The economics of running a genomics company

Business, Company

What are the economics of running a genomics company? What is the role of large pharmaceuticals in genomics? How competitive is the genomics industry? Running a genomics company is extremely capital intensive. Research and development, patenting, and developing marketable products cost a lot ofmoney. The associated dangers of working with patents are also at issue here. Genset must be able to defend its patent in court against patent trolls, which can layer additional costs upon the capital intensive primary business activities of the firm.

At this point in time, the patent situation surrounding mapped genes is also tentative. The US courts have yet to rule on the patent status of genes, making the market for patented genes suspect. The other difficulty of the genomics industry is turning research into revenue. It takes a very long time to turn a patented gene into a medical product, which has to pass through several rounds of scrutiny before entering the market. Even if Genset is able to find a major gene, they might not see returns for several years. Large pharmaceutical companies are integral to the genomics industry. Genset researches genes that are related to a wide variety of diseases. However, many mapped genes will not be linked to any underlying genetic disorder. The genes that are linked to treatable disorders must be researched to discover chemical compounds that interact with genes to treat the underlying disorder. While Genset has the intellectual capability to research the genes, they are not capable of developing drugs to interact with the genes they have mapped. Through licensing agreements, genomics companies could decrease the risk and amount of time before they could report positive earnings.

The licensing agreements generated revenue immediately by selling some or all of the rights to future applications of specific genes. Thus the genomics companies did not have to wait for future applications to mature before they could realize positive earnings. The industry is also extremely competitive. There are 114 biotechnology companies in France, with an additional 1, 050 in the United States. Several genomic companies have already passed through their IPOs with mixed success. Competition is fierce to discover every human gene. It is a race to see who finds and catalogs all the human genes by the end of the millennium. By early 1996, there was an intense race to map all genes, and genomics companies were getting closer to finishing the task every day. There is also heavy competition between the genomic companies and pharmaceutical companies. 2. What is happening at other genomics companies?

What is Genset's competitive position in the genomics industry? Many genomics companies have passed through IPOs and private funding rounds. At 250 employees, Genset is larger than all the other comparable companies provided in the case. Many other companies are operating in the sequencing business, developing libraries of sequenced genes. Beyond private companies, many research universities, government-sponsored facilities, and research institutions are also sequencing genes. While progress has not been lightning fast, it is worth noting that there is a finite supply of genes in the human genome. The amount of genes that are functional from Genset’s perspective is unknown. While competition to discover every gene was fierce, Genset was engaged in the systematic and comprehensive analysis of

the genetic map of the humans to identify and patent genes and regulatory regions related to selected common diseases.

Genset was a unique firm because it was both creating a library of genes and researching the genetic causes of diseases. They intended to discover drugs to treat these diseases and enter into strategic partnerships with pharmaceutical companies to develop and market these drugs. Genset not only researches genes, but it also is the world’s largest creator of synthetic DNA. Bradys believes that this line of business is extremely important to Genset’s future. Part of the desired $70 million will be devoted to tripling the output of synthetic DNA by updating its sequencing machines and increasing its workforce. Part of the money was needed tofinancemore equipment purchases and further research for its DNA mapping and sequencing operations to beat its competition.

The industry is expanding quickly, with many small, nascent firms popping up, searching for private funding. The landscape is expanding quickly, with each firm trying to find ways to monetize its findings as quickly as possible.
3. What are the key success factors in genomics? What are the risk factors? What is the nature of cash flows in genomics? To be successful in genomics, a firm must have the capital to acquire the necessary equipment and personnel to quickly map and patent genes.

Given the finite amount of genes available to map, the genomics industry is truly deadlocked in a race to sequence the human genome. While raising the necessary capital is difficult, the more difficult aspect of the genomics industry is finding ways to monetize their research. Genset is fortunate to be

the world leader in synthetic DNA. While their research may take years to pay off, their synthetic DNA operation gives them a reliable revenue stream.

Genset is unique within the genomics industry in thatrespectand another: they are not just sequencing genes; they are also researching the genetic causes of diseases. This additional research makes their genetic patents and researches more valuable to pharmaceutical companies that will be assured that they are pursuing worthwhile genes. To achieve profitability, Genset needed to successfully discover genes related to particular diseases, find partners to develop the products, conduct clinical trials, get regulatory approvals, and successfully manufacture and market such products. But the risk with this plan was that Genset was based in France and patented its discoveries in France and the Eurozone countries.

They were also unsure if the discovered gene fragments or genes (without known functions) could be patented. This was a BIG risk, in that any other firm could discover the gene’s function and patent it. Also since they did not have any patents in America, where they were considering raising money put a big question on the viability of the plan. There was also the possibility that the patents, mainly on which the firm’s value was based on, were broad enough to give the firm a competitive advantage besides any patent could be challenged, invalidated, or circumvented by others. Are Genset's cash flow projections reasonable? How much cash does the company need and when? To achieve profitability, Genset needed to successfully discover the genes associated with particular diseases and find appropriate strategic

partners to develop products, conduct clinical trials, and obtain regulatory approvals.

Genset entered into a three-year strategic alliance with Syntehlabo SA which focused on discovering genes associated with prostate cancer. They were also under discussions with an affiliate of Johnson & Johnson to target schizophrenia. Their financial projections showed that in the future the company expected its revenues to come primarily from these types of contract revenues. The company has also filed three patent applications in France relating to its gene sequencing techniques. They are projecting their revenues based on successfully discovering these genes. Genset is looking to acquire approximately $70 million to finance more equipment purchases and further research.

The company needed $30 million for capital expenditures including the expansion of its TGS high throughput sequencing facility, the construction of a new mapping facility, and polymorphism scanning lab. Another $40 million would fund ongoing research and development expenses. The funds were needed almost immediately. Without thistechnologyand research, Genset would fall behind with no chance to recover. Raising this capital would be Genset’s largest financing project and would augment the $54. 2 million of funding raised through private equity (70. 4%), bank loans (13. 5%), government bonds (7. %) and other loans (8. 9%).

We believe that Genset’s cash flow projections could be overstated since a major part of their cash flow source is contract revenues which would have to be made with Pharmaceutical firms. The case mentions that currently all

the patents that Genset has are registered and protected in Europe. Most pharmaceutical firms on the other hand are based in North America with it being the largest market and unless all the patents that Genset are are registered and protected in North America, we believe they would not be in a position to achieve those cash flows.

Hence we have discounted these cash flows by 40% initially. Also, we believe that post an IPO and strategic investors from North America, Genset will develop the capability and expertise to pursue these patents listed in N. A and achieve the growth that they expect now. Thus we have a terminal growth rate of 5% factored in our model. However, we have factored in the capital expenditure schedule that the firm has planned on the onset and that has been factored in the model since these expenses are essential in the pursuit of the firm’s future projections. 5. What is the current state of the financial markets? Are they conducive to an initial public offering by Genset? Would a private placement be a better alternative? The current state of the financial markets is healthy.

Recent IPOs by other genomics firms have fared very well, despite the inherent risk in the business. Gene research is seen as the future ofscience, just as physics was the driving science of the early twentieth century. Given the success of recent offerings (with Human Genome Sciences and Myriad Genetics being the most successful), Genset is correct o investigate the possibility of a public offering. US capital is flowing into genomics at a steady clip, making it an appealing source of funding. The conditions associated with private funding make it less appealing to Genset. Genset is also unlikely

to be able to raise their capital requirements through private funding alone. They have already received $54. 2 million in private funding, with 59. 3% of their shares owned by private investors. Private investment in biotechnology is at an all-time high, but funds are restricted from putting more than 10% of their total capital into any one business.

This may require that Genset form deals with multiple funds, further dividing their remaining equity. Also, there is a possibility that post these deals, while Genset would further dilute their equity there could be a situation where they could again be short of funds, and raising funds in the future via this route could/could not be difficult.

However, once you access the public markets there is always the option of accessing the markets continuously for multiple capitals raising activities. Thus going public sounds much more attractive. Also in the future, given the right strategic partner and if making continued contract revenue agreements becomes difficult they could also enter into a partnership or joint venture. Given that the firm would then have stock that is listed on the bourses makes this much easier and hence going public is an extremely attractive choice. 6. Should Brandys take such extreme measures to issue stock in both France and the US? Why is he doing it? What additional costs and requirements are raised in doing so? Bradys is understandably wary about issuing stock in both France and the US.

The offering would cost Genset twice as much, losing roughly 20% of their raised capital to fees and services. Before the offering, Genset would need to review their financials and prepare their past statements to comply with both

US and French law. They would also need to secure accountants, lawyers, and underwriters in both France and the US, which will cost the firm a hefty price. Bradys is pursuing this option to expose the firm to as many possible sources of funding as possible. The US capital market is deeper than that of France. However, since the firm is French, it is able to draw some of the most talented French scientists to its firm. The US genomics market is deeper, making the pursuit of human capital more difficult. Bradys understands that if he were to only make an offering in France, he would be incapable of raising their required funds. Bradys needs the US market not just for capital. He also needs the US pharmaceutical industry and patent protection. By having American capital, Genset can more effectively lobby the US government for the patent protection they need to make their mapped genes intellectual properties.

It is also worth noting that Genset has plenty of cash reserves and is not as badly in need of capital as Brady believes. While the US has yet to weigh in on patent protection for genes, the increased amount of commerce on the side of genomics indicates that the courts will most likely uphold the rights of companies to patent their library of genes alongside their patented process. Why is Genset going public now? Does it make sense? Genset is going public now because they need $70 million in capital to advance their research and to not fall behind other genomics companies. There are some positive points to going public now. Tapping into the US market makes sense because of the higher amount of venture capital expenditures over their native France.

If Genset does not find a way to raise this capital, they will most likely fall out of competition among their direct competition. The drawbacks to going public are many. No other similar genomics business has raised $70 million in its IPO. The highest previous offering was by Human Genome Sciences, which raised $66. 7 million. However, Human Genome Sciences did not face the challenges of Genset. Most offerings lose 10% of their raised capital to offering related services. Genset could conceivably lose 20% of their offering value, as they must prepare for offerings in both France and the US. A dual offering would require accountants, lawyers, and services for two different markets in two different languages. If Genset were to achieve their desired level of $70 million, they would need to raise roughly $87. 5 million in the capital, before related costs, are tabulated. It makes sense that Genset goes forward with an IPO at this time, although it is not without its dangers.

If their IPO fails, the firm would be tainted and they would be hard-pressed to raise capital elsewhere. They could instead seek more private capital, which would not preclude an IPO in the future. Even if another round of private capital falls short of the $70 million marks, they could receive bridge funds that would carry them to another round of funding through venture capital or an IPO. However, given the number of firms entering the market, Genset could easily hurt their value by waiting.

The markets could grow weary of genomics companies and fail to pony up capital to even the best companies. Genset should strike while the iron is hot, not wait until the market has cooled down. Genset must firmly trust their advantage of having the most talented French scientists in the US

market. The flood of US-based genomics firm has diluted the talent pool of American scientists. Genset has a strong advantage in this respect. Coupled with their superiority in synthetic DNA and competitive edge in DNA sequencing, Genset is certain to be a much sought after stock. 8. What valuation would you put on Genset's stock? Be sure to support your valuation with a specific analysis. You could try to be creative here!

We estimate Genset’s stock to be priced at $10. 57 per share. We are using a beta of 1. 6 which is based on the weighted market capital of all comparable companies. The reasoning behind this is that the majority of the listed firms are in the US and hence it is difficult to find closely comparable firms. We also use the P/E based valuations since the value of the firm will also depend on how the comparable firms have performed in the market post IPO. The terminal growth rate is 5% which is reasonable since we haven’t accepted the revenue streams given to us by the firm. We have reduced them to 60% of the firm’s estimates since the numbers look highly optimistic and could be difficult to achieve given the fact that the firms' patents are registered only in Europe and could not be easily marketable in the US where most development and pharmaceutical firms are based.

The revenues depend on agreements with pharmaceutical firms and if these agreements are subjective then the associated revenues will also be subjective. The core valuation itself comes from a variety of inputs that we considered. While we also did comparable company valuations, we agreed upon considering using the adjusted present values method which realizes a share price closest to that using a range of share prices obtained using the

multiples method. We used a range of discount rates and P/E values associated with them, from the range of comparable firms given to us. We believe this gives us a range of valuations and taking out the High-Low values, we use the median Net Present Value of the firm and the associated stock price derived from it thus ending with a share price of $10. 57 and an NPV of $44. 796mn. We believe this is fair conservative valuation and reflective of the risk as well as the potential associated with the firm.

This reflects a good middle ground for the investors to get in on a company with great potential as well as for the firm to capitalize on its unique position in the biomedical space.