Starting a Biotech Company In a Dot.Com World

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In the San Francisco Bay Area, being a biotechnology start-up company in the mid-to-late 1990s was akin to showing up at a party in the wrong kind of suit.

Although biotechnology entrepreneurs were able to attend the party that drove the enormous economic boom of the 1990s, they were far from the belles of the ball. While investors lined up to court entrepreneurs armed with "dot.com" and other Internet business plans, biotech entrepreneurs generally received far less attention, funding, and resources. In some cases, after encountering difficulties, these entrepreneurs shed their biotechnology suits in favor of dot.com attire.

But by the time 2000 had rolled around, those that stuck with biotechnology started to attract more attention. When the economy took a downturn and the party ended, some biotechnology companies had far greater staying power than did the dot.com companies, allowing them to enjoy the party provisions that remained. This certainly was not the first — nor will it be the last — time a single industry drove an economic boom.

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We biotechnology entrepreneurs who lived through this period have learned valuable lessons about how such a situation affects the biotechnology start-up world, what makes being a biotech start-up different from being an Internet company, and how to deal with the challenges that emerge from these differences.

ECONOMIC BOOM, WITH THE WEB AT CENTER

By the mid-1990s, Internet fever had gripped the Bay Area. Dot.com billboards literally lined U.S. highway 101, one of two main freeways linking San Jose with San Francisco.

Stories of overnight millionaires and start-up companies quickly going public constantly circulated throughout the Silicon Valley. Internet and stock-option talk permeated conversations at Stanford, at "power lunch" locations such as Il Fornio and Hobie's in Palo Alto, and at seemingly every social gathering. There was constant chatter about what could be sold via the Web. If something had been done already, aspiring entrepreneurs would discuss and consider every possible permutation; if, for instance, cars and neckties were already sold on the Web, maybe ties with cars on them, neckties that look like cars, or neckties in cars would sell. People who usually gravitated toward traditional corporate, government, or academic jobs quickly tried to join the fray. There was the feeling that if you were not an Internet or technology entrepreneur, you were missing out on something big.

At the same time, the biotechnology industry in the Bay Area certainly was not moribund. The tremendous growth in the 1980s had generated dozens of biotechnology companies in the San Francisco area, including powerhouses like Genentech, Chiron, and Genencor. The area continued to benefit from a constant supply of talented and motivated researchers from Stanford and the University of California, as well as the rest of the country and overseas. The burgeoning of the overall economy and the stock market had carried along numerous industries, including biotechnology.

At the height of the Internet rush, however, while established companies and players in the biotechnology world benefited from high stock prices, the booming economy, and the entrepreneurial environment, I learned from personal experience and observation that biotech entrepreneurs were not finding the path as easy as the dot.com entrepreneurs had found it.

Graduating from Stanford Business School landed me in the middle of the economic party. By virtue of cofounding one biotechnology company and helping another get off the ground, and by having several physician and scientist friends in the biotech entrepreneurship business, I found myself wearing the biotech suit as well.

BIOTECH: SECOND FIDDLE

From an investment perspective, biotech entrepreneurs suffered from not appearing as attractive as Internet entrepreneurs. Although resources were bountiful, they were still finite, and the Internet start-ups were gobbling up a disproportionate share. So why were biotechnology start-ups less attractive?

First of all, most biotechnology companies required significant start-up costs, saddled with the two-headed albatross of specialized pricey equipment and facilities and highly trained, expensive employees. Contrast this with Internet companies, which only needed office space, motivated people, a reliable server, and access to providers of whatever goods the companies wanted to sell.

Second, biotech companies required long lead times before any significant revenues could be generated. This meant that biotechnology companies would operate in the red for at least several years — in stark contrast to the perception that the dot.com companies would become cash cows rather quickly, as evidenced by the significant valuations they received. Of course, most of them never approached profitability.

Along with being less costly to start, dot.com companies did not have to deal with the regulatory issues and agencies that biotech faced (e.g., U.S. Food and Drug Administration, Nuclear Regulatory Agency). Discarding paper was not the same as discarding radioactive and chemical waste. Dot.com companies, which usually just funneled items from suppliers to their customers, did not have to worry about good manufacturing or laboratory practices.

Compared with biotechs, dot.com companies were also relatively free to make whatever claims they wanted to make. Hyperbole was common. Some dot.commers claimed that their companies would "change the world," whereas many biotech entrepreneurs were happy with just having the time to change the oil in their cars.

Additionally, biotechnology necessitated patience, which often did not mesh with the short-attention-span culture that saturated the Silicon Valley. Rather than get-rich-quick schemes, biotechnology investors and employees were faced with "get rich — maybe — if things work out after 5 to 10 years." Usually, investors and employees were not willing to wait that long, especially when faced with the opportunity cost of "missing out" on the Internet craze.

After two years, scores of dot.com companies either had gone public already or had been acquired by large corporations for significant cash windfalls. After two years, we in biotechnology still could not afford to pay ourselves and were constantly thinking of ways to cobble together money to keep our operations going. Moreover our technology focus also had shifted, from radiosensitizers to molecular evolution — meaning that we had to change our business plan, market projections, and sales pitches.

SCIENTIFIC BARRIER

Selling or trading items such as make-up, books, and clothes over the Internet were relatively easy concepts for most people to grasp. But most people did not understand biotechnology, and people often shy away from what they do not understand. To gain an understanding of a biotechnology concept often necessitates significant expertise. Most investors did not have that expertise and had to rely on their circle of industry advisors to help them evaluate the concept or technology. Without appropriate experience, even those within the biotechnology industry could not always adequately evaluate the potential of a technology.

Moreover, being a biotechnology entrepreneur simply did not appear as "cool" as being an Internet entrepreneur. Biotech entrepreneurs were not making the front covers of popular magazines, appearing on TV, or dating celebrities. (At most, biotech entrepreneurs would date each other.) Biotech entrepreneurs were not the center of attention during entrepreneurship seminars, summits, and other gatherings sponsored by universities, corporate law firms, venture groups, and start-up incubators.

Dot.com business plans often were a single-page listing of what was to be sold over the Web and the market size, while biotechs had to acquaint investors with certain biomedical concepts.

The Internet rush was more than just a business boom — it had become a cultural phenomenon. Scores of dot.com entrepreneurs did not look — or live — like cash-poor, risk-taking entrepreneurs. With venture money flowing freely and with relatively low capital costs, founders often unabashedly spent their bounty and, within months of incorporating, paid themselves healthy salaries, worked in plush offices, and enjoyed a variety of perks. While some Internet companies were putting workout facilities and cafeterias in their offices, most of our capital was going into reagents and second-hand equipment and glassware purchased from auctions.

Finally, Internet entrepreneurs far outnumbered those in biotechnology. With virtually no barrier to entry, anyone could launch an Internet company quickly.

Although some of the Internet companies were legitimately creative, a vast number were "me-too" companies, cobbled together more to make a quick buck or to be part of the start-up scene than to fulfill a sincere interest in the field or to grow a company over the long term. (Did we really need a dozen different companies selling books over the Internet?) Some of my former business-school classmates found themselves competing against teens and senior citizens for market share.

By contrast, biotechnology entrepreneurs were a relatively small, subspecialized group. (You could have formed sentences from the letters in the degrees of our founding team.) Few people "jumped" into biotech without having had experience in the biomedical sciences.

As usual, the majority dictated the tone. Investors and the work force followed the crowd. Investors tended to be risk averse and would not take the plunge into the unknown, unless fellow investors already had done so. With stories circulating daily about investors garnering absurdly high returns on dot.com companies, the road to investing in these companies already was well-established and traveled. A well-known biotechnology analyst once said to me, "Do you really want to be the person who is wrong while everyone else is right? I'd rather be the person who is wrong when everyone else is wrong."

STARTING OUT

The differences between biotech and the dot.com world were evident immediately. Our original business plan was considerably longer and more complicated than most dot.com business plans. Some of the more successfully funded Internet companies had single-page business plans that simply listed what they were trying to sell over the Web, the size of the potential market, and brief biographies of the management team. Our plan had to acquaint investors with certain biomedical concepts and to explain how our basic science ideas and intellectual property ultimately would have clinical applications.

Our financial projections were rather complex, as we had to predict costs and potential revenues 5 to 10 years into the future. Our plan also had to explain how we would comply with good laboratory and manufacturing practices. On top of that, we had to develop multiple versions of the plan that were designed for potential investors of different levels of sophistication. This made the "elevator speech" — the 30-second encapsulated version of the business plan that you would tell potential investors when you had limited time (like in the elevator) — all the more challenging.

The Internet boom did make certain things, like patenting technology and incorporating, relatively easy to do. Silicon Valley was teeming with businesses and individuals offering services for entrepreneurs (including strategy consultants, business-plan readers, lawyers, and office-space planners) who were willing to waive their fees in exchange for stock options. There was an explosion in businesses trying to help Web businesses, including companies that performed services that entrepreneurs were too "busy" to do, such as walk their dogs, do their laundry, or shop for groceries.

Space was limited and extremely expensive in the Bay Area. Internet start-ups gobbled up much of the available office space. In contrast, biotech start-ups could not be housed in just any location; there had to be adequate space and facilities for a laboratory. Local waste disposal ordinances were also important. Sometimes Internet start-ups would rent space from large, established biotech companies, which made for an interesting dynamic, like subletting a bedroom from a large family that lives in a large house. While dot.com companies often needed only an idea to secure funding that would pay for space, biotechnology companies typically had to secure the space first to run experiments to generate the results that would be used to attract funding.

ATTRACTING INVESTORS

Finding funding was not exceptionally difficult, yet it was not as easy as one would expect given the robust economy. It was frustrating being surrounded by dot.commers swinging deals with relative ease. With an abundance of potential Internet deals, prominent general investors had less interest in biotechnology, and some venture capital partners who had built their careers on healthcare investments switched their portfolios to Internet companies.

Even among those investors who were still interested in the biotechnology sector, some would seek companies with shorter-term returns, such as those that specialized in bioinformatics or technology that provided support for biotechnology research.

Aside from picking successes and avoiding failures, professional investors focused on maximizing their return on investment (the ratio of the amount of money they make over the amount of money they invest in a company) and having a quick and lucrative exit strategy (either selling the company to a larger company for a high price or having the company go public.) In other words, the goal of investors who did not have a burning vested interest in biotechnology was to make as much money as soon as possible, something biotechnology companies could not offer as well as Internet companies did.

So, after briefly flirting with the prominent venture firms and getting little attention, we realized that we would have to pursue investors with strong vested interests in biotechnology. These would come through a series of personal contacts that led to both institutional and noninstitutional investors, such as biotech angel investors (individuals who were interested in biotech and had access to significant capital) and angel consortiums (groups or clubs of angel investors).

Building such a network necessitated significant time and effort, especially for a group of relative neophytes. During this time, to stay afloat, the principals in biotech companies regularly used their personal money and loans, and applied for small business grants. Again, this contrasted sharply with the dot.commers, who often were able to secure investors rather quickly.

In fact, at the time, local universities and business schools were offering a number of Internet-related

courses that served as bridges between investors and potential entrepreneurs. Similar courses in biotechnology were fewer and farther between.

TOO MANY SUITORS

At first glance, recruiting appeared relatively easy. Talented individuals were willing to abandon a safer, more traditional company and university position to work for a start-up company. It was common for those working toward a Stanford doctoral or medical degree to "stop out" (Stanford jargon for taking a leave of absence) of their programs to work for a start-up.

The overall size of the population in the Bay Area seemed to be increasing as well, likely from people flocking to the area to partake in the Internet gold rush: traffic was getting much worse, San Francisco sidewalks were becoming more crowded, rents were skyrocketing, housing availability was plummeting, and wait times at restaurants were lengthening. Furthermore, potential employees were willing to work for little cash, as long as you ceded them many stock options. Stock options offered the promise of riches that fixed salaries could not. It became common for everyone in a company, from top to bottom, to own stock options.

Yet, it was difficult to compete with all the Internet companies for employees. Even large, traditional employers — such as management consulting firms, investment banks, and Fortune 500 companies — found it difficult to convince Stanford students to join their ranks. Unemployment rates were low.

Sudden drastic career switching into the Internet world was common. Some individuals who had spent most of their careers in the biomedical sciences jumped to dot.com companies. During interviews, these career switchers often were forced to provide a creative rationale for their change of heart (for example, "I left cancer research because I felt I could have a greater impact selling movie videos over the Web").

With myriad, seemingly more attractive, options for employment, the pool of potential employees was small and often short on experience, training, and ability. One of my biotechnology friends was forced to hire a receptionist who, in his words, "could not type, could not use a computer, loved to use the phone, but somehow could not answer it."

With such a multitude of potential suitors at the party, some people were willing to work part-time for a company but not commit full-time, creating an unusual dilemma. Was 10 to 25 percent of a talented, capable, hard-working, individual better than nothing — or, perhaps, better than 100 percent of a less-talented, hard-working, capable individual? Would you be willing to share knowledge of your company with someone whom you know is working for another company? Would you be willing to entrust significant responsibilities to a person, knowing that he or she may not be available or even reachable for large periods of time? How would relying on part-timers affect the culture of your company?

The answers, of course, depended on how irreplaceable the part-timer and his or her skills were. In some cases (for instance, nobody else could perform the experimental technique, no one else was available for work at the time, or no time was available for recruiting someone else), there was no choice but to hire the part-timer.

Ensuring that potential partners and employees have realistic expectations before they join is important and, in the long run, saves significant time, effort, and money.

STAYING IN THE FOLD

Of course, while hiring employees was one challenge, retaining them was another. The biotech companies were competing with Internet companies to retain employees. Maintaining optimism in the company, while always important, was especially so during that time. But it can be difficult to maintain day-to-day optimism in a research-and-development environment, where even minor successes can take a long time to achieve.

Rather than sales figures, Internet traffic numbers, or press clippings, esoteric or experimental results often provided the only news to keep people motivated. Such results may be meaningful to those who understand the science well, but explaining their significance to those who do not can be difficult. We had to convince our employees (and investors) to share our vision, that the bad times would be only temporary, and that the good news was indeed significant.

To do all this, we essentially had to be trilingual — to be able to translate scientific terminology into business terminology fluently and then into

lay terms and vice versa. This is an increasingly rare ability as business and scientific terminology grow more complex and esoteric, and as people become more and more specialized in their work.

Not everyone working for a biotechnology start-up had a bioscience background. Some got involved because they were curious or because they found the goals of biotech to be worthwhile, interesting, and even "sexy." Some predicted that biotech would be at the center of the next economic boom and were trying to beat the rush.

Those whose expectations did not match the realities of biotechnology abandoned the biotech world fairly quickly. Those with more realistic expectations tended to persist and, after a period of time, found the biotech arena to be extremely fulfilling. In general, therefore, while it may be tempting to oversell one's company to get people on board, ensuring that potential partners and employees have realistic expectations before they join is important and, in the long run, saves significant time, effort, and money.

STILL STANDING

More than five years after incorporating, the biotechnology company I cofounded, and the one for which I helped write the business plan, and a number of the biotech companies that were founded by friends have all survived.

The same cannot be said for a majority of the dot.com companies; most no longer exist. The lion's share of dot.com companies that had received significant press coverage and fanfare disappeared ignominiously, with their founders now having returned to more traditional corporate jobs or to the investment community.

Furthermore, the dot.com era generated a plethora of "paper millionaires" who had stock options worth millions but were not able to convert their stock options into cash before everything collapsed.

In the end, the bulk of dot.com companies did not have staying power, in part because their founders commonly did not have vested interests in what they were selling. This is evidenced by the fact that they are no longer involved in the same products or areas. It is less likely and not really feasible for one to have a passing interest in biotechnology. Money and fame can be powerful motivators, but building a company that will last necessitates genuine interest and internal motivation.

LESSONS LEARNED

Starting a biotechnology company is like entering into multiple marriages at once (for some. this is a particularly scary analogy). Unlike the dot.com industry, where multiple short-term intense relationships often paid significant dividends, biotech necessitates a significant personal and financial investment. Ultimately, however, if you are in it for the right reasons, it can pay dividends.

Qualities that can be likened to those that make for stable marriages contribute to the stability of biotechnology companies:

- Seek investors and employees who have a demonstrated interest and expertise in biotechnology
- Be trilingual, in the sense described earlier
- Do not let the environment and distractions derail your goals
- Take the long-term perspective
- Strike a balance between promoting your company and setting realistic expectations

INTERNET CRAZE LEGACY

One cannot help but wonder what would have happened had the resources that went into the failed dot.com companies instead been allocated to biotech start-up companies. How many biotechnology ideas and efforts were abandoned in favor of the pursuit of quick riches in the Internet arena? How many talented people left the biotech arena and did not return? I know of several people who left the biomedical sciences to spend several years in the dot.com world, only to return to the biotech arena without the riches they expected — older, and behind on the developments that had transpired since their departure.

Of course, those who ventured into the dot.com world gained important life experience and learned crucial lessons that eventually might serve them well in the biotech arena. At the same time, some burned investors and employees learned to refocus on the fundamentals (e.g., whether the founders are truly vested in the product and whether it will have true, lasting value), rather than the flash and hype of a company.

Perhaps the dot.com collapse will motivate everyone to better understand the biotech industry and shore up resources for potential entrepreneurs. As with all economic booms or parties, resources and attention get overappropriated to some companies and underappropriated to others. In the end, when the party closes down, only the ones with a grounding in something real are left standing. BH