



## Venture Capital

# How Venture Capital Works

by Bob Zider

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**Summary.** The popular mythology surrounding the U.S. venture-capital industry derives from a previous era. Venture capitalists who nurtured the computer industry in its infancy were legendary both for their risk-taking and for their hands-on operating experience.... [more](#)

Invention and innovation drive the U.S. economy. What's more, they have a powerful grip on the nation's collective imagination. The popular press is filled with against-all-odds success stories of Silicon Valley entrepreneurs. In these sagas, the entrepreneur is the modern-day cowboy, roaming new industrial frontiers much the same way that earlier Americans explored the West. At his side stands the venture capitalist, a trail-wise sidekick ready to

help the hero through all the tight spots—in exchange, of course, for a piece of the action.

As with most myths, there's some truth to this story. Arthur Rock, Tommy Davis, Tom Perkins, Eugene Kleiner, and other early venture capitalists are legendary for the parts they played in creating the modern computer industry. Their investing knowledge and operating experience were as valuable as their capital. But as the venture capital business has evolved over the past 30 years, the image of a cowboy with his sidekick has become increasingly outdated. Today's venture capitalists look more like bankers, and the entrepreneurs they fund look more like MBAs.

The U.S. venture-capital industry is envied throughout the world as an engine of economic growth. Although the collective imagination romanticizes the industry, separating the popular myths from the current realities is crucial to understanding how this important piece of the U.S. economy operates. For entrepreneurs (and would-be entrepreneurs), such an analysis may prove especially beneficial.

### **Venture Capital Fills a Void**

Contrary to popular perception, venture capital plays only a minor role in funding basic innovation. Venture capitalists invested more than \$10 billion in 1997, but only 6%, or \$600 million, went to start-ups. Moreover, we estimate that less than \$1 billion of the total venture-capital pool went to R&D. The majority of that capital went to follow-on funding for projects originally developed through the far greater expenditures of governments (\$63 billion) and corporations (\$133 billion).

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### **Profile of the Ideal Entrepreneur**

From a venture capitalist's perspective, the ideal entrepreneur: is qualified in a "hot" area of ...



Where venture money plays an important role is in the next stage of the innovation life cycle—the period in a company's life when it begins to commercialize its innovation. We estimate that more than 80% of the money invested by venture capitalists goes into building the infrastructure required to grow the business—in expense investments (manufacturing, marketing, and sales) and the balance sheet (providing fixed assets and working capital).

Venture money is not long-term money. The idea is to invest in a company's balance sheet and infrastructure until it reaches a sufficient size and credibility so that it can be sold to a corporation or so that the institutional public-equity markets can step in and provide liquidity. In essence, the venture capitalist buys a stake in an entrepreneur's idea, nurtures it for a short period of time, and then exits with the help of an investment banker.

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Venture capital's niche exists because of the structure and rules of capital markets. Someone with an idea or a new technology often has no other institution to turn to. Usury laws limit the interest banks can charge on loans—and the risks inherent in start-ups usually justify higher rates than allowed by law. Thus bankers will only finance a new business to the extent that there are hard assets against which to secure the debt. And in today's information-based economy, many start-ups have few hard assets.

Furthermore, investment banks and public equity are both constrained by regulations and operating practices meant to protect the public investor. Historically, a company could not access the public market without sales of about \$15 million, assets of \$10 million, and a reasonable profit history. To put this in perspective, less than 2% of the more than 5 million corporations in the United States have more than \$10 million in revenues. Although the IPO threshold has been lowered recently through the issuance of development-stage company stocks, in general the financing window for companies with less than \$10 million in revenue remains closed to the entrepreneur.

Venture capital fills the void between sources of funds for innovation (chiefly corporations, government bodies, and the entrepreneur's friends and family) and traditional, lower-cost sources of capital available to ongoing concerns. Filling that void successfully requires the venture capital industry to provide a sufficient return on capital to attract private equity funds, attractive returns for its own participants, and sufficient upside potential to entrepreneurs to attract high-quality ideas that will generate high returns. Put simply, the challenge is to earn a consistently superior return on investments in inherently risky business ventures.

### **Sufficient Returns at Acceptable Risk**

Investors in venture capital funds are typically very large institutions such as pension funds, financial firms, insurance companies, and university endowments—all of which put a small percentage of their total funds into high-risk investments. They expect a return of between 25% and 35% per year over the lifetime of the investment. Because these investments represent such a tiny part of the institutional investors' portfolios, venture capitalists have a lot of latitude. What leads these institutions to invest in a fund is not the specific investments but the firm's

overall track record, the fund's "story," and their confidence in the partners themselves.

How do venture capitalists meet their investors' expectations at acceptable risk levels? The answer lies in their investment profile and in how they structure each deal.

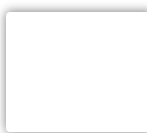
**The Investment Profile.** One myth is that venture capitalists invest in good people and good ideas. The reality is that they invest in good industries—that is, industries that are more competitively forgiving than the market as a whole. In 1980, for example, nearly 20% of venture capital investments went to the energy industry. More recently, the flow of capital has shifted rapidly from genetic engineering, specialty retailing, and computer hardware to CD-ROMs, multimedia, telecommunications, and software companies. Now, more than 25% of disbursements are devoted to the internet "space." The apparent randomness of these shifts among technologies and industry segments is misleading; the targeted segment in each case was growing fast, and its capacity promised to be constrained in the next five years. To put this in context, we estimate that less than 10% of all U.S. economic activity occurs in segments projected to grow more than 15% a year over the next five years.

In effect, venture capitalists focus on the middle part of the classic industry S-curve. They avoid both the early stages, when technologies are uncertain and market needs are unknown, and the later stages, when competitive shakeouts and consolidations are inevitable and growth rates slow dramatically. Consider the disk drive industry. In 1983, more than 40 venture-funded companies and more than 80 others existed. By late 1984, the industry market value had plunged from \$5.4 billion to \$1.4 billion. Today only five major players remain.

**The myth is that venture capitalists invest in good people and good ideas. The reality is that they invest in good industries.**

Growing within high-growth segments is a lot easier than doing so in low-, no-, or negative-growth ones, as every businessperson knows. In other words, regardless of the talent or charisma of individual entrepreneurs, they rarely receive backing from a VC if their businesses are in low-growth market segments. What these investment flows reflect, then, is a consistent pattern of capital allocation into industries where most companies are likely to look good in the near term.

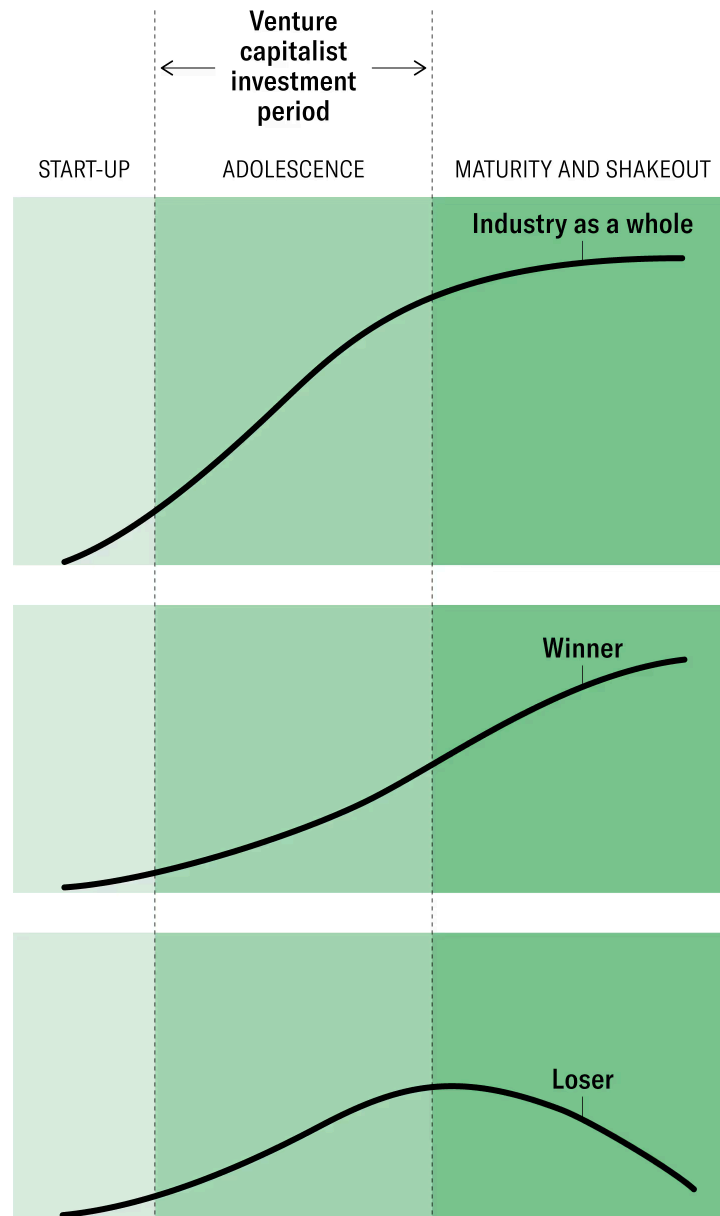
During this adolescent period of high and accelerating growth, it can be extremely hard to distinguish the eventual winners from the losers because their financial performance and growth rates look strikingly similar. (See the chart “Timing Is Everything.”) At this stage, all companies are struggling to deliver products to a product-starved market. Thus the critical challenge for the venture capitalist is to identify competent management that can execute—that is, supply the growing demand.



## Timing Is Everything

More than 80% of the money invested by venture capitalists goes into the adolescent phase of a company's life cycle. In this period of accelerated growth, the financials of both the eventual winners and losers look strikingly similar.

### Sales



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Picking the wrong industry or betting on a technology risk in an unproven market segment is something VCs avoid. Exceptions to this rule tend to involve “concept” stocks, those that hold great promise but that take an extremely long time to succeed. Genetic engineering companies illustrate this point. In that industry, the venture capitalist’s challenge is to identify entrepreneurs who can advance a key technology to a certain stage—FDA approval, for example—at which point the company can be taken public or sold to a major corporation.

By investing in areas with high growth rates, VCs primarily consign their risks to the ability of the company’s management to execute. VC investments in high-growth segments are likely to have exit opportunities because investment bankers are continually looking for new high-growth issues to bring to market. The issues will be easier to sell and likely to support high relative valuations—and therefore high commissions for the investment bankers. Given the risk of these types of deals, investment bankers’ commissions are typically 6% to 8% of the money raised through an IPO. Thus an effort of only several months on the part of a few professionals and brokers can result in millions of dollars in commissions.

As long as venture capitalists are able to exit the company and industry before it tops out, they can reap extraordinary returns at relatively low risk. Astute venture capitalists operate in a secure niche where traditional, low-cost financing is unavailable. High rewards can be paid to successful management teams, and institutional investment will be available to provide liquidity in a relatively short period of time.

**The Logic of the Deal.** There are many variants of the basic deal structure, but whatever the specifics, the logic of the deal is always the same: to give investors in the venture capital fund both



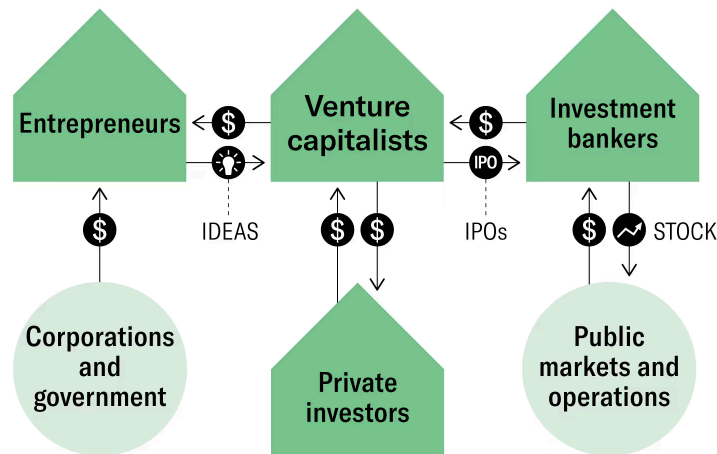
ample downside protection and a favorable position for additional investment if the company proves to be a winner. In a typical start-up deal, for example, the venture capital fund will invest \$3 million in exchange for a 40% preferred-equity ownership position, although recent valuations have been much higher. The preferred provisions offer downside protection. For instance, the venture capitalists receive a liquidation preference. A liquidation feature simulates debt by giving 100% preference over common shares held by management until the VC's \$3 million is returned. In other words, should the venture fail, they are given first claim to all the company's assets and technology. In addition, the deal often includes blocking rights or disproportional voting rights over key decisions, including the sale of the company or the timing of an IPO.

The contract is also likely to contain downside protection in the form of antidilution clauses, or *ratchets*. Such clauses protect against equity dilution if subsequent rounds of financing at lower values take place. Should the company stumble and have to raise more money at a lower valuation, the venture firm will be given enough shares to maintain its original equity position—that is, the total percentage of equity owned. That preferential treatment typically comes at the expense of the common shareholders, or management, as well as investors who are not affiliated with the VC firm and who do not continue to invest on a pro rata basis.

Alternatively, if a company is doing well, investors enjoy upside provisions, sometimes giving them the right to put additional money into the venture at a predetermined price. That means venture investors can increase their stakes in successful ventures at below-market prices.

## How the Venture Capital Industry Works

The venture capital industry has four main players: entrepreneurs who need funding; investors who want high returns; investment bankers who need companies to sell; and the venture capitalists who make money for themselves by making a market for the other three.



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VC firms also protect themselves from risk by coinvesting with other firms. Typically, there will be a “lead” investor and several “followers.” It is the exception, not the rule, for one VC to finance an individual company entirely. Rather, venture firms prefer to have two or three groups involved in most stages of financing. Such relationships provide further portfolio diversification—that is, the ability to invest in more deals per dollar of invested capital. They also decrease the workload of the VC partners by getting others involved in assessing the risks during the due diligence period and in managing the deal. And the presence of several VC firms adds credibility. In fact, some observers have suggested that the truly smart fund will always be a follower of the top-tier firms.

### Attractive Returns for the VC

In return for financing one to two years of a company's start-up, venture capitalists expect a 10 times return of capital over five years. Combined with the preferred position, this is very high-cost capital: a loan with a 58% annual compound interest rate that cannot be prepaid. But that rate is necessary to deliver average fund returns above 20%. Funds are structured to guarantee partners a comfortable income while they work to generate those returns. The venture capital partners agree to return all of the investors' capital before sharing in the upside. However, the fund typically pays for the investors' annual operating budget—2% to 3% of the pool's total capital—which they take as a management fee regardless of the fund's results. If there is a \$100 million pool and four or five partners, for example, the partners are essentially assured salaries of \$200,000 to \$400,000 plus operating expenses for seven to 10 years. (If the fund fails, of course, the group will be unable to raise funds in the future.) Compare those figures with Tommy Davis and Arthur Rock's first fund, which was \$5 million but had a total management fee of only \$75,000 a year.

The real upside lies in the appreciation of the portfolio. The investors get 70% to 80% of the gains; the venture capitalists get the remaining 20% to 30%. The amount of money any partner receives beyond salary is a function of the total growth of the portfolio's value and the amount of money managed per partner. (See the exhibit "Pay for Performance.")

# Pay for Performance

Annual IRR of fund over five years:

0%	10	20	30	40	50
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Average annual compensation (in millions):

\$20 million managed per partner

\$0.2	0.6	1.4	2.4	3.8	5.4
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Average annual compensation (in millions):

\$30 million managed per partner

\$0.3	0.9	2.1	3.6	5.5	8.1
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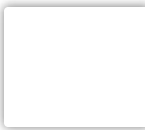


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Thus for a typical portfolio—say, \$20 million managed per partner and 30% total appreciation on the fund—the average annual compensation per partner will be about \$2.4 million per year, nearly all of which comes from fund appreciation. And that compensation is multiplied for partners who manage several funds. From an investor’s perspective, this compensation is acceptable because the venture capitalists have provided a very attractive return on investment and their incentives are entirely aligned with making the investment a success.

What part does the venture capitalist play in maximizing the growth of the portfolio’s value? In an ideal world, all of the firm’s investments would be winners. But the world isn’t ideal; even with the best management, the odds of failure for any individual company are high.

On average, good plans, people, and businesses succeed only one in 10 times. To see why, consider that there are many components critical to a company’s success. The best companies might have



an 80% probability of succeeding at each of them. But even with these odds, the probability of eventual success will be less than 20% because failing to execute on any one component can torpedo the entire company.

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Individual event	Probability
Company has sufficient capital	80%
Management is capable and focused	80
Product development goes as planned	80
Production and component sourcing goes as planned	80
Competitors behave as expected	80
Customers want product	80
Pricing is forecast correctly	80
Patents are issued and are enforceable	80
<b>Combined probability of success</b>	<b>17</b>



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If just one of the variables drops to a 50% probability, the combined chance of success falls to 10%.

These odds play out in venture capital portfolios: More than half the companies will at best return only the original investment and at worst be total losses. Given the portfolio approach and the deal structure VCs use, however, only 10% to 20% of the companies funded need to be real winners to achieve the targeted return rate of 25% to 30%. In fact, VC reputations are often built on one or two good investments.

A typical breakout of portfolio performance per \$1,000 invested is shown below:



	BAD	ALIVE	OKAY	GOOD	GREAT	TOTAL
Invested	\$200	400	200	100	100	1,000
Payout year 5	0	1x	5x	10x	20x	
Gross return	0	400	1,000	1,000	2,000	4,400
Net return	(200)	0	800	900	1,900	3,400

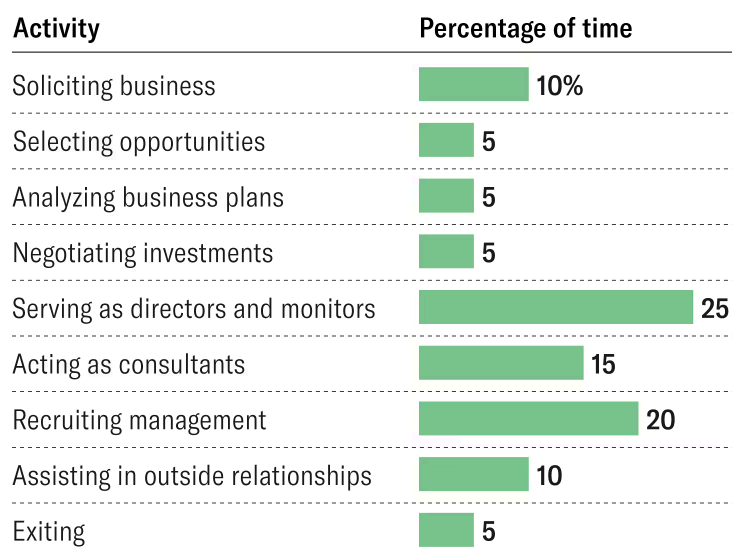
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Those probabilities also have a great impact on how the venture capitalists spend their time. Little time is required (and sometimes best not spent) on the real winners—or the worst performers, called *numnuts* (“no money, no time”). Instead, the VC allocates a significant amount of time to those middle portfolio companies, determining whether and how the investment can be turned around and whether continued participation is advisable. The equity ownership and the deal structure described earlier give the VCs the flexibility to make management changes, particularly for those companies whose performance has been mediocre.

Most VCs distribute their time among many activities (see the exhibit “How Venture Capitalists Spend Their Time”). They must identify and attract new deals, monitor existing deals, allocate additional capital to the most successful deals, and assist with exit options. Astute VCs are able to allocate their time wisely among the various functions and deals.

## How Venture Capitalists Spend Their Time



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Assuming that each partner has a typical portfolio of 10 companies and a 2,000-hour work year, the amount of time spent on each company with each activity is relatively small. If the total time spent with portfolio companies serving as directors and acting as consultants is 40%, then partners spend 800 hours per year with portfolio companies. That allows only 80 hours per year per company—less than two hours per week.

The popular image of venture capitalists as sage advisers is at odds with the reality of their schedules. The financial incentive for partners in the VC firm is to manage as much money as possible. The more money they manage, the less time they have to nurture and advise entrepreneurs. In fact, “virtual CEOs” are now being added to the equity pool to counsel company management, which is the role that VCs used to play.

Today's venture capital fund is structurally similar to its late 1970s and early 1980s predecessors: The partnership includes both limited and general partners, and the life of the fund is seven to 10 years. (The fund makes investments over the course of the first two or three years, and any investment is active for up to five years. The fund harvests the returns over the last two to three years.) However, both the size of the typical fund and the amount of money managed per partner have changed dramatically. In 1980, the average fund was about \$20 million, and its two or three general partners each managed three to five investments. That left a lot of time for the venture capital partners to work directly with the companies, bringing their experience and industry expertise to bear. Today the average fund is 10 times larger, and each partner manages two to five times as many investments. Not surprisingly, then, the partners are usually far less knowledgeable about the industry and the technology than the entrepreneurs.

## **The Upside for Entrepreneurs**

Even though the structure of venture capital deals seems to put entrepreneurs at a steep disadvantage, they continue to submit far more plans than actually get funded, typically by a ratio of more than 10 to one. Why do seemingly bright and capable people seek such high-cost capital?

Venture-funded companies attract talented people by appealing to a "lottery" mentality. Despite the high risk of failure in new ventures, engineers and businesspeople leave their jobs because they are unable or unwilling to perceive how risky a start-up can be. Their situation may be compared to that of hopeful high school basketball players, devoting hours to their sport despite the overwhelming odds against turning professional and earning million-dollar incomes. But perhaps the entrepreneur's behavior is not so irrational.



Consider the options. Entrepreneurs—and their friends and families—usually lack the funds to finance the opportunity. Many entrepreneurs also recognize the risks in starting their own businesses, so they shy away from using their own money. Some also recognize that they do not possess all the talent and skills required to grow and run a successful business.

Most of the entrepreneurs and management teams that start new companies come from corporations or, more recently, universities. This is logical because nearly all basic research money, and therefore invention, comes from corporate or government funding. But those institutions are better at helping people find new ideas than at turning them into new businesses (see the sidebar “Who Else Funds Innovation?”). Entrepreneurs recognize that their upside in companies or universities is limited by the institution’s pay structure. The VC has no such caps.

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### **Who Else Funds Innovation?**

The venture model provides an engine for commercializing technologies that formerly lay dormant in  
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Downsizing and reengineering have shattered the historical security of corporate employment. The corporation has shown employees its version of loyalty. Good employees today recognize the inherent insecurity of their positions and, in return, have little loyalty themselves.

Additionally, the United States is unique in its willingness to embrace risk-taking and entrepreneurship. Unlike many Far Eastern and European cultures, the culture of the United States attaches little, if any, stigma to trying and failing in a new enterprise. Leaving and returning to a corporation is often rewarded.

For all these reasons, venture capital is an attractive deal for entrepreneurs. Those who lack new ideas, funds, skills, or tolerance for risk to start something alone may be quite willing to be hired into a well-funded and supported venture. Corporate and academic training provides many of the technological and business skills necessary for the task while venture capital contributes both the financing and an economic reward structure well beyond what corporations or universities afford. Even if a founder is ultimately demoted as the company grows, he or she can still get rich because the value of the stock will far outweigh the value of any forgone salary.

By understanding how venture capital actually works, astute entrepreneurs can mitigate their risks and increase their potential rewards. Many entrepreneurs make the mistake of thinking that venture capitalists are looking for good ideas when, in fact, they are looking for good managers in particular industry segments. The value of any individual to a VC is thus a function of the following conditions:

- the number of people within the high-growth industry that are qualified for the position;
- the position itself (CEO, CFO, VP of R&D, technician);
- the match of the person's skills, reputation, and incentives to the VC firm;

- the willingness to take risks; and
- the ability to sell oneself.

Entrepreneurs who satisfy these conditions come to the table with a strong negotiating position. The ideal candidate will also have a business track record, preferably in a prior successful IPO, that makes the VC comfortable. His reputation will be such that the investment in him will be seen as a prudent risk. VCs want to invest in proven, successful people.

Just like VCs, entrepreneurs need to make their own assessments of the industry fundamentals, the skills and funding needed, and the probability of success over a reasonably short time frame. Many excellent entrepreneurs are frustrated by what they see as an unfair deal process and equity position. They don't understand the basic economics of the venture business and the lack of financial alternatives available to them. The VCs are usually in the position of power by being the only source of capital and by having the ability to influence the network. But the lack of good managers who can deal with uncertainty, high growth, and high risk can provide leverage to the truly competent entrepreneur. Entrepreneurs who are sought after by competing VCs would be wise to ask the following questions:

- Who will serve on our board and what is that person's position in the VC firm?
- How many other boards does the VC serve on?
- Has the VC ever written and funded his or her own business plan successfully?
- What, if any, is the VC's direct operating or technical experience in this industry segment?



- What is the firm's reputation with entrepreneurs who have been fired or involved in unsuccessful ventures?

The VC partner with solid experience and proven skill is a true "trail-wise sidekick." Most VCs, however, have never worked in the funded industry or have never been in a down cycle. And, unfortunately, many entrepreneurs are self-absorbed and believe that their own ideas or skills are the key to success. In fact, the VC's financial and business skills play an important role in the company's eventual success. Moreover, every company goes through a life cycle; each stage requires a different set of management skills. The person who starts the business is seldom the person who can grow it, and that person is seldom the one who can lead a much larger company. Thus it is unlikely that the founder will be the same person who takes the company public.

Ultimately, the entrepreneur needs to show the venture capitalist that his team and idea fit into the VC's current focus and that his equity participation and management skills will make the VC's job easier and the returns higher. When the entrepreneur understands the needs of the funding source and sets expectations properly, both the VC and entrepreneur can profit handsomely.

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Although venture capital has grown dramatically over the past 10 years, it still constitutes only a tiny part of the U.S. economy. Thus in principle, it could grow exponentially. More likely, however, the cyclical nature of the public markets, with their historic booms and busts, will check the industry's growth. Companies are now going public with valuations in the hundreds of millions of dollars without ever making a penny. And if history is any guide, most of these companies never will.

The system described here works well for the players it serves: entrepreneurs, institutional investors, investment bankers, and the venture capitalists themselves. It also serves the supporting cast of lawyers, advisers, and accountants. Whether it meets the needs of the investing public is still an open question.

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## BZ

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