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Differentiation and integration

In deriving equations to determine the differential root of an equation, quantities that are the products of two incremental quantities are routinely equated to zero, without altering the end result—to the great surprise of most mathematics students. Until recently, much the same sort of thing has happened during mergers or acquisitions in biotechnology.

Only a matter of a few months or a millennium ago—depending on your perspective—many biotechnology mergers appeared to be last-ditch acts of desperation. The spate of mergers at the end of the last century were justified variously because of “technology fit,” “management complementarity,” or the need to for companies to “bulk up” in order to retain their visibility with investors. While all of these are acceptable reasons for corporate confluence, the reality in many cases seemed to be that the companies involved had simply run out of options for remaining independent. Previously, thrusting senior executives with ambitions to nurture profitable stand-alone companies had become hospice nurses, dedicated to staying with their moribund charges until the inevitable, unhappy end. Having spent virtually all their pocket money and having been rebuffed repeatedly by potential collaborators, the senior executives of two management teams trailing their deflated egos between their legs would finally admit that it was time to contemplate sharing or transferring control of their companies. A hearty press release and an apathetic shareholder vote later, and two insignificant companies with no financial prospects would become one—one insignificant company with no financial prospects, that is.

The merger and acquisitions picture in biotechnology seems to be changing, however, at least in some areas of enterprise. The proposed marriage of Sequenom and Gemini Genomics announced at the end of May, for instance, is probably just one of the first in a series of mergers or acquisitions involving companies specializing in mining information in the human genome.

Technically speaking, the Gemini Genomics–Sequenom merger brings together the former’s breadth in population genomics with the latter’s mass spectrometry-based genetic analysis system: the presumptive calculation is that human genetic resources plus rapid analytical system equals more powerful data generating machine.

Perhaps more significant than the technical rationale, however, is the timing of the move. Both Sequenom and Gemini are still in the youthful and vigorous phase of growth. Only last year, the two companies between them raised over \$250 million in their initial public offerings on Nasdaq. Most of that money is unspent. Clearly, this merger is not driven by poverty of either money or ideas. Under such circumstances, it is much easier to believe the companies’ arguments that their merger is part of a well-thought out strategy.

The need for integrated collaboration in genomics is clear. There is an overabundance of newly floated genomics companies (37 of them last year alone) each holding one or two pieces of the

gene-based drug discovery jigsaw puzzle. Certainly, they are not all going to become independent profitable entities. Indeed, unless they buck the trend of the past 20 years in biotechnology, most will probably not increase the value of the equity stakes shareholders have bought. Cynics might even conclude that the multiple genomics flotations and secondary offerings of 2000 were merely a way of extracting more money from the investor community during its temporary lapse into enthusiasm; and that companies like Gemini and Sequenom should have merged first and floated afterwards.

What is also clear, however, is that in order to create a sustainable company, it will never be enough simply to mash together the technologies of a few genomics companies and their bank balances. Although that will create bigger and more multi-faceted genomics boutiques in which the dwindling number of large company buyers have a better chance of finding the custom technology packages they seek, such companies are not likely to be sustainable. Wearers of fashionable foot gear in the 1970s demonstrated that bigger platforms can make one stand above the crowd, but they are not much use in a foot race and have long-term utility only as historical oddities. Genomics is similarly modish. Today’s best chip technologies may not be tomorrow’s. And merging two enterprises that discover or validate drug targets only creates a single target-oriented enterprise, albeit one with go-faster stripes.

If the rich kids of the genomics class of 2000 are truly acting strategically, then they cannot only collaborate with each other. The value of human genomics, if any, must come as the application of genomic studies leads to identification of potential drug molecules and their further development. Without further acquisitions, acquisitions that bring them chemistry and clinical development capabilities, genomics companies can only be service providers. Indeed, as *Nature Biotechnology* went to press, Celera Genomics announced it was acquiring Axys Pharmaceuticals, and Lexicon Genetics buying Coelacanth, for this very reason. Companies must move away from their dependency on the vagaries of pharmaceutical companies outsourcing budgets. More mature firms, such as Millennium and Vertex, have demonstrated how the ballast of bog standard clinical chemistry and clinical development programs can allow a company to steer a more certain course toward the market, to harness the powerful motor around which the companies were formed.

There will undoubtedly be further genomic–genomic collaborations, mergers, and acquisitions in the next few months. But we should also expect to see those aggregated groups reaching upwards through the development pipeline through M&A or close collaboration with companies that have molecule development capabilities. Only in that way, can members of the genomic clan hope to capture the value of understanding how human biological inheritance influences disease and responses to treatments.