VENTURE CAPITAL JOURNAL

A Call for Innovation in Venture Investing

The domestic high-technology industry is in transition, in large part because of increasing global competition. As a result, returns from technology-related venture capital investments are declining. If the venture industry is to enjoy high returns again, venture capitalists must have the vision to break from the old investment paradigm and embrace a new approach to venture investing.

The traditional venture investment paradigm, which relied primarily on equity investment in the form of preferred stock positions taken at various stages of a company's growth, will not continue to yield the above-average returns expected by limited partners. The failure of venture capital to generate high returns will lead to a reduction in the number of venture funds and, eventually, to a weakening of the U.S. competitive position.

The decline in venture capital returns can be traced to:

- Transition in the domestic high-technology industry, resulting in slower growth in sales and earnings;
- Increased international competition;
- Decreased research coverage of technology stocks as the securities industry consolidates;
- Declining interest in high-technology investments among institutional investors;
- Vacillating U.S. policy toward high technology; and
- Rapid expansion of venture funds raised during the 1980s and invested at high valuations.

High-Tech Segments Slowing

Key segments of the high-tech industry are slowing, as illustrated in Table 1. By implication, that means slower sales and earnings growth for companies competing in those markets.

Table 1
Compound Annual Market Growth Rates (Dollar Sales)

Segment	CAGR 1981-1985	CAGR 1989-1993
Business Computers	15.5%	6.9%
Technical Computers	16.7%	17.4%
Personal Computers	73.8%	13.3%
Personal Computer Software	88.1%	19.5%
Integrated Circuits	12.2%	15.4%
Telecom Equipment	12.3%	4.5%
Datacom Equipment	35.7%	14.4%
CAD/CAM Workstations	44.5%	9.0%

Source: Dataquest Inc.

In addition, customers are becoming more sophisticated and are demanding industry standards (i.e., SCSI, Unix, Ethernet) be established. As a result,

This article was written by Charles A. DiLisio, a senior manager in the High Technology Merger & Acquisition Practice of KPMG Peat Marwick in San Jose, and Samuel Paisley, partner in charge of the practice.

products are becoming more commodity-oriented and interchangeable. Today, high-tech companies find it difficult to differentiate their products solely on the basis of their technologies. They now must differentiate on service, quality and cost. These companies are discovering that they are competing for the same customers and that control of the distribution channel can determine whether their product succeeds or fails. Today's customers are looking to a single company to provide an integrated hardware and software solution.

As hardware products become standardized and interchangeable, technology firms differentiate their offerings by "software," defined in its broadest sense. This is the intellectual property-for example, a trade secret, software code, or proprietary expertise-that tailors a commodity hardware product to a buyer's unique needs. In its purest form, the product may be a formula that resides in the combined experience of a few key technologists. Intellectual property, therefore, is the value-added element of most high-tech companies, because it is the element most difficult for competitors to duplicate. Under the current venture capital investment paradigm, however, intellectual property is difficult to invest in, because it is intangible and difficult to transfer to others.

Greeting the Global Economy

U.S. companies have realized that they no longer have the large domestic market to themselves. Significant foreign competition is a given. Growth will result only by rapidly penetrating international as well as domestic markets.

While the U.S. high-tech industry matures, competition on an international scale increases. The reforms under way in the Soviet Union and the conversion one-by-one of Eastern European communist satellite countries to liberal capitalism will eliminate Cold War trade barriers. The European Economic Community, in racing to transform itself into the "United States of Europe," is dismantling trade barriers among member nations and establishing product standards. The EEC's impending economic unification and the reunification of East and West Germany will mean the birth of two new economic powerhouses. The U.S. technology industry has been seriously challenged by the growing economic might of the Asia Pacific countries, particularly Japan.

Wealth among the three major world geo-centers (North America, Europe and the Pacific Rim) is equalizing. As outlined in Table 2, in 1965 the U.S. was dominant, as measured by gross domestic product (GDP). By 1988, however, Europe and the Pacific Rim countries rivaled the United States. Japan's share of global GDP jumped to 17% in 1988 from 5% in 1965.

Table 2
Gross Domestic Product of Key World Geo-Centers
(Percentage of Total)

Geo-Center	1965	1988
United States	40%	28%
European Economic Community	26%	27%
Asia-Pacific	12%	24%
Rest of World	22%	21%
Total World GDP ($ billions)	**$1,750.0**	**$17,018.4**

Sources: World Bank, 1990 World Development Report, Statistical Yearbook, Republic of China, 1980, 1989

Securities markets around the world are becoming interlinked. Money now moves internationally to those areas where it generates the highest returns. Among the leading financial institutions, meanwhile, dominance has shifted from the U.S. to Japan as the latter's wealth has grown. Of the world's top 10 financial institutions (based on total market value), nine are Japanese, and the exception is West Germany's Allianz AG. Of the top 25 financial institutions, 20 are Japanese and only one-American Express Corp.-is from the U.S.

Financial Markets in Transition

As a result of slower sales and earnings growth, public technology companies no longer enjoy a large premium in price-earnings multiples over companies in lower technology industries. In the last five years, the net demand for public equities has come from corporations repurchasing stock, leveraged-buyout firms and merchant banks. All three groups were engaged in a form of financial arbitrage in which undervalued public companies were taken private, and equity was converted to debt. The flurry of mergers, acquisitions and LBOs of "rust belt" companies propelled the stock market to new highs but did little to help emerging technology companies.

During the 1980s, individuals were net sellers, including their investments in equity mutual funds. And, since 1986, even institutions have reduced their equity holdings, particularly in technology stocks. Technology stock holdings peaked at about 46% of the average institutional equity portfolio in 1987, and dropped to 35% by 1989.

Concurrently, initial public offerings (IPOs) became harder to market, even at lower valuations. Money raised through IPOs of venture-backed companies declined from $2.1 billion in 1986 to $996 million in 1989. A mild resurgence in IPOs is currently under way, but only among companies considered the "cream of the crop" (and even those companies are going out at low valuations). IPOs, of course, have been the key method of financing company growth and the preferred method among venture capital investors for achieving liquidity.

The recent downsizing on Wall Street has been another, albeit indirect, blow to high-tech companies. With mergers and acquisitions slowing and institutional interest in high-tech stocks cooling, investment banks have reduced both the number of securities analysts following these stocks and their market-making in these stocks. Now, only the larger, well-known and widely held technology stocks are consistently covered. As a result, shares of smaller, lesser-known companies are becoming more thinly traded, lowering their valuations and increasing the issuers' cost of capital.

The latest development in the financial markets with major implications for venture investors is the Securities and Exchange Commission's introduction of Rule 144a. Intended to make it easier for both domestic and foreign companies to raise funds in the U.S., Rule 144a relaxes the disclosure requirements for privately placed securities. It also eases the rules for accredited institutions to sell and trade those securities. The ruling will make the private placements market more liquid and allow institutions to invest in emerging companies more efficiently.

Rule 144a will help emerging growth firms by easing their disclosure requirements and reducing their cost of capital. It also gives venture capital firms another avenue for exiting from investments. In addition, 144a could be used as a way to "go global" by investing in emerging high-tech firms outside the U.S. However, as technology companies begin to raise financing directly in a

more liquid and more efficient private-placement market, Rule 144a will also likely place a ceiling on, and potentially depress, returns from later-stage venture financings and bridge rounds. In addition, limited partners that previously would have invested in a venture fund to gain access to strategic technologies may now invest directly in technology companies through this mechanism.

A U.S. Industrial Policy by Default

Whether it is acknowledged or not, the U.S. has an industrial policy by default if not by design. This policy has two main tenants: to maintain a low dollar to spur exports of commodity products, and to maintain a high capital gains tax, which curtails investment in high-technology companies.

The low-dollar policy was established in September 1985 under the "Plaza Accord" signed at New York's Plaza Hotel by representatives of the U.S., Japan, Britain, France and West Germany. By December 1987, the dollar had dropped 50% against both the Deutschemark and yen. Though it has recovered slightly, the dollar today is still nearly 40% below the other currencies.

Initially, the low dollar helped U.S. exporters of textiles, steel, paper and other commodities who typically sell products on price, not technical innovation. It also spurred mergers and acquisitions in those industries, which helped fuel the run-up in takeovers and the stock market. However, the low-dollar policy hurt emerging high-tech companies by making their technologies relatively cheap for European and Japanese investors or acquirers. In addition, the lower dollar depressed their stock values against international competitors and increased their cost of raising capital to finance research and development.

The elimination of the capital gains tax differential, contained in the Tax Reform Act of 1986, has clearly put high-technology companies at a disadvantage by making them less attractive to investors. This has contributed to the lowered valuations of high-technology stocks and increased their cost of capital.

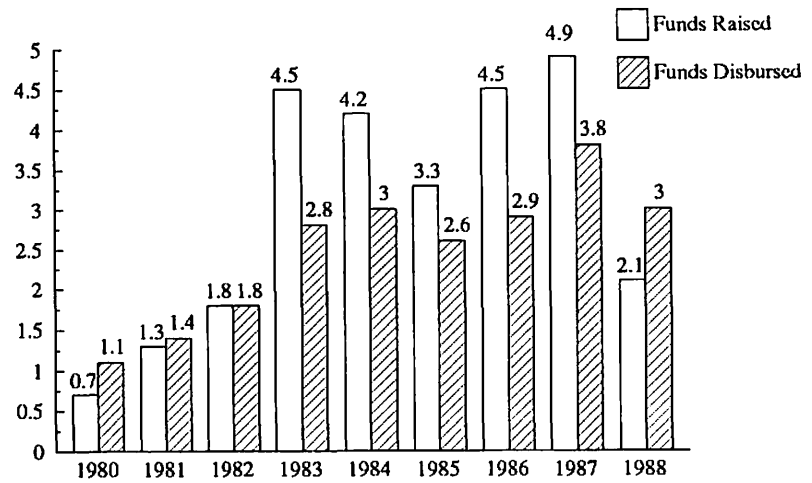
Defense cut backs and the likely reduction in defense R&D spending will have a further chilling effect on the high-tech industry. So will the current administration's lack of enthusiasm for a sustained R&D tax credit, for high-technology consortia, or for DARPA funding of technology with commercial as well as military uses. As a result, the ability of the U.S. to foster a vibrant high-technology industry will continue to be undermined, putting the U.S. at a competitive disadvantage to Japan and Europe.

Venture Capital Industry in Turmoil

During the mid-1980s, venture capital funds grew dramatically. This was largely due to the 1982 reduction in the capital gains tax and to 1983's strong public market for high-technology stocks, which resulted in high relative returns on funds raised prior to 1983. The chart on the next page represents the amount of venture money raised and invested annually during the 1980s.

The high returns achieved as a result of the hot 1983 IPO market set the stage for venture capital firms to raise significant amounts of new money. Today, it's no longer unusual for a venture firm to manage $200 million or $300 million. Concurrently, there was a rapid increase in the number of new venture firms and venture professionals. There are more than 2,500 venture capital professionals in the U.S. today, up from less than 600 in the late 1970s.

Venture Capital Funds Raised vs. Disbursements
($ Billions)



Source: Venture Economics, Inc.

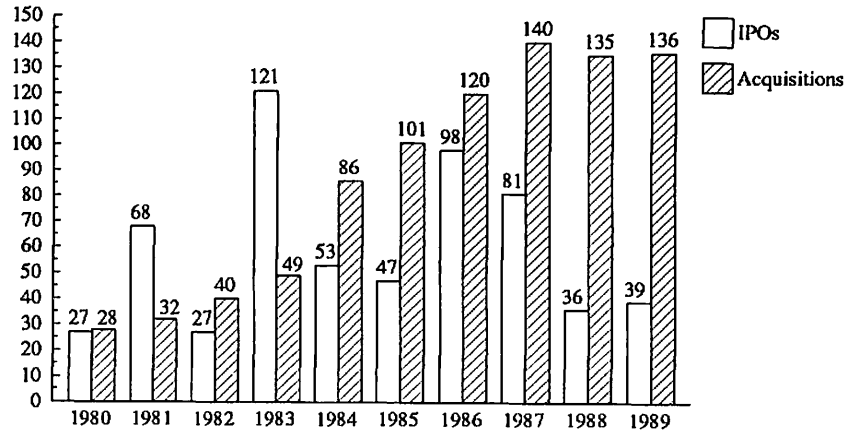
The outlook, however, is nowhere near as rosy. Annual returns, which averaged more than 25% on venture capital funds raised prior to 1983, have been less than half that for many post-1983 funds. While the strong IPO market brought high returns to pre-1983 funds, it also led to high valuations on venture investments made after 1983. The inflation of valuations was compounded by the surge in new funds and the influx of professionals into the industry, which led to intense competition for deals. In retrospect, it's apparent that returns had nowhere to go but down.

Consolidation in the venture capital industry now is inevitable, as a culmination of those events and as a consequence of the previously mentioned external factors: maturing technology, globalization, waning institutional interest in technology, and a government policy that works against high-technology investment.

The depressed IPO market has forced venture capital investors to seek alternative ways of exiting investments at high valuations. As the chart on the next page indicates, exits through acquisitions by other companies has come to outpace IPOs among venture investors. However, acquisition exits generally haven't provided the same high returns. As a result, venture investment holding periods are lengthening, as funds wait for IPO valuations to strengthen. Consequently, however, this wait will only further depress returns on post-1983 funds.

In an attempt to reinvigorate their returns, some venture funds have altered their investment strategies in recent years. One approach has been to diversify out of traditional venture investing by moving into leveraged buyouts and management buyouts. Other firms have established funds focused on specific high-technology segments, such as telecommunications, biotechnology or software, or on a given investment stage, such as seed or bridge financing.

Number of Venture-Backed Acquisitions & IPOs



Source: Venture Economics, Inc.

Venture Industry Must Take the Initiative

Venture capital is a key strategic advantage to long-term U.S. competitiveness. However, given the lack of government incentives, the venture capital industry must look to itself to make the changes necessary for the continued growth of the industry and the companies it finances. The challenges facing the industry require visionary and innovative investment policies and financial structures.

The historical paradigm for venture investing consisted of the following elements:

Product: An innovative product or service concept, often based on existing or to-be-developed technology.

Market: A large, unserved market, typically projected to be more than $500 million domestically.

Distribution: For products priced at $10,000 or higher, creation of a sales force and a key-account strategy to penetrate Fortune 1000 companies before entering international markets. Regional sales representatives or value-added resellers are typically used to sell products priced at less than $10,000.

Management: At a minimum, management consisted of a strong technical innovator paired with a sales/marketing expert. Most likely both had previously attempted or created a start-up, or came from another large, successful high-tech firm where the technical innovator's idea wasn't appreciated. Management team members had limited foreign business experience.

Funding Vehicle: Initial funding through preferred stock turned a concept into a product. Follow-on financing, also through preferred stock, funded initial sales and the creation of distribution channels.

Exit or Liquidity: Exit through a public offering, theoretically in a seven- to 10-year period, though preferably much sooner.

A New Paradigm for Investing

Given the facts as presented in the previous sections, we would like to propose the following as possible trends and issues likely to emerge in future venture capital investing:

Product: In lieu of a breakthrough technology, many high-technology "hardware" products today are becoming commodities, and compete now on service or cost. In addition, there's growing recognition that customers don't want components, but solutions. Today, software—defined in its broadest sense—accounts for the majority of the value added, even in what traditionally would be considered a hardware product.

This poses a unique problem for venture capital investors, because the majority of the value created is embodied not in a physical product, but in intellectual property in the form of designs or accumulated experience, which are intangible. How do you invest in accumulated knowledge or a mathematical formula?

Market: Markets today are niche-oriented with ever-shortening product life cycles. In addition, a product must be designed to serve not just the domestic market, but also the world market. To be successful, moreover, companies must be adroit enough to seize opportunities as they arise—and to exit declining businesses in a timely manner. It will be increasingly necessary not only to reduce cycle time from design to delivery, but also to understand market nuances internationally.

Distribution: Given the globalization of markets, products and competition, distribution will be much more complex and expensive to develop than the product itself. Venture capitalists, therefore, might chose to team an emerging technology company with a mature company that has an established distribution channel. That can be done through outright acquisition of the mature company, or by seeking a corporate partner to invest in later-stage financing rounds.

Utilizing a corporate partner in later-stage financing rounds also can help bolster venture capital fund returns. This is particularly true if venture investors concentrate on early-stage investments with a high return/low dollar investment profile. Later-stage rounds, typically used to develop sales and distribution channels, require large amounts of money. If underwritten with venture funds, the return/investment ratio is very low. A corporate partner, however, can bring an established distribution channel to the deal, thus reducing the cost of distribution development. Moreover, corporate partners often are willing to pay high valuations.

Management: In the changing world of venture-backed start-ups, management teams may be less dependent on technology expertise. While technical innovation remains crucial to success, the ability of the innovator to design a product to be efficiently manufactured and to meet international product standards will become increasingly important. International market intelligence skills will be needed to discern the needs of overseas markets quickly.

Management teams must make continual incremental improvements to their product, process technology and distribution system. A determinate of success will be management's ability to communicate its accumulated experience to employees. Low turnover, enhanced employee training and the sharing of corporate values will create a formidable competitive advantage.

Funding Vehicle: Preferred stock will continue to be the dominant financing vehicle for initial financing and start-ups. However, as investments

focus less on hardware and more on intangible assets, new forms of equity sharing may emerge. For example, a prominent and innovative West Coast venture firm recently invested in a mathematical formula developed by a small group of university professors. The venture firm invested a small amount of equity and will get a royalty for each application of the formula in a software product.

Rule 144a may give venture capital firms new opportunities to invest in foreign technology companies that take advantage of the newly eased private placements disclosure rules. The venture investors would be able to exit the investments at a later date by selling the securities to other qualified investors.

Domestic technology companies may use Rule 144a to raise later-stage financing. Because they will be liquid, these financings may be attractive investments to larger corporations that have strategic interests in the issuer's technology. That may reduce the later-stage investment opportunities available to venture capitalists, while the more-efficient market will reduce the returns on such investments.

The strategic value of distribution channels, however, may open a new area of "special situation" investing for venture capitalists. Mature companies or "orphan" divisions of established companies may be attractive acquisition candidates if they have strong distribution capabilities. Once acquired, these operations can be paired with venture-backed companies that need distribution channels for their innovative products.

Exit or Liquidity: Because they bring the highest cash-on-cash returns, public offerings will continue to be the preferred exit vehicles. Given the globalization of markets, however, taking a company public on a foreign exchange may become an option. Rule 144a may become an important primary method of exiting from later-stage investments. In special situation investments that pair a mature company with a venture-backed business, the exit may be through a public offering or a secondary offering. The public offering may be easier to accomplish, because the combined company may be sizeable and have a history of profits.

Conclusion: The Challenge Ahead

The venture capital industry must take the lead in charting its future. The venture community has been successful because of its ability to constantly transform itself and to discard outmoded investment techniques in favor of better alternatives. The result has been the creation of many successful technology companies, increased U.S. productivity and high investment returns. Faced with adversity, the venture industry now must embrace a new vision of venture capital investing or become another casualty of global competition.