

Commentary

A capital market's view on Industrial Biotechnology – proper valuation is the key for picking the right investment opportunities in stormy times

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Introduction

Industrial biotechnology, also known as white biotechnology, is considered to be a revolutionary biotechnology field beside red and green biotechnology. After red (medicine) and green (agriculture), white biotechnology is now gaining momentum. With numerous applications e.g. in biocatalysis and fermentation technology, white biotech companies are able to produce – often from biomass out of agricultural products - bio-based chemicals (like vitamins, amino acids or enzymes for textile finishing and the detergent industry), biomaterials (like biodegradable plastics for packaging or medical applications) and biofuels. Biotechnological syntheses are supposed to revolutionize many classical chemical synthetic routes for established chemicals and will outpace those by higher cost-efficiency, saving feedstock and energy resources and offering valuable benefits to the environment by lower or even no greenhouse gas emissions.

The Capital Market's Perception – White versus Red

Whereas Red Biotechnology is already accepted by the capital markets and dominates by far the total number of biotechnology companies, there are only few dedicated white biotech companies. Venture capitalists have preferred red opportunities, while white biotechnology used to have a lower attendance with capital markets and is still more driven by big chemical corpora-

tions than an agile start-up scene. The focus of red biotech is on new drugs with a relatively easy to estimate market potential and share, while industrial biotechnology mainly develops new process routes to already known drugs or chemicals. These characteristics require more knowledge of the industry and often contribute to the lack of investors' attendance of white versus red biotechnology. In comparison to red, white biotech processes or products usually serve a broader range of applications and should thus diversify the investor's risks accordingly. However, many venture capitalists still are not aware of the chances or even seem to shy away from taking the white opportunity, presumably because of difficulties in reasonably estimating the scope of market potential and market share that could be achieved with a single process or product. However, the impact of white biotechnology can be found in most future oriented statements of big chemical companies and is expected to drive future chemicals earnings significantly. Furthermore, the number of spin-offs from universities and start-ups with a dedication on white biotech is expected to pick up momentum. Investors conferences are held with dedication on white biotech companies and investors are more and more looking for this emerging sector. All this makes it obvious that now could be the time to look for opportunities for paying-off investments.

The adequate valuation of investment opportunities in growth companies within industrial biotechnology is, though, often

seen as a challenge by market participants. Principally, several techniques are available for valuing white biotech companies: The DCF method, the Multiples valuation, Venture Capital method, the Portfolio or Sum-Of-The-Parts approach or option based valuation techniques like the Real Option valuation. Admittedly, it can be tricky to put a price tag on biotechnology companies that often offer little more than the promise of success in the future. Just because someone in the lab cries "Eureka!", that doesn't necessarily mean that a revolutionary process or enzyme has been found. In the biotech sector, it can take many years to determine whether all the effort will translate into returns for a company. Red biotechnology is a forward-looking, cash-hungry industry. Sometimes, it takes far beyond a billion of Euros and many years to develop a drug which then might not come to market. So biotech and pharma companies are constantly looking to all areas of the finance industry for funding. Their assets are often highly intangible (intellectual property) and, because they are so forward-looking, there is little current concrete information available for the investor other than retrospective insights into previous projects. It is a high-risk business, but one which can give massive returns. In comparison to red, white biotech investments often afford lower initial investments and offer lower risk due to a diversification among applications and industries. Two of the characteristics of white biotech, to which investors are giving increasing attention, are the typically much shorter time span from idea to market – 3 to 5 years, compared to 10-12 years for a biomedical product – and less regulatory requirements. The accumulated market potential, market shares and derived free cash flows are, however, more complex compared to red biotech projects and can require the engagement of several industry specialists. Industry teams that are engaged in the valuation can comprise biotechnology specialist, chemicals and consumer good or medical applications expertise. Despite the complexity of deriving a value from white biotechnology projects, the business models are often highly promising and many white investment opportunities, that are currently undiscovered, wait to be caught. For picking the right alternative, investors need to be able to evaluate such companies properly in order to make proper business decisions about their

investment. The credit crunch increases the need for the proper valuation approach in general, but in particular for the high-risk biotechnology sector: Due to the credit crunch, the European Biopharmaceutical Enterprises trade association reckons that 20% of all European biotech companies could go out of business in the next six to 18 months (Warmington, 2009). Comparatively, this could mean another chance for white biotechnology to increase attention due to eventually more stable business models and broader application ranges.

A Glimpse into the Future of White Biotechnology

Although reality could not come up with the forecasted impacts of white biotech on traditional chemical production processes, it is more a question of when but if the revolution will happen (EuropaBio, 2003). The development and use of Industrial Biotechnology is therefore essential to the future competitiveness of European industry and provides a sound technological base for the sustainable society of the future.

In the long run, it is undoubted that an increasing number of chemicals and materials will be produced using biotechnology in one or more of the processing steps. Biotechnological processes will be used to produce chemicals and materials which are hard or impossible to produce or – more frequently – make existing products in a more efficient way. Biotechnology will allow increasingly eco-efficient use of renewable resources as industrial raw materials. Rural bio-refineries can replace port-based oil refineries wherever it is economically feasible. Industrial biotechnology will enable a range of industries to manufacture products in an economically and environmentally sustainable way.

Furthermore, biomass-derived energy based on biotechnology is expected to account for an increasing share of European energy consumption. European industry will be innovative and competitive, with sustained cooperation and support between the research community, industry, agriculture and civil society. Green biotechnology will make a substantial contribution to the efficient production of biomass raw materials and green and white biotechnology will thus combine to an integrated value chain. The prospects will, however, only become

reality with the appropriate enabling political and economical environment stimulating research and innovation, entrepreneurship, product approval and market development. As long as the cost of fossil fuel and feedstock for key chemicals have not passed their respective critical thresholds, industrial biotechnology and its products will need political support and funding, particularly in the energy and bulk-chemicals sectors. Other uses of industrial biotechnology, however, such as biocatalytic conversions of fine and specialty chemicals and the manufacture of high-value products, such as nutraceuticals, cosmeceuticals and performance chemicals offer dynamic growth opportunities both for established chemical industries, as well as emerging entrepreneurial enterprises. Attracting venture capital (VC) will remain a challenge in the short and medium term particularly for white biotech companies due to VC firms shying away from cyclical businesses and risks that have not been made transparent sufficiently by the biotech's management. Furthermore, VC firms need a vision on the appropriate exit pathways. They often stay onboard for about four to eight years and look for IPOs or trade sale to big chemicals companies. In comparison to the red alternative, there is little evidence on the IPO or M&A history with respect to industrial biotech targets.

REFERENCES

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