

GENENTECH

Whether to Enter the Pharmaceutical Industry or Stay in the Biotechnology

Industry with an Updated Strategy

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1 Executive Summary

The pharmaceutical industry is the most profitable industry in present-day America. However, the extremely high payoffs are balanced by the high risks associated with drug research and development, which may take as many as ten years to complete. Additionally, the process of acquiring FDA approval for these products is a difficulty in and of itself. The high cost of investing in both research and development and FDA clinical trials is not only draining on company resources for the ten years of development but also is not guaranteed to be recouped after approval. While Genentech is currently the industry leader in biotechnology, the question remains whether Genentech should take the next step, following Pfizer's example, and shift its focus to the marketing of pharmaceutical drugs. Currently, Genentech's greatest strength lies in its research team and its capacity to innovate specialized, highly-effective drugs. However, a number of other extraneous, and possibly unnecessary, investments also drain Genentech's resources, including the development of unspecialized drugs designed for, among other health problems, asthma, and also the large group division highly educated and specialized marketing experts used to sell drugs to specialists. In light of these factors, we suggest that Genentech:

- Continue to focus on developing specialized drugs, and thus fill in as many small niches in the biotech industry as possible.
- Work toward building a strong out-licensing network so it can direct more resources toward innovation rather than the actual marketing.
- Increase revenue and lower costs by: (1) reaching a larger audience in marketing endeavors by holding seminars, (2) attempting to extend patent lifetimes as far as possible, and (3) add more less experienced, cheaper staff to work under fewer experts in marketing instead of maintaining a marketing division comprised entirely of experts.

2 Introduction

Genentech is currently the leading inventor in the pharmaceutical industry and the most successful biotech company in the world with an extensive internal pipeline of potential blockbuster drugs. With a high market capital of 77 billion dollars, Genentech is able to employ heavy investing in the research and development of its products while also maintaining a talented workforce in both the research labs and marketing divisions. Currently, Genentech focuses its research on areas including endocrinology, immunology, cardiovascular medicine, and oncology. The company's defining success lies in the field of oncology, producing the best available and most advanced cancer drugs on the market. Unlike other biotech and pharmaceutical companies, Genentech has refrained from making the choice of becoming a pure inventor or a giant marketer.

Considered the founder of the biotechnology industry, Genentech has been delivering on biotechnology's promise for more than 30 years, using human genetic information to discover, develop, manufacture and commercialize biotherapeutics that address significant unmet medical needs. Most companies buy small companies and acquire entire pipelines, but Genentech prefers to spend its resources strengthening its own pipelines instead of forming alliances with high-potential biotech startups. Moreover, this strategy allows Genentech to support small companies with promising drugs or technology that is still in a stage of development too early for licensing. In this way, Genentech is also able to single out small companies with very high potential of becoming a strong rival to Genentech. Using these strategies Genentech has been able to stay in the rapidly changing market place of biotechnology and keep new rivals from entering the market. However, are these strategies enough to stay ahead of the game indefinitely?

3 SWOT Analysis

3.1 Strengths

Genentech is the industry leader in biotechnology with the largest market cap to date of 70.8 billion dollars.¹² Over the years, Genentech has produced several blockbuster drugs and built a very strong reputation in the oncology field. For example, Rituxan, launched in 1997, was the first monoclonal antibody approved for therapeutic use in cancer in the USA and earned \$2.285 B in 2007 alone. Moreover, in 2005 over 60% of Genentech's total revenue came from four of its oncology drugs: Rituxan, Avastin, Herceptin, Tarceva.¹³

Genentech has a good reputation in the biotech industry because it forms strong alliances with other companies, and it is known for bringing vast resources to partnering deals. For instance, Seattle Genetics' shares rose by 24% the first day it announced an alliance with Genentech. Furthermore, Genentech has a strong reputation in buying and in-licensing of compounds and technology platforms at all stages of development; through GenenFUND, they are able to single out small companies with very high potential.¹⁴

Similar to many other biotech and pharmaceutical companies, Genentech relies on the discovery of new blockbuster drugs, which means that the main foundation for the company's growth lies in the science and the producers of that science—the researchers. As a company, Genentech also has a remarkable reputation as an employer. They were ranked number one on Fortune Magazine's 2006 list of the "100 Best Companies to Work For" and number two in 2007, based on anonymous employee responses and evaluations on company culture and policies. On October 15, 2007, Science Magazine also named Genentech as 'Top Employer'. With both their reputation as a good employer and as a leading biotechnology company, Genentech easily attracts some of the best and brightest minds in the world to maintain its solid scientific research team.

3.2 Weaknesses

Some may view Genentech's relationship with Roche to be one that brings a level of stability to Genentech. However, Genentech's partnership with Roche brings restrictions to Genentech's growth and expansion in Europe. Roche holds a majority stake in Genentech and curtails any major mergers and acquisitions activity or expansion in Europe.³¹ Genentech's marketing strategy is another, significant weakness (see strategies 5.4) that wastes a lot of resources by providing very specialized training, as opposed to mass-marketing.

3.3 Opportunities

Genentech's current focus and priority is aimed toward developing drugs for ongoing problems like cancer, heart problems, etc. Even after the more common diseases are addressed, Genentech still has a whole checklist of opportunities in developing drugs within the fields of oncology, immunology, cardiovascular, and tissue repair. Moreover, as the number of patients with these diseases increase, so does the demand for the drugs. The reputation for having developed the best cancer drug to date as well as the vanguard leader of the biotechnology field will aid Genentech in capitalizing on its strengths and maintaining a firmer hold as the market leader. This opportunity, however, must be seized with careful attention to timing and constant vigilance.¹³

Genentech currently leads the USA market in biotechnology drug development, placing it in the ideal position to expand its market internationally. While Genentech already has a strong partnership with European giant Roche, there may be greater opportunity to reach a larger international market by further expanding into Asia. For example, the Chinese market already has around 6800 domestic pharmaceutical companies fighting for market share, which is no surprise considering that the market is "undergoing a transition with its healthcare reform, and clinical development in a country with 300,000 hospitals and healthcare facilities looks very promising".¹ In fact, China's share of the global market is expected to increase from \$6 billion in 2002 to about \$24 billion by the end of 2010, partly attributed to the fact that China has the single fastest-growing OTC drug market in the world and that China is currently the world's second largest pharmaceutical chemical producer.¹

3.4 Threats

Small companies trying to enter the biotech industry have a huge entry barrier (see six forces 4.1). On average it takes a biotech company twelve years after its first initial public offering to achieve its first profit. Moreover, the FDA is notoriously stringent on its reviews of drugs from the smaller biotech companies. Thus, new biotech companies pose an insignificant threat to Genentech compared to large pharmaceutical companies like Pfizer and Novartis who are lately acquiring small biotech branches as a way of reaching more of the biotech market.

Pfizer poses an even bigger threat with its recent shift in focus toward oncology; thirteen (five among them are biologic) of their current phase I drugs target cancer.¹⁶ Amgen poses a similar threat with several cancer related drugs in phase II and phase III of development.¹⁷ Market-wise, Genentech has to be careful with its timings and decisions because technological development elsewhere in the industry may allow competitors to take over Genentech's lead in the oncology segment of the market. Genentech's oncology sector is its main drug strength—Genentech needs to take care to maintain their lead in oncology.

4 Six Forces Analysis of the Pharmaceutical Industry

4.1 Entry

New entrants into the pharmaceutical industry typically face a number of high entry barriers including:^{1,2}

- Economies of scale in areas such as marketing, manufacturing, R&D, sales, etc. The average production cost of a big pharmaceutical company in the U.S. ranges from \$2 billion to \$3 billion annually. Biopharmaceutical companies in the U.S. invested a record of \$58.8 billion in the Research and Development (R&D) of new life-changing medicines and vaccines in 2007, a \$3 billion increase from 2006.⁵
- Product differentiation created by existing brands and relationships in the industry. Established companies have already built reliable relationships between the leading health care providers, specialists, and physicians. Big companies are able to attract scientific experts with promises of financial stability and also ensuring the quality of their highly commercialized breakthroughs.
- Limited access to distribution channels due to existing arrangements with well established companies in the industry. The distribution channels are “controlled by a few large companies that have access to the hospitals, group purchasing organizations, doctors’ offices and pharmacies across the country”, making it “impractical for smaller companies to have their own inside sales forces to try marketing directly into these channels”.⁴ However, partnerships with large pharmaceutical companies do allow small biotech to reach critical distribution channels.
- Ability to handle the regulatory agencies, to meet regulatory standards, and to protect patents. A new innovation typically requires on the order of 10 years for FDA approval.⁷ Those that do make it through the FDA are only granted limited lifetimes under patent protection. E.g., Merck & Co., Amgen, and Eli Lilly all have drugs worth a combined \$20 billion in annual sales that are expected to lose patent protection by 2008.⁸

Genentech is already well-established in the biotech industry and thus has experience dealing with many of these entry barriers into the pharmaceutical industry. With its large profit base, Genentech's entry into the pharmaceutical industry and transition from inventor to marketer would require only the development of a mass market strategy on the scale of Pfizer and Johnson & Johnson.

4.2 Buyer Bargaining Power

Buyers in the pharmaceutical industry are fragmented between patients who use, physicians who prescribe, hospital boards who authorize purchases (and treatments), and pharmacists who try to optimize their stock of the drugs.¹ Individual patients have very little bargaining power because they have limited knowledge about prescription drugs and typically rely on insurance to cover medication costs and also do not buy in bulk. In the U.S. there are several organized groups that represent patient interests. For example, the Health Maintenance Organizations (HMOs) have been successful in negotiating favorable prices through "seeking price reductions for bulk purchases or threatening to switch to other suppliers".¹ Regardless, most pharmaceutical companies are focused on marketing directly to the doctors and hospital boards responsible for most bulk purchases. Additionally, buyer bargaining power is increased by both the government and health authorities such as the NPPA (National Pharmaceutical Pricing Authority), which attempts to increase buyer bargaining power by regulating local prices to help contain health care costs.¹

There is little difference between the buyer bargaining power in the pharmaceutical industry versus the biotech industry—if Genentech enters into the pharmaceutical industry, its buyers will still have about the same bargaining power. Furthermore, most drug companies are in competition with each other on a drug-by-drug basis; buyers will still be evaluating the same drugs against each other, regardless of whether Genentech shifts its focus to marketing from R&D. In short, Genentech will not be able to influence the amount of buyer bargaining power by entering into the pharmaceutical industry, but it may be able to have a stronger influence over the buyers' choices by spending more on marketing and less on R&D.

4.3 Supplier Bargaining Power

Suppliers in the pharmaceutical industry are fragmented between chemical and raw material providers, manufacturing and production plants, co-marketing partners, and a trained labor force.⁹ These suppliers do not have a strong bargaining power because many big pharmaceutical companies have their own production plants and can import cheap labor forces from foreign countries. However, small biotech companies and highly specialized university research members have become such important information suppliers to the extent that "pharma-biotech deals assign up to half of the profits and revenues to the smaller biotech partner".¹ Although small biotech's negotiation power is increasing, both biotech and

pharmaceutical companies tend to prefer a peaceful co-existence over competition, with the biotech companies providing the innovation and the pharmaceutical companies providing marketing muscle; in fact, biotechnology companies are not generally expected to turn into fully integrated pharmaceutical companies nor adopt similar business models.¹

Thus, Genentech may be ideally situated to transition into the pharmaceutical industry; it is already dealing with the suppliers of chemical and raw materials, as well as the manufacturing/production plants and the labor force. More importantly, Genentech already has a number of alliances with small biotech companies, which may reduce the bargaining power of smaller biotech companies with Genentech.

4.4 Substitutes

The biotechnology and pharmaceutical industries specialize in specific drug markets. In other words, a newly developed cancer drug would not pose a threat to an existing asthma drug. Thus, the strongest product substitutes come from the competing pharmaceutical companies' drugs that perform similar purposes. For example, Genentech's major drug, Avastin used to treat tumor angiogenesis is competing with Pfizer's Sutent, Novartis's Gleevec, and Amgen's Vectibix. GlaxoSmithKline competes with Genentech's Rituxan (a drug in treating lymphoma and rheumatoid arthritis); GSK's Tykerb threatens Herceptin (a drug in treating breast cancer); Pfizer's Macugen and Novartis's Visudyne are similar to Lucentis (a drug in treating neovascular age-related macular degeneration); and Genentech's asthma drug Xolair competes with numerous inhaled corticosteroids on the market.¹⁸

While these competing drugs are specific responses to Genentech's products, other substitutes include generic drugs, medical devices, alternative therapies, and hospitalization, which also play critical roles in the pharmaceutical industry. Generic drugs, with reduced production costs of 30-80%, have several advantages over pharmaceutical products, including government support, lower public healthcare costs, and a much faster approval rate from the FDA since generic drugs use the same active ingredients as branded drugs and so only need to prove they have the same medical effect.¹⁰ Additionally, medical devices, alternative therapies, and hospitalization, though typically less cost effective, may actually make drug intervention unnecessary and pose a lesser threat to pharmaceutical drugs. The only way Genentech may gain some new advantage over substitute products is if, following Novartis's example, Genentech begins to produce its own generic drugs—Novartis has recently emerged as one of the largest generic-drug producing companies through the global umbrella name Sandoz.¹

4.5 Rivalry

Rivalry in the pharmaceutical industry is fairly intense because the industry is relatively fragmented. The top 20 drug manufacturers control roughly 60% of the market and none control more than 9% of the

market share.¹ Manufacturers tend to emphasize quality over price, even with very similar products, and thus price rivalry is not very serious in the pharmaceutical industry.¹¹ However, as competitors try to build brand-names and maintain secure market positions, they compete intensely on product differentiation through heavy advertising, acquisitions, and innovation of blockbuster drugs. Specifically, pharmaceutical rivals can be divided into three groups based on their marketing size: big pharmaceutical companies such as Pfizer and Merck, medium-sized companies similar to Genentech such as Amgen, and the small biotech companies such as Xencor and Gilead. While the big pharma tends to control the market through the acquisition of small biotech companies (Pfizer's primary strategy) and mass marketing their products globally (Merck's new commercial model), they do not have the ability to compete with Genentech's R&D brilliance and employer reputation. On the other hand, similarly sized companies, such as Amgen, have the same competitive pipelines but lack a connection with the innovators as effective as Genentech's at the university and research institution level. Finally, small biotech companies with effective drugs still rely on third-party investors to conduct clinical trials and thus have no control over the market. Therefore, compared with its rivals, Genentech has a significant disadvantage to the big pharmaceutical companies with respect to large-scale advertising campaigns and the acquisition of small biotech companies. Nevertheless, Genentech has the reputation of being a great employer, dedicated and understanding research partner, and successful innovator.

4.6 Complements

The main complements to the pharmaceutical industry are professional healthcare providers and medical insurance companies. Through the provision of professional medical services to patients, companies can not only effectively coordinate between patients, physicians, social workers, and care managers, but also advertise to the general public and conduct clinical trials with greater ease. Cooperation with medical insurance companies also helps patients purchase the pharmaceutical products at lower costs. If Genentech should shift its focus to marketing, it would gain more influence over the complements in the industry through the use of its marketing muscle.

5 Current Strategies

Genentech maintains its position as the most successful biotech company in the world by differentiating itself from all other companies. Genentech places a much lighter emphasis on marketing and is dedicated mainly to research and development efforts, a reversal from the traditional big pharmaceutical strategies employed by Pfizer and Merck. Genentech's strategy for success involves the build-up and strengthening of its seemingly inexhaustible internal pipeline of drugs rather than the acquisition of smaller rival companies through heavy investing in research and development of its products and maintaining its highly specialized and talented work force of scientists and inventors. In the area of keeping its scientists

and employees happy, Genentech is unmatched in its industry. It has built up a solid and irresistibly unique reputation as a philanthropist, prestigious research institution, blockbuster drug producer, and a quirky employer.

5.1 Post-Doctoral Program

Genentech uses an open-minded post-doctoral program as part of its recruitment program. The program generally lasts for four years and involves current Genentech scientists training students in conducting research that is interesting for both the postdoctoral student and the company. The goal of the program is to produce a new generation of inventors and research teams and to train the prospective employees as leaders in future collaboration projects¹⁹ and bringing said scientists into the company. Such a program serves the additional purpose of increasing the company's reputation and prestige as a center of scientific research and advancement in the scientific community itself. Genentech's particular industry relies heavily on innovations coming from the university and research institution level. Although Pfizer and Amgen have programs and internships such as Amgen Scholars for college students, these programs are not designed to bring students into the companies.²⁰

5.2 GenenFUND

An admirable and heretofore unmatched advantage Genentech has to its highly independent and secretive big competitors is its willingness to collaborate. Genentech's establishment of GenenFUND is a unique and highly competitive strategy that allows the company to build relationships with small, high potential biotech companies at the earliest possible stage (before the promising startup technology or drug is eligible for licensing). GenenFUND provides the venture capital needed for startups to proceed to the next stage of development. In return, Genentech directly collaborates with the companies' projects and shares in the revenues.¹⁹ Its relationship with the most promising biotech startups only supplements the extensive network of alliances Genentech maintains across the pharmaceutical and research industries. Genentech has also exercised the highly competitive and successful strategy of singling out and allying with the most promising small biotech companies in the industry outside of its GenenFUND portfolio to further fill the company's top-heavy product pipeline.

5.3 Recent Alliances and Acquisitions

Genentech announced a surprising alliance with Seattle Genetics in a deal worth approximately \$800 M for Seattle Genetics' promising anticancer antibody, SGN-40. This is an alliance most commonly seen in the older large pharmaceutical companies and an unusually expensive and large move on the part of Genentech to buy another company's invention. Genentech plans to fund the future research, development, manufacturing, and marketing of SGN-40 and allow Seattle Genetics to keep an option for

co-promotion in the U.S. Similar alliances in the past with Biogen Idec. (Rituxan) and Immunogen (Herceptin) have created at least one blockbuster success.²¹

Genentech's strategy in mergers generally targets individual drugs and pipelines. Recently, however, the company announced the \$919 M acquisition of a small biotech rival, Tanox.²¹ Genentech's first buyout of an entire biotech company is designed to immediately streamline the previously three-way partnership between Genentech, Tanox, and Novartis for the production of Xolair, an allergic asthma therapeutic and may signal a change to Genentech's acquisition strategy.

5.4 Marketing

Genentech employs a very small marketing force of about 500 people²² and currently invests 19% of expenditures in marketing, general, and administrative expenses.²³ Marketing relies heavily on the education of specific specialists for each drug rather than the mass-market approach biggest pharmaceuticals use to attack whole hospitals. This specialized strategy allows Genentech representatives to talk to individual specialists for an hour at a time, compared to the three minutes Pfizer reps usually get with a roomful of doctors. Although revenues are less than they could be, profits are high. Each product division has its own marketing team.²² This marketing approach reflects Genentech's highly specific drugs, which tend to target specific tumors, cancers, and diseases and are highly effective in limited markets (think specific antibiotics for specific bacteria infections). Success with this specialized sales team strategy has led to increased investment in the marketing department.

5.5 Research and Development

In 2003, Genentech spent 24% of its expenditures on R&D. It has since been reduced to a more sustainable 21% in 2007.²³ The company has a strong reputation and rate of success as the leading innovator in the pharmaceutical industry. The key to its current and previous success is its ability to thus turn out new prospective drugs on a wide scale every quarter. For example, at least three other breast cancer trials were underway when Avastin was awaiting FDA approval. The company's self-proclaimed goal is to produce and sustain a new line of blockbusters every year to avoid vulnerability to expiring patents.¹⁹ R&D plays a crucial role to Genentech's continued success, especially in the race to outrun Pfizer, Amgen, and other competitors that are dipping their resources into the specialized, targeted cancer drugs that have been Genentech's defining blockbusters for decades.

5.6 Attractive Employee Packages

Genentech understands perfectly that the basis for the continued success of its pipeline and the company's success rests on the brilliant researchers and scientists who develop the specialized and incredibly effective drugs that set Genentech apart from the industry. Genentech was ranked #5 in 2008

Fortune's Best Employers and #1 in its industry as the Most Admired Company and distinguishes itself as one of the only companies in the commercial industry to understand the value of research both to its lineup of future products and to its most valuable minds. As a result, Genentech researchers generally spend around 20% of their work week on their own individual projects which Genentech also funds.²² The company also subsidizes greener travel to work, pays for gym membership, keeps a sushi station in its cafeteria, and keeps morale high with events such as Halloween costume contests, and periodically organizes grand rock/pop concerts for its employees with bands including the Foo Fighters, the Eagles, the Black Eyed Peas, and the legendary Bob Dylan.²² Combined with daycare and a generous health package, candidates find it hard to resist the attractive perks and veterans have difficulty leaving the open, friendly, healthy, and fun research environment. Competitors such as Pfizer, Amgen, Merck, and the smaller biotech companies have been unable to replicate the lavishly unique Genentech culture. Pfizer, for example, emphasizes tolerance rather than fun and take great pains to ensure employees of all genders, races, and sexual orientations feel comfortable at work.²⁰ This strategy appears to be mainly an attempt to avoid discrimination lawsuits and is far less effective than Genentech's unmatched motto of have tons of fun at work while curing cancer.

6 Genentech's Future

There is no question that success in the pharmaceutical and biotechnology industries depends on the ability to produce blockbuster drugs, which is "often quoted as the only viable way to meet high growth expectations" because of the high returns on blockbuster drugs relative to returns on lower value drugs.¹ While it would seem that Genentech is no different from other companies in the biotech industry, and that its continued success hinges on its ability to develop and successfully market blockbuster drugs, Genentech is in a highly unique position. Genentech's success in the long run depends almost entirely on the capabilities of its research team and the capacity to innovate the specialized, highly-effective drugs that have become Genentech's trademark. Genentech's CEO, Arthur Levinson, who recognizes this as well, has been quoted as saying that "continued long-term growth will depend upon our ability to bring new molecules to the market".²⁵

In other words, even though one of Genentech's long-term goals is to create and produce blockbusters,²⁵ this may not be the best strategy for them. Genentech's strength actually lies in their ability to develop highly specialized drugs that are intended to target selective markets rather than the masses, and as such, their current marketing strategy makes the most use of educating specialists rather than the entire profession of general doctors. This is a complete contrast to the large pharmaceutical companies (like Pfizer) who focus on marketing in favor of inventing, and thus rely on marketing one-size-fits-all drugs (like Lipitor). Genentech should avoid succumbing to big pharma's strategy of mass marketing because

their drugs are not intended for the masses. Furthermore, even though Genentech's highly touted specialty drugs do earn less revenue than Lipitor and Viagra, their profits still remain relatively high.

Genentech should further distinguish itself in the pharmaceutical and biotech industries by adopting the R&D collaborative strategy known as "out-licensing", which involves licensing drugs to partner companies who would take charge of the drug marketing. Although most large pharmaceutical companies avoid out-licensing because they "fear that selling products will leave gaping holes in their revenues",¹ out-licensing would actually benefit Genentech; it would reduce Genentech's risks because of the smaller investment/resource requirement *and* allow them to focus even more on the innovation side of the biotech industry (their strength!), while leaving other companies to worry about the marketing side. In fact, Genentech already seems to be planning to move in the direction of out-licensing—one of Genentech's stated long-term goals is actually to "out-license technology platforms and profit from royalty payments".²⁵

It is unrealistic to expect that Genentech can rely solely on out-licensing, so they also need their own internal strategy to increase their success in specialized marketing. One way to increase the effectiveness of their marketing is to reduce their staff of 500 experts to 50 experts responsible for educating the marketers, who will be less expensive to hire, about Genentech's newest drug(s)—this is essentially a more targeted version of Pfizer's strategy. Another possibility is for Genentech to move away from trying to sell their drugs "doctor-by-doctor", and instead hold educational seminars on their research, technology, and developments open even to the public at their campus, nearby hospitals, universities, etc. Advertisement for these seminars could be as simple as mass e-mails to specialists in the pertinent field and fliers near the event site. Finally, Genentech should try to exercise stronger patent protection in the future as many of the blockbuster drugs on market can be granted five year extensions on their original patents, thus raking in billions of dollars more for their patent-holders to reinvest in future ventures such as research and development.

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