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AstraZeneca – Research & Development (R&D) transforming the business

Why we now like AstraZeneca

1. Increased investment into Research and Development
2. Dividend maintenance has supported the share price
3. Innovation is creating a pipeline of significant potential

After many years of being decidedly gloomy about AstraZeneca's prospects, and attractions as an investment, we have become much more optimistic. Eighteen months ago, we were concerned that consensus forecasts for 2016/2017 earnings were far too high as many analysts underestimated the profit contribution from blockbuster drugs such as Crestor which would be lost as patents expired. Over the following year, these forecasts have come down by ~30%, to levels much closer to our expectations. However, we still remained concerned as the former management team's strategy of continuous cost cutting seemed only to be slowing the decline towards an inevitable and unpleasant conclusion: a pharmaceutical company with little innovative medicine and a much weakened ability to get any new medicine to patients.

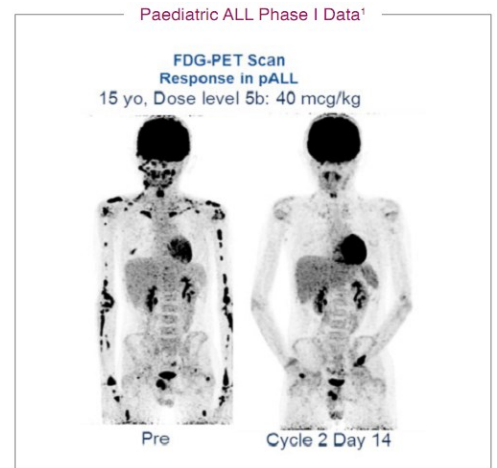
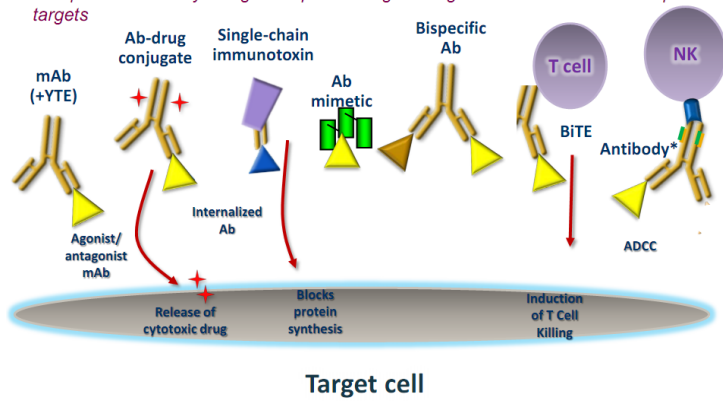
Last year, the company announced a new strategy: reversing the cost cutting and investing more aggressively in the business, both in terms of research but also in marketing investment. This strategy was undoubtedly the right thing to do, but ran the risk that costs would run ahead of any revenue gains (i.e. more profit downgrades to come) and that the research efforts were going to have to start delivering innovative, effective medicine and getting this medicine to market. AstraZeneca's track record here is mediocre at best. Our view was that the company may cut the dividend to free up the resources to pursue the strategy effectively and that there was little evidence of much coming out of the pipeline. We remained negative.

Since then, two things have changed. Management have committed to maintaining the dividend. We remain unconvinced that this is the most sensible thing to be doing with the company's resources, but it is serving to support the current share price. Much more significantly, there is tangible evidence of the research efforts producing not just innovative medicine, but a lot of innovative medicine. At the full year results presentation, the company confirmed that they now have 11 new medicines in late stage trials, with a further 4 or 5 to start in 2014 and a further 19 for which late stage (phase 3) trials could begin in the next 2 years. In addition, one of the most exciting prospects in Immunotherapy is being accelerated directly from phase 1 to phase 3 trial this year. To emphasise the point about R&D productivity, the company announced that research updates will now be provided to investors every quarter rather than every half year.

Much of the R&D transformation is coming from Medimmune, AstraZeneca's biological medicine division, which now represents 50% of the pipeline. Medimmune provided an update to investors in November last year. The company has developed a wide array of antibody technologies with which to interact with cells: this could be to activate a process, deactivate a process, amplify a process, deliver a drug to a precise location or even deliver a toxin to a precise location. One of the most remarkable examples is *moxetumomab pasudotox* (currently in trials for leukaemia). This "armed antibody" seeks out a feature found on the cancer cell to which it binds before delivering a toxin directly into the cancer cell itself. The image overleaf on the right shows the effects this treatment has had on a 15 year old with acute lymphoblastic leukaemia.

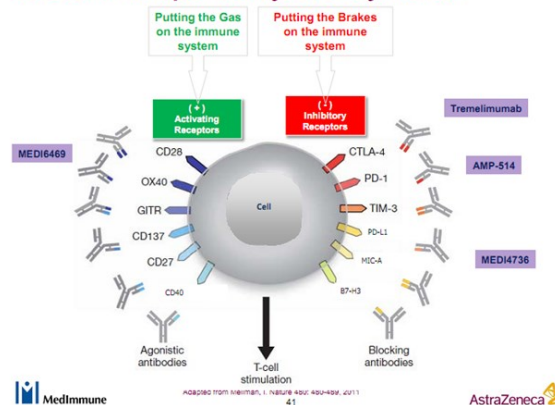
MedImmune Antibody Technologies

Competitive antibody design and protein engineering toolkit lets us tackle multiple targets



It is possibly in Immuno-oncology where the prospects are most interesting. This relatively new area of medicine seeks to modulate the body's immune system to fight cancers or to improve the effectiveness of existing cancer treatments. Several companies are working in this area, with some treatments already on the market. However, it increasingly appears that the best approach to treatment is through a combination of therapies which interact with several of the different pathways of immune response. AstraZeneca appears to have one of the most comprehensive arrays of treatments with trials ongoing in PD-1, PD-L1, CTLA-4 and OX40, as well as having earlier stage research focused on most of the other identified pathways. If successful, this could be a huge category of medicine.

Critical Checkpoints Hijacked by Cancer



Although it looks likely that AstraZeneca's profits are going to make limited progress over the next three years, the future prospects for the business are being transformed. In three years' time, AstraZeneca could have one of the largest and most exciting pipelines of new products in the industry: an amazing transformation of the company's prospects. With a strong balance sheet and a 4.5% dividend, the potential risks and rewards to shareholders look decidedly more attractive than they have for many years.

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