



MEDIUS DEAL WATCH

March 2015

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The highest value deals in March were again dominated by company acquisitions but only one mega merger, Abbvie's acquisition of Pharmacyclics. The price of \$21bn was regarded by many commentators as very high. There were accusations that Abbvie had overpaid. The reason was not the share price premium, which at around 60% versus the share price in early February before press speculation about the sale of the company is not exceptional. According to Bloomberg, the average share price premium last year for deals over \$1bn was 57%. Secondly, it could be argued the sales multiple of 43 was excessive. In comparison to the other company and product acquisition deals this month it is the highest (see Table 1). However Pharmacyclics 2014 sales of \$492m were up from \$13m the year before and the first full year of Imbruvica, a BTK inhibitor for haematological cancers. Peak sales according to Abbvie could reach \$7bn in the US and more than double that worldwide. It was this reason that Abbvie used to justify the price, together with the belief that Imbruvica can be developed with other Abbvie oncology products to make new anti-cancer cocktail products.

Money can't buy you love, but it improves your bargaining position

(Christopher Marlowe, English playwright and poet 1564 –1593)

The most compelling reason for the accusation that Abbvie overpaid is the fact that the \$21bn price is higher than J&J was prepared to offer. Imbruvica is co-commercialised by J&J with Pharmacyclics on a global profit share arrangement under a deal agreed in December 2011.



At that time Imbruvica was in phase 2 and J&J paid \$150m upfront and up to \$825m in milestones. So the question being asked is how could Abbvie justify the \$21bn price when J&J could not? J&J was allegedly bidding along with Novartis. J&J knows everything about the product having worked with it for four years. J&J probably has the best estimate of peak sales and almost certainly would be able to achieve cost savings from sales and marketing synergies with its existing marketing operations. So, in principle, J&J would be in the best position to pay the highest price. So why did Abbvie outbid J&J? We suspect that the price was being driven up by the competition between the three big pharma bidders but Abbvie was desperate to get the deal because of the risk to future growth arising from the Humira patent expiry in 2016. Humira sales of \$12.5bn in 2014 represent over 60% of the company's total. The acquisition of Shire was intended to fill the potential sales and profit gap. When that fell through, because of the change in the US tax rules, Abbvie needed Plan B. Pharmacyclics filled the bill.

Table 1: Company and product acquisition deals in March

Target	Acquirer	Price \$bn	Sales multiple	Share price premium
Pharmacyclics	Abbvie	21.0	43	60%
Auspex	Teva	3.5	No sales	42%
Ikaria	Mallinckrodt	2.3	15	NA
Cordis (business unit)	Cardinal Health	1.9	2.5	NR
Covis (asset)	Concordia	1.2	8.2	NR
Hyperion	Horizon	1.1	9.6	35%
Zogenix (product)	Pernix	0.4	33 / 9*	NR
Cellular Dynamics	Fujifilm	0.3	18	108%
SuppreMol	Baxter	0.2	No sales	NA
Alkermes (asset)	Recro	0.2	4 / 1*	NR

* Upfront payment as multiple of sales (as the total price includes substantial commercial milestones)
NA, not available; NR, not relevant

Nearly half of the deals in Table 2 this month are company or asset acquisitions. The sales multiples vary enormously from 43 for Pharmacyclics to 2.5 for Cordis (Table 1). The variation is explained by the growth and profitability of the company / products and the perceived value of the pipeline plus synergy benefits in the case of company acquisitions. For example, Horizon's sales multiple of 9.6 for the acquisition of Hyperion could be considered high even for a company with a gross margin of nearly 90%. But, Hyperion has \$70m in operating costs and Horizon expects to make synergy savings of \$50m. In addition the sales grew last year by 170% so the reason for the high multiple becomes clear. Unfortunately the lack of public information about most of the transactions prevents any meaningful analysis of many of the deals.

Nowadays people know the price of everything and the value of nothing

(Oscar Wilde, Irish author, playwright and poet 1854-1900)

One consequence of the high number and price of pharmaceutical mergers is that there is now speculation that the bubble is about to burst. In 2014 according to Ernst and Young's report 'Firepower fireworks' the aggregate value of biopharma deals in 2014 was over \$200bn compared to around \$80bn the year before. Over the past few years, the availability of cheap credit and large cash reserves plus special factors such as tax inversions were key drivers of M&A. Tax inversions have become much more difficult and valuations have been rising on the back of rising stock markets and high value deals.



In addition smaller companies, mainly in the US, have been able to make an IPO. Nevertheless, big pharma has deep pockets and need to supplement their product portfolios and pipelines so for the time being the merger bandwagon is expected to keep rolling. For example, this month Teva paid \$3.5bn to acquire a loss-making company, Auspex Pharmaceuticals, with a pipeline of CNS products including one in phase 3. Two days' later Teva acquired four oncology development programmes (the most advanced in phase 1 / 2) from Ignyta for \$42m. These are the first acquisitions since the appointment of Teva's new CEO and continues the trend of many generic companies to shift focus away from generics to branded products. Another example this month is Actavis who plan to divest to Amneal its generic products in Australia whilst retaining the branded products.

Apart from the company and product acquisitions, there was a noteworthy corporate transaction by Lilly who has set up a \$456m+ strategic alliance with the Chinese company Innovent Biologics. The companies will collaborate to develop three anti-cancer drugs, one Mab from Lilly and a Mab and an additional molecule from Innovent. Lilly also has the rights to develop and commercialise three immuno-oncology molecules outside China. The commercialisation rights are split with co-marketing in China and Lilly exclusively in the rest of the world. Lilly's expedition to the Far East also generated another deal this month, the licence of a phase 1 BTK inhibitor from the Korean company Hanmi for up to \$690m. The Far East is no longer just a manufacturer of active ingredients and generics but is rapidly becoming a source of novel molecules for biotech and big pharma companies such as Merck & Co and Lilly.

Genius is 1% inspiration and 99% perspiration

(Thomas Edison, American inventor and businessman 1847-1931)

During 2014 nearly half of the deals reported in Deal Watch were in the oncology sector. This month is not much different with oncology accounting for one third of the deals, which is hardly surprising given the high level of funding available for oncology research and the increasing success of new therapies that can command high prices. Last month we reported on the immuno-oncology deal love fest as companies seek to enter a predicted \$35bn market.



Chimeric antigen receptor (CAR)-T cell therapies are the hot topic in oncology. A report from Evaluate this month on CAR-T therapies shows the massive increase in market capitalisation of quoted biotech companies working in the area, such as Kite Pharma. The report urges caution with potential issues relating to toxicity, IP ownership and the very high cost of making autologous cell therapies. Also Evaluate reports a cautious approach by big pharma. Novartis, J&J and Pfizer (via a deal with Cellectis) are in the go-kart race but other companies such as Merck & Co, BMS and Roche are focussed on checkpoint inhibitors. But, the race goes on and this month Merck Serono has entered the race with a \$941m deal with Intrexon to exclusively access its engineering technologies for T-cells which utilise MD Anderson's Sleeping Beauty technology licensed by Intrexon and Ziopharm in January for over \$100m. The high level of interest in cell therapies generally may have been one reason why Fujifilm acquired Cellular Dynamics for \$307m at an eye watering share price premium of 108%. Fujifilm expects to achieve significant synergies.

Checkpoint inhibitors are not being left behind with two deals this month, one by Blueprint Ventures and the other by Checkpoint Therapeutics but neither are with big pharma companies who have either got their own programmes or have moved on. One such example is Novartis which has CAR-T and checkpoint inhibitor programmes and has now added Aduro's STING (Stimulator of Interferon Genes) technology as an additional string to its bow. Aduro has a number of preclinical small molecule cyclic dinucleotides that target the STING signalling pathway to generate an immune response to a broader range of tumours than CAR-T. The upfront payment of \$250m including \$50m equity at 33% of the total deal value of \$750m is very high for a preclinical licence.

The alternative to a licence with a high upfront is an option agreement. This is what BMS has secured with Bavarian Nordic's cancer vaccine targeting PSA in phase 3 for treatment of metastatic castration-resistant prostate cancer. The upfront of \$60m represents only 6% of the \$975m deal value and the deal is heavily performance related. Excluding the upfront, up to 32% of the milestones are dependent on overall survival exceeding phase 2 results and 69% are sales related. Bavarian Nordic will supply product and receive double digit royalties. BMS can exercise the option following the delivery of the phase 3 results expected in two years' time. Fortunately, at end 2014 Bavarian Nordic was profitable and had over \$175m in cash and an R&D cost of around \$85m per year.

One of Bavarian Nordic's sites is in Martinsried, the biotech cluster near Munich. In the same area is Morphosys which has been less fortunate this month because of the termination of its \$818m agreement with Celgene to develop a Mab for treatment of multiple myeloma. Morphosys' share price fell by over 20%. This is an over-reaction as Morphosys has been one of the most successful biotech companies in Europe with multiple deals with Roche, Novartis and J&J. It is also ironic that because of the increasingly complex revenue recognition rules generated by the accountancy profession, the financial effect of the termination of the agreement will be to increase Morphosys' 2015 revenue and profit (EBIT up by over \$30m)!

Table 2: March Valued Deals over \$100m

Licensor/Licensee Acquired/Acquirer	Product/Technology	Deal type*	Headline \$m
Pharmacyclics / Abbvie	Marketed BTK inhibitor for haematological cancers + pipeline incl. 3 products in clinic	Company acquisition	21,000
Auspex / Teva	Phase 3 product for Huntington's Chorea + deuterium technology platform	Company acquisition	3,500
Ikaria / Mallinckrodt	Marketed critical care treatments incl. respiratory for neonatals	Company acquisition	2,300
Cordis (J&J) / Cardinal Health	J&J divest subsidiary marketing vascular devices	Company acquisition	1,944
Covis / Concordia	18 marketed brands and generics in US acquired by Canadian company	Asset acquisition	1,200
Hyperion / Horizon	2 marketed urea cycle disorder orphan drugs in the US	Company acquisition	1,100
Bavarian Nordic / BMS	Phase 3 immuno-oncology treatment for prostate cancer	Option to license and commercialise	975
Intrexon / Merck Serono	CAR-T immuno-oncology platform for identifying and developing target molecules	Licence and collaboration + option	941
AstraZeneca / Daiichi Sankyo	Marketed Movantik (naloxegol) for opioid induced constipation	Co-commercialisation US	825
Aduro / Novartis	Preclinical cancer immunotherapies targeting the STING (Stimulator of Interferon Genes) pathway	Licence and collaboration	750
Hanmi / Eli Lilly	Phase 1 BTK inhibitor for treatment of lupus	Licence and collaboration**	690
Innovent / Eli Lilly	Development and commercialisation with Chinese company 3 preclinical oncology drugs†	Strategic alliance	456+
Zogenix / Pernix	US marketed hydrocodone (Zohydro ER) for treatment of pain	Acquisition product	384
Cellular Dynamics / Fujifilm	US-based developer and manufacturer of human cells	Company acquisition	307
Blueprint / Alexion	Kinase inhibitor platform for discovery of molecules for treatment of rare diseases	Strategic collaboration China and rest of world	265
Immunogen / Takeda	Antibody-drug conjugate (ADC) technology to develop 2 anticancer products + option on 3 rd	Licence and collaboration + option	230
SuppreMol / Baxter	Biologic immuno-regulatory pipeline with phase 2 lead product for treatment of ITP and lupus	Company acquisition	225
Athersys / Chugai	Phase 2 stem cell therapy for treatment of ischaemic stroke	Licence and collaboration Japan	205
Alkermes / Recro	Purchase of US factory and associated products and pipeline	Asset acquisition	170
Checkpoint Therapeutics / TG	Human anti-PD-L1 and anti-GITR antibody preclinical programmes for haematological cancers	Licence and collaboration	165
Brighthouse Ventures/ Islet Sciences	Phase 2b SGLT2 inhibitor remogliflozin for treatment of diabetes	Licence and collaboration***	117
Sorrento / Nantcell	Discovery and development of anticancer products incl. CAR-T and checkpoint inhibitors PD-1 and PD-L1	Licence and collaboration	110
Transtech / Calithera	Portfolio of hexokinase II inhibitors for treatment of cancer	Licence and collaboration	109
Astellas / Vical	Preclinical antifungal ASP2397	Licence and collaboration	100

* Licence and collaboration means exclusive global rights to develop and commercialise unless otherwise stated

** Global rights excluding China, Hong Kong, Taiwan and Korea

*** Global rights excluding Latin America, China, Korea, Taiwan and Japan

† Innovent to receive a total upfront payment of \$56m and potential milestones of over \$400m for one of the molecules, a preclinical immuno-oncology molecule



Roger Davies works with Medius as a consultant specialising in valuations, deal structuring and negotiating late stage licensing, commercialisation and M&A deals.

He is the former Chairman of the UK Pharmaceutical Licensing Group, the professional association of licensing and business development executives, and is the Finance module leader for the healthcare Business Development and Licensing MSc at the University of Manchester.

Anyone who lives within their means suffers from a lack of imagination (Oscar Wilde)

The Morphosys story highlights the uncertainty of funding for European biotech companies. Sir John Bell, Regius Professor of Medicine at Oxford University and a non-executive director of Immunocore has criticised the City of London for failing to provide financial support to life science companies. This month Evgen Pharma had to withdraw its IPO in London because of the poor response by investors. In contrast, IPOs and venture rounds continue unabated in the US. According to Burrill there were 101 life science IPOs in the US last year compared to 26 in other markets. This month Semma Therapeutics raised \$44m from various funds to develop treatments for Type 1 diabetes as well as signing a deal with Novartis. While the life science IPO appetite in Europe is weak, the big pharma companies and their venture funds continue to support innovation by investing in biotech companies. This month saw GSK invest \$25m, J&J \$10m and the UK Government \$22m into the Dementia Discovery fund, a joint initiative also including Lilly, Biogen and Pfizer to research treatments for Alzheimer's.

At the other end of the spectrum from bioscience innovation are commercial deals and two this month are interesting. One is the AstraZeneca/Daiichi Sankyo co-commercialisation of naloxegol for opioid induced constipation in the US. With a \$220m upfront and \$625m in sales-related payments, this is one of the largest headline values for a co-promotion deal. The other deal of interest is the re-emergence of EUSA Pharma with products acquired from Jazz Pharmaceuticals. This deal is interesting because Jazz acquired the original EUSA Pharma company in 2012 for up to \$700m and now the original founder and CEO, Bryan Morton together with an original investor, Essex Woodlands, has bought back products worth \$27m and the EUSA Pharma name from Jazz for an undisclosed amount. The bad news is that the proceeds of the sale will not have made much of a dent in Jazz's \$1.3bn of debt. The good news is that the deal demonstrates there are marketed products available for acquisition by smaller companies.

medius
associates

Tel: +44 (0) 20 8654 6040
dealwatch@medius-associates.com

*“IPOs and venture rounds
continue unabated in the US.”*

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