

# Vapornomics

Maxime Paris

1975. Bill Gates and Paul Allen at Microsoft are not ready to release the software they had publicized. Simple solution: they say it's ready and better than anything in existence. Result: most rivals are ready to quit. Gates and Allen then send anonymous colleagues around to buy at a discount what others have developed. They subsequently combine what they collected with what they had, package it after ironing out visible flaws, and deliver, awaiting consumer complaints to polish and release a final version. By then, most rivals are bankrupt and business is booming. It is only business, after all. This strategy was named *vaporware*, and helped Microsoft most of the way. Vaporware is defined as "products announced far in advance of any release (which may or may not actually take place)"<sup>1</sup>. The procedure is based on the principle that the more media coverage a product obtains, the better it will sell. So telling the press early is always a good idea. A similar phenomenon now appears to be occurring in the world of genomics.

Welcome to the world of vapornomics (vaporware + genomics = vapornomics). Biotechnologists often benefit from the experience of others when it comes to business management, and many biotechnology executives, armed with a portfolio of controversial patented sequences, have now become experts at vapornomics by proclaiming enormous numbers of recently cloned genes (fully sequenced and characterized), by seducing colleagues with the number of drugs they have developed in the past year, propelling several of them to phase II and III trials, and by claiming millions of bases sequenced every day using minimal staff. Verifying this information is another matter. Nevertheless, market capitalization invariably increases as a result of these claims, with borrowing potential soaring accordingly. More staff join and equipment rolls in. Most venture capitalists base their investment decisions on predicted future earnings and can only verify complex scientific information to a limited extent. Until the time comes for products to be released, earnings to increase, and profitability to materialize, capital is provided on trust. Meanwhile executives fly high on credit.

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One could easily suspect Celera Genomics (Rockville, MD) of playing a similar game. Announcing fully sequenced human genomes well in advance of their schedule, smoothly surpassing the public project which had been struggling for too long and spending too much, has brought Celera fame and abundant press coverage, with headlines reading "Cracking The Code" and describing these as findings that will change medicine forever. Wall Street was more than ever enticed by these envisaged medical and pharmaceutical applications, lured by the significance of these achievements, but apparently unconcerned about the completeness and the accuracy of

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the data or the vague suspicion that parts of Celera's data were obtained from the publicly funded project through GenBank's website. Although most stockbrokers had never heard of expressed sequence tags (ESTs) and "shotgun sequencing", they cheerfully labeled the stock a "BUY". By March 2000, with the high-tech bubble inflating, Celera was peaking; with a price per earning ratio (P/E) above 1,000, its market capitalization was progressively approaching US \$20 billion. The enterprise had access to more capital than any biotech company could have ever dreamed. The then-raised capital undoubtedly made their momentum sustainable, allowed their promises to be kept, and most data to be ultimately delivered. Although Celera's share price has been plummeting since Blair and Clinton's joint statement calling for genomic information to be freely available to all, combined with the April 2000 market correction, the corporation still appears in descent. While sales are increasing, it's unfortunate to witness one of history's most fantastic biotechnology ventures suffering a rising net loss (net loss rose 27% to US \$55.4 million for the six

months ended 31 December 2000). Only time will tell how Celera sustains and becomes profitable. For the moment, vapornomics and the resulting press coverage most likely helped in boosting Celera high in the biotech market.

Many biotechnologists learned their lesson and are attempting vapornomics maneuvers by publicizing important discoveries (which may or may not actually take place), routinely multiplying their data acquisition ability by 10 in speech alone while proclaiming numerous upcoming patents. This is obviously business, not science. Although markets are fierce and generally do not accept apologies from untrustworthy entrepreneurs—nor will they tolerate minuscule or negative earnings forever—emerging biotech firms hardly pierce the market without using vapornomics.

Hopefully, lessons from the Microsoft empire will be memorized by biotechnology executives to prevent the occurrence of antitrust cases in the years to come. Other rules of business planning will probably have to be learned the hard way for many. Silicon Valley has been thinning out in the past year, with too many broke information technology startups unable to deliver their promised products. The market was in reality too small for all of them to survive. As for the biotechnology startups, robust and novel ideas should survive while fickle ones quickly disappear.

For the moment, these events cause concerns among academics. Researchers who have long been investigating, for example, specific pathways occurring in their favorite organism can be rapidly made redundant at any moment by the corporation who secretly sequenced the organism's entire genome. Fortunately, these fears do not stop academic researchers, as rewards obtained from fundamental research are quite different from the ones obtained from private research. And, after all, a shotgun approach for genome sequencing does not automatically answer functional questions. Truly well-designed scientific experiments often have no immediate commercial applications while still contributing to the advancement of science. With the amount of private research ever increasing, is there still a place for academics with limited public funds? Keep the faith. Or solicit venture capitalists: your quest for an initial public offering (IPO) may materialize. If that is your wish. Most accountants don't recommend it.

1. [www.foldoc.org](http://www.foldoc.org) Free On-Line Dictionary of Computing.