve Board and led to the Small Business Investment Act of 1958, which created the SBIC program. With the current interest in entrepreneurship and small business, capital formation is again a "hot topic" in and out of Washington. As examples of "capital gaps," the debate invariably cites problems in raising both seed capital for inventors and new ventures, and equity financing for expanding firms. While institutional gaps may well exist, our data suggest that effectively filling the gaps will depend more upon improving the efficiency of the private risk capital markets and the angel segment in particular, than upon creating new institutions or changing the behavior of old ones. With little or no recognition, successful entrepreneurs and other financially sophisticated individuals are filling the void in the institutional capital market. Eight out of ten investors in our sample would like to examine a broader range of

investment opportunities than they currently see.

Recent reductions in capital gains tax rates have enhanced the rewards for all risk capital investors. The impact of the reduction on the size of the professional venture capital pool is well known (increasing from roughly $2 billion in 1978 to over $7 billion today). There is no reason to believe that the impact on the pool of informal risk capital has been any less dramatic. The SEC's new Regulation D will also expedite the risk capital financing of small firms. Mobilization of the pool of "angel money" appears to be impeded by the absence of systematic, efficient channels of communication between entrepreneurs and investors.

The absence of private attempts to improve the efficiency of this market is due in part to the fragmented nature of the informal risk capital market and the existence of "external benefits" that cannot be captured by private investors. Public support for programs that improve the efficiency of private capital markets serving STBFs is justified by the benefits the public receives from STBFs: an enhanced flow of jobs, innovative technology, and tax revenues. Many STBFs will find access to informal risk capital essential to their ability to commercialize the federal investment in their research mandated by the Small Business Innovation Development Act: "To the extent that investment in small, technology-based firms produces external economies, too few resources will be allocated to all phases of investment in them, including generating information about investment opportunities."[10]

Our experience suggests that an experimental effort at expediting the private risk capital financing of emerging, technology-based ventures requires the efficient, systematic performance of four basic functions:

1. Identifying opportunities for risk capital investment in emerging, technology-based ventures and profiling their investment characteristics;
2. Identifying active informal investors and profiling their distinguishing investment objectives;
3. Providing a timely, confidential, and objective referral mechanism that will serve both investors and entrepreneurs;
4. Enhancing the networks of friends and business associates that link risk capital investors with each other, and expanding the flow of information through those networks.

The experimental venture outlined above would act as a clearinghouse of information for investors and entrepreneurs, and should be managed, in our judgment, by a respected but "disinterested" third party. No attempt would be made to evaluate the merits of investment proposals or the qualifications of investors. Given the characteristics of the informal risk capital market, it seems that such an activity should occur at the regional (rather than state or national) level (e.g., the six-state New England region). Professionally managed, such an activity should be at least partially self-supporting once the experimental stage is concluded, and data collection and referral techniques are refined.

At the request of committees of both houses of Congress, the Office of Technology Assessment is currently engaged in an eighteen-month study to "determine where high-technology firms are appearing and what factors influence their distribution and growth; [to] identify and evaluate the effectiveness of State and local initiatives to encourage innovation and high-technology development; [to] explore the changing opportunities presented by new and emerging technologies such as robotics and bioengineering; and [to] address the appropriate Federal role in affecting the conditions for such growth in the future."[11] Generating information about opportunities for private investment in STBFs is one federal role worth testing.

References

1
See D. E. Gumpert and J. A. Timmons, "Disregard Many Old Myths about Getting Venture Capital," *Harvard Business Review*, January-February 1982.

2
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3
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See D. T. Brophy, "Venture Capital Research," *Encyclopedia of Entrepreneurship* (Englewood Cliffs, NJ: Prentice-Hall, 1982), ch. IX.

5
The SBA's Office of Advocacy and Milton Stewart (then Chief Counsel for Advocacy and now president of the Small Business High Technology Institute) were our believers. See W. E. Wetzel and C. R. Seymour, *Informal Risk Capital in New England* (Prepared for Office of Advocacy, U.S. Small Business Administration, Durham, NH: University of New Hampshire, 1981)

6
See Gumpert and Timmons (January-February 1982).

7
See S. E. Pratt, ed., *Guide to Venture Capital Sources*, 6th ed. (Wellesley Hills, MA: Capital Publishing, 1982).

8
For a brief illustration of the technique, see Gumpert and Timmons (January-February 1982).
For a more detailed discussion, see, "Structuring and Pricing the Financing," in *Guide to Venture Capital Sources*, 6th ed., ed. S. E. Pratt (Wellesley Hills, MA: Capital Publishing, 1982); W. E. Wetzel, "Technovation and the Informal Investor," *Technovation*, Winter 1981.

9
See A. S. Bean, D. Schiffel, and M. E. Mogee, "The Venture Capital Market and Technological Innovation," *Research Policy* (4): 1975.

10
See Charles River Associates, Inc. (February 1976).

11
See *Technology, Innovation, and Regional Economic Development* (Washington, DC: Office of Technology Assessment, U.S. Congress, September 9, 1982).