IP in early-stage commercial and investment success

Detailed analysis shows that a high percentage of the most successful early-stage VC-backed businesses in the United States have a strong IP sense

By **Joseph Hadzima**, **Bruce Bockmann** and **Alexander Butler**

We are now one year and one US presidential election cycle after the financial contraction became evident to the investing public. Its impact upon early-stage companies, technology investments and the venture capital community has been dramatic.

As institutions and high-net-worth individual investors reduce their risk profiles and their allocation of funds to higher-risk/high-beta investments, the amount of funding available to venture capital firms is diminishing and the amount of venture capital available for early-stage investment is contracting rapidly.

The National Venture Capital Association reports that venture capital firms invested about US$3.7 billion in the second quarter of 2009 – roughly half of recent peaks of US$8 billion per quarter and closer to investment levels of the mid-1990s. As the amount of available venture capital diminishes, venture capital firms are less able to diversify their holdings to mitigate risk and, therefore, are required to upgrade the level and quality of fundamental analysis to accomplish the same levels of risk in a smaller portfolio.

The result is early-stage investors actively seeking new insights into what drives success and moving from traditional assessment processes to evidence-based decision-making. This includes, for early-stage, technology-intensive investments, increased focus on the quality of an early-stage company's intellectual property.

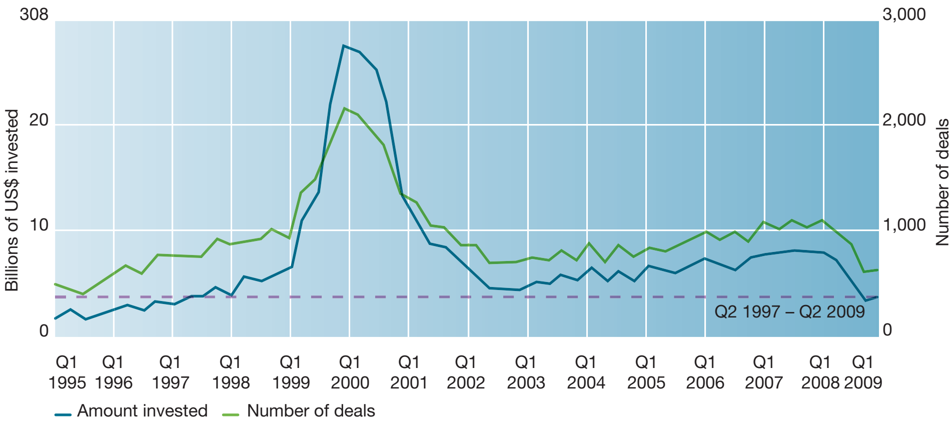
Over the past three years, seeking insights into the key drivers of success in early-stage companies, we worked with members of the investment community, corporate executives and MIT Sloan School of Management faculty to assess more than 9,000 venture capital-backed companies' intellectual property positions.

These assessments demonstrate a marked correlation between success (with winners measured by a company having achieved an IPO or having been acquired as a proxy for ROI) and a company having developed (or possessed) intellectual property. An even greater correlation exists between success and companies that have good or strong intellectual property positions. Given that analysis demonstrates that 86% of winners have strong (versus typical) intellectual property assessments, the importance of this investment dynamic should not be overlooked by providers or recipients of capital.

Can we forecast success based upon intellectual property?

From experience, many investors and their counsel collectively know that intellectual property is important. However, historically, most investors do not have consistent, clear and efficient methods for assessing intellectual property as part of investment decision processes. This business need is further clouded by the legal nature of patents. Increasingly, business executives and investors are calling for a new lens to consolidate the different perspectives of business, law and technology. If successful, benefits include reducing due diligence burdens, improved strategic conversations and increased transaction confidence.

Chart 1. **US VC investments 1995 to 2009**



Sources: PricewaterhouseCoopers/National Venture Capital Association MoneyTree.
Report data: Thomson Reuters. Copyright 2009. IPVision Inc

The key question is: can an evidence-based approach to intellectual property analysis provide insights into the business and competitive context of a company's intellectual property position as well as its importance and legal quality? Understanding these insights will improve one's ability to assess the business and investment value of a company's IP and its prospects for business and investment success.

Perspectives on value

For an early-stage, technology-intensive company, value and success boil down to a few core factors. First, is the technology good (ie, a cure for cancer or a better mouse-trap)? Second, is the legal protection for that technology sound? Third, are the commercialisation strategy and plan of execution good? And fourth, is the company's management talented and able? This research and assessments do not provide the ability to evaluate management directly; however, if the first three core factors are in place, it is probably safe to assume that management is talented and able.

Integrating business and intellectual property strategy in the early years of a company or industry has profound implications. Consider, for example, the remarkable growth of the biotech industry and Stanford University's related licensing income strategy following commercialisation of the Cohen-Boyer patent – the basic gene splicing patent. There were many strategies for commercialising the remarkable Cohen-Boyer patent. Stanford chose to make the licensing of its intellectual property relatively inexpensive. The result was the development by many parties of an entire industry and the generation of well over US$250 million of royalties for Stanford.

Guiding principles

Our first guiding principle was to create an evidence-based approach to screening and prioritising VC investment decisions. The second guiding principle was to provide timely, actionable insights and perspectives into intellectual property issues.

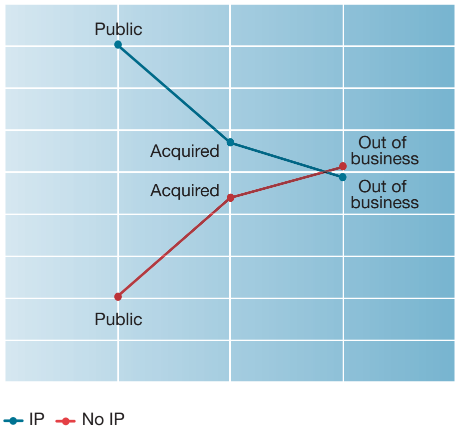
The analysis focused on developing statistically relevant metrics to sift investment opportunities, due diligence and decisions (and historical fund performance) from an intellectual property perspective.

Importantly, this research was not an attempt to identify a specific dollar value or to provide a legal opinion on any set of intellectual property rights. Rather, the objective was to develop a basis and systematic method for investors to triage opportunities and identify where traditional, more expensive deeper research and due diligence approaches would be warranted.

Approaching intellectual property from a business perspective, the assessments support answers to three important questions:

- Does the company have intellectual property and, if so, how strong is it? For companies and sectors where intellectual property is a key component of company value, one needs to measure the IP building blocks for the company.
- What is the intellectual property landscape position? Having numerous strong IP building blocks is one thing, but how those IP building blocks are

Chart 2. **IP holdings by exit outcome**



relatively positioned in the broader intellectual property landscape is another factor.

- Are the intellectual property rights being managed well? In other words, does the company appear to have a consistent, well-executed strategy for the intellectual property?

A central challenge was to develop simple and understandable guidance and initial answers to those questions even though the analytics behind the answers might be highly complex. The design resulted in a rating system using metrics derived from first principles and employing publicly available data and complementary analytics. The ratings are based on more than a dozen vectors and related calibration data that represent views of the three important questions: IP portfolio strength, IP landscape position and IP investment (family strategy).

The IP portfolio strength rating is composed of vectors that define and measure these factors:

- Absolute and relative amount of intellectual property – the number of issued US patents and published US patent applications owned of record by the target company, normalised by technology area and time factors based on objective comparative data.
- Degree of portfolio building. Through in-depth portfolio evaluations over the past decade and extensive academic research, it is clear that a portfolio in which patents cite other patents is indicative of strength as new patents build on existing intellectual property. Experience and extensive related calibration data, support measurements for absolute and relative portfolio building measurement.
- Intellectual property strength/quality. A company can have lots of patents and evidence of a building portfolio, yet not have strong, high-quality patents. To address this issue, patents can be assessed for their strength or seminal nature in a field and claims analyses.

The IP landscape rating is composed of vectors that define and measure the crowdedness of the intellectual property space around a portfolio. This assessment includes analysing the direct and cousin citation landscape and uses extensive calibration data that is adjusted to take into account the technology area and age of the portfolio.

The IP investment (family strategy) rating is composed of vectors that provide an initial measure of the sophistication of the patent prosecution strategy being pursued by the company. For example, the size of a patent family provides valuable information about the economic resources and strategic focus invested in the technology by its owner. A patent family includes applications in process (continuations, divisional applications, etc), as well as issued patents that are related in their patent prosecution histories. An issued patent that is part of a large patent family is likely to be more important than one that is not part of a patent family or is part of a smaller patent family.

86.3% of companies with highly rated intellectual property positions are venture capital winners

Acquired

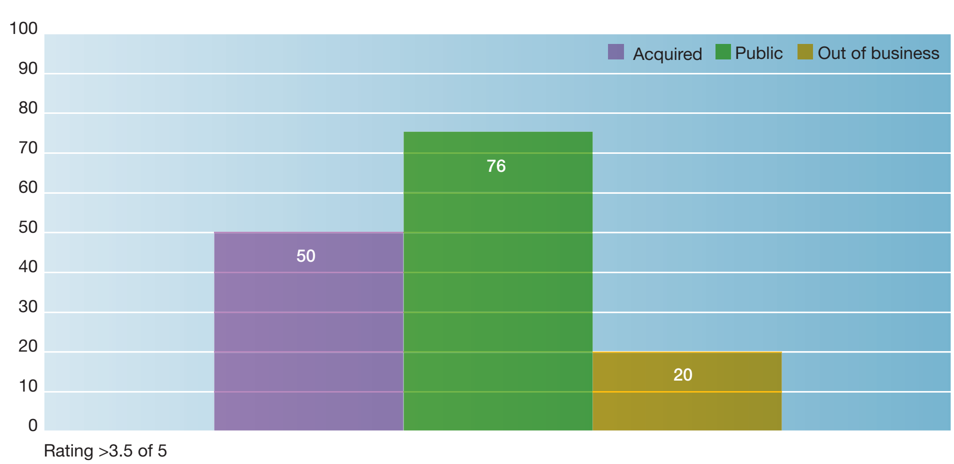
Public

Note: Highly rated companies are over six time more likely to be winners than losers

Out of business

Note: Strong IP positions provide risk mitigation and residual value for investors in the event of business termination

Chart 3. **Top quartile rating recipients**



Sample of 639 companies holding intellectual property from population of 9,000+
Criteria = upper five quartile venture capital firms as investor

> Analysis shows that across all sectors, a significantly higher percentage of venture capital-backed winners (companies that have been acquired or have gone public) have patent portfolios as opposed to losers (companies that are out of business)

The ratings are based on publicly available US patent data and were run on over 9,000 portfolio companies of venture capital firms as reported by Dow Jones VentureSource and Thomson VentureXpert. The results reported in this article are based on the portfolios of five top quartile venture capital fund groups that collectively contain 1,025 portfolio companies, of which 639 have public record ownership of intellectual property.

Following are the research's major findings.

Intellectual property is an important component of value

Success in the venture capital industry is an exit: an acquisition of, or an initial public offering (IPO) by, a portfolio company. Analysis shows that across all sectors, a significantly higher percentage of venture capital-backed winners (companies that have been acquired or have gone public) have patent portfolios as opposed to losers (companies that are out of business).

Winners are many times more likely to hold intellectual property than losers. Although the presence of intellectual property portfolios is not perfectly correlated to success or failure, this indication alone should support executive and investor focus on the role of intellectual property in their decisions and actions.

While having intellectual property increases the probability of success, those who manage intellectual property well have even higher probability of success. In certain sectors, such as healthcare, data demonstrates the value of higher-quality portfolios. In other sectors, such as telecommunications or information technology, the effect is less prominent – although still clearly and demonstrably present.

Winners have a higher rating than losers

The quality and position ratings correlate with success. Winners have an average rating that is 21% higher than losers.

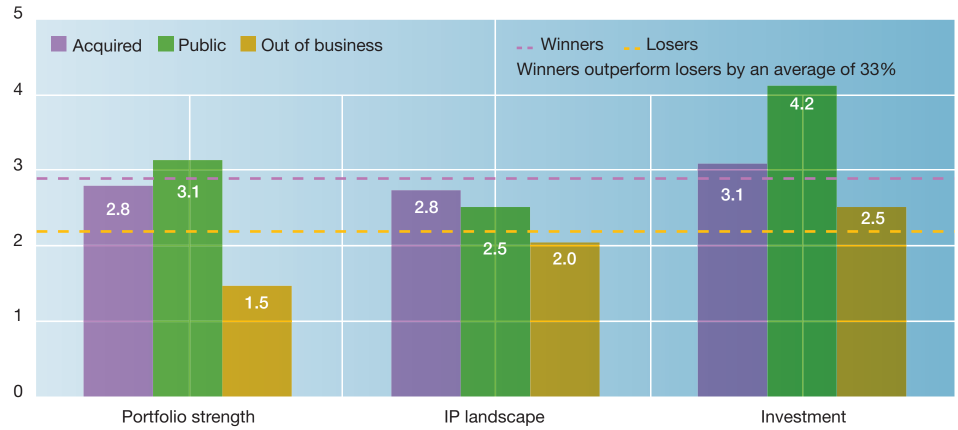
When tested across multiple venture capital firms and all of their portfolio companies' experiences, a clear distinction is seen between winners' scores and losers' scores and the assessed strength of their intellectual property position. Winners, on average, have a score of 2.5, while losers fall significantly lower with an average score of 2.1. A 20% differential is significant and over time can provide fundamental advantages to those persons and firms able to manage, screen and build to take advantage of this indicator.

Not only do winners have higher ratings than losers, but among companies with a rating of 3.5 or more (on a 1 to 5 scale), 86% are winners. Put another way, companies with high-quality IP ratings are over six times more likely to be winners than losers. Far fewer companies that have high ratings are no longer in business.

Given the many factors determining success beyond intellectual property rights alone, this differential provides a significant indicator and signals winning/losing likelihood in a consistent manner.

As consolation, for those 15% of companies that did not commercially succeed, a strong assessment or rating

Chart 4. **Ratings for venture capital-backed healthcare sector companies**



Sample of healthcare sector companies holding intellectual property from population of 9,000+
Criteria = upper five quartile venture capital firms as investor

indicates that investors may find additional value (or the sole remaining value) from their investments in the form of those companies' intellectual property positions.

Winners score higher across all three rating factors

The assessments score winners higher across all of the three key factors: IP portfolio strength; IP landscape position; and IP investment (family strategy).

For example, the chart above shows the average rating factors by outcome type for companies in the healthcare sector. A consistent presence is found in winning outcomes with companies attaining higher scores across each of the three perspectives. In the chart, the gap between healthcare winners' overall average rating (the upper horizontal dashed line) and healthcare losers' overall average shows how winners outperform losers by 33%.

Similar assessment gaps between winners and losers exist in other sectors, including those where time and pace of evolution often mean that managements do not implement significant intellectual property strategies. For example, in the broadly defined information technology sector (including software), the gap remains at over 10% – with more than two-thirds of companies achieving a successful outcome holding intellectual property.

Data supports the assertion that while the mere accumulation of intellectual property has value, a focus on high-quality and well-positioned IP investments is related to elevated performance.

Focus on IP as a component of business strategy

Recognising and incorporating IP strategy within business strategy and communications can often provide direct and indirect dividends.

Receive the positive returns from investments in quality

When offered the opportunity to increase one's potential for success by 10% or more at an incremental cost, few investors, or even gamblers, would pass on the opportunity. Too often, without an integrated strategy, firms under-invest in obtaining high-quality and strategically aligned protection for their valuable R&D and technological innovations. Management and corporate stakeholders alike are well served when business executives and their legal counsel resist the temptation to focus on commonly utilised measurements such as volume, size or expenditure. The incremental time and economic investments required to focusing on strategy and quality provide outsized returns.

Understand and communicate the business implications of your IP investments

If IP quality and position are seen as signals of good corporate stewardship, business executives and their counsel should pay heed to (or at least enter into) conversation around those positions. Context is crucial in understanding a company's IP and business strategy. Only a business's leadership and management are in a position to deliver a honed message to its customers, partners and investors about its business model and the role of IP in this. Neglecting the conversation too often leads to a misconstrued or negative reaction about the business's IP plans. The role of IP and well-positioned, high-quality IP in supporting business success and innovative provides compelling information to firms seeking to demonstrate their effectiveness and value.

Actionable strategies

An initial assessment of a company's intellectual property position or of multiple firms in an industry is not a determining answer on whether the company is a good investment or acquisition candidate. However, important information is available to prioritise time and attention to those situations of greatest interest. With many sectors including dozens, if not hundreds, of early-stage companies, gaining a thorough understanding of the landscape is critical if one is to succeed.

Assessments of early-stage firms and their intellectual property holdings support the position that good intellectual property provides competitive advantages. In fact, merely holding intellectual property signals a greater likelihood of initial success. Those early-stage companies that develop stronger intellectual property positions possess even greater likelihood of success.

In addition to typically defined competitive commercial advantages, strong intellectual property positions build investor and partner confidence by signalling sound management. With competition between firms for capital, licensing partnerships and alliances under heightened pressure, management is served well when it includes intellectual property perspectives in business planning, strategic initiatives and investment decisions. *iam*

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