
Pharmaceutical Innovation Index 2019

**White paper:
Celebrating the most innovative
companies in pharma**

Pharmaceutical Innovation Index 2019 Top 10:

The Pharmaceutical Innovation Index ranks the top 30 pharmaceutical companies by their ability to bring products from early phase to market, and to commercialize them successfully, utilizing a range of clinical, regulatory and commercial metrics

2019	Companies	2018 Position	Change from 2018
1	Gilead	2	+1
2	AbbVie	5	+3
3	Eli Lilly	13	+10
4	Pfizer	9	+5
5	Merck & Co.	7	+2
6	Sanofi	15	+9
7	Novo Nordisk	10	+3
8	Roche	8	+0
9	Novartis	3	-6
10	GSK	13	+3

To explore more fully which companies occupy Pharmaceutical Innovation Index (PII) positions 11-30, please visit <http://ideapharma.com/pii>



Overview

2018 marked an important year in Pharma with key industry-shaping events. We witnessed a record high number of novel drug approvals, suggesting an industry that is boosting productivity while improving collaborations with regulators to progress therapies through the regulatory finish line. But, if you take a closer look into last year's novel drug approvals you'll notice a good proportion coming from small- to mid-sized biotechs (39 of the 59 approvals were from companies which are outside the top 30, and more than half of the top 30 did not achieve an approval in 2018), which begs the question: Are the smaller players tipping the scale on productivity? Well maybe, but some of the big pharma companies were rather busy last year. Pfizer managed to push 4 new oncology drugs through approval, marking the highest number of novel drug approvals in the industry, while other big pharma players, including Merck, BMS, AstraZeneca and Roche, were entangled in an immuno-oncology (IO) race, marking 2018 as a rich year in IO developments with numerous key trial data readouts including in the highly sought-after lung cancer market. Other big topics that dominated the industry last year included drug pricing, China and its sheer significance as a key growth market, a new era of digital innovation sweeping Pharma, and of course Brexit.

2018 marked a record year in the number of novel drugs approved by the FDA

A change in perception has taken place in the industry, where the FDA is now increasingly becoming perceived as an “enabler”, and as a result we are seeing a significant shift that has enabled more innovative drugs to cross the finish line, as companies leverage the various channels that the agency has put in place to accelerate the review and approval process. Last year, a record high number of 59 novel drugs were approved by the FDA, including a number of biologics.

Progress was made in infectious diseases, with a first-in-class HIV drug approved for patients who have failed on a previous treatment, a single dose influenza treatment, two new malaria treatments, as well as the first ever drug to treat smallpox, approved as a measure of response to any potential bioterror attack.

In neurological disorders, three new drugs in new classes were approved to treat patients suffering with migraines, as well as the first approved therapy to treat Multiple Sclerosis in children.

A considerable proportion of the approvals came from oncology, where a new promising treatment was approved for patients with prostate cancer, a new treatment for patients with ALK positive NSCLC, two previously-approved melanoma drugs for use together in the treatment of patients with a highly aggressive form of thyroid cancer, and a stream of new approvals for treatment of patients with hematologic malignancies.

Overall, not surprisingly, over half of the approvals (34 drugs) were indicated to treat patients with rare diseases. This of course means that these drugs will likely land in the market with a hefty price tag, which will continue to fuel the discussions around pharma drug pricing.



Biotechs have become a significant commercial player

If you scroll through the list of last year's novel drug approvals you will quickly notice that a good proportion of them originated from small-mid size biotechs. A high proportion of these drugs are indicated for rare and orphan diseases. This is intuitive, as these organizations have been able to focus on developing therapies for diseases affecting small patient populations. This strategy helps gain rapid advantage in niche markets with high priced therapies. The strategy is widespread in the world of biotechs, where small, relatively quick studies lead to big opportunities in untapped markets with low competitive pressure. However, there is commercialization risk for a number of the companies that have no prior experience with launching a drug, and with no prior experience in commercialization they will need to move swiftly to navigate the real world challenges of the market.

Companies that fell out of the Top 10

AstraZeneca was hit the hardest in this year's PII, dropping 11 places from the top spot it held in 2018. This was heavily driven by a string of phase III trial failures. In oncology, its immunoncology (IO) combination durvalumab + tremelimumab came up short in improving overall survival in 3rd line lung cancer patients who had progressed following 2 previous therapies and who did not express PD-L1. Additionally, the company reported that the combination had failed to beat the standard of care chemotherapy at improving overall survival in patients with previously untreated stage IV NSCLC in their key, highly anticipated MYSTIC trial. Another key phase III trial failure was marked at the end of last year for both durvalumab solo and the IO combination, where the regimens failed to beat SoC chemotherapy in extending overall survival for patients with recurrent or metastatic head and neck squamous cell carcinoma who progressed following platinum-based chemo, regardless of their PD-L1 status. Another setback for AZ was marked by its drug selumetinib which failed to meet its primary endpoint in a phase III trial in thyroid cancer. Outside of Oncology, AstraZeneca was hit with other trial failures including two phase III failures Fasentra in patients with COPD, its lupus drug anifrolumab failed in phase III, and the Alzheimer's phase III trial of lanabecestat was halted due to futility.

Johnson & Johnson dropped 8 spots from the number 3 spot they held in last year's PII. They scored positively with their approval of Erleada, a promising novel drug for the treatment of patients with non-metastatic castration-resistant prostate cancer. However, the company scored modestly on its 3 and 5 year freshness index scores, which measure the proportion of revenue that the company generated from drugs approved in the past 3 and 5 years, respectively. Additional setbacks that contributed to bringing J&J's score down included, the announcement that Xarelto had failed a phase III, where it came short of statistical significance in demonstrating it could beat placebo in preventing blood clots in high-risk cancer patients. Earlier in the year, its promising drug Imbruvica came up short in demonstrating benefit in event free survival for its combination with chemotherapy over the standard of care alone in a phase III study in patients with previously untreated diffuse large B-cell lymphoma (DLBCL), an aggressive form of non-Hodgkin lymphoma (NHL). Finally, during the first half of last year, the company announced its decision to abandon efforts of combining its oncology drug Darzalex



with the class of PD-1/PD-L1 after the combination with Tecentriq failed to show benefit over Tecentriq alone in previously treated NSCLC patients.

Finally, Bristol-Myers Squibb was knocked off the top 10 list in this year's PII, dropping 12 spots from the number 6 spot they held in last year's PII. Last year the company did not manage to push any novel drug therapies through regulatory approval. Additionally, with significant setbacks in both NSCLC as well as 2 failed trials in SCLC last year, the company has raised increasing concerns over the fate of its IO therapies in the lung cancer space.



Company performance, Top 10:

The Pharmaceutical Innovation Index (PII), now in its ninth year, provides a systematic and objective assessment of how well the top 30 companies perform in successfully bringing meaningful new medicines to market and commercialising them.

GILEAD [1]

Gilead took the top spot for the first time, having gained one place each year from 2016 onwards. A combination of factors drove this achievement, including a newly approved antiviral therapy, expected to become a blockbuster, and significantly strengthening one of their key therapy area portfolio strategies, along with approval of its CAR-T therapy Yescarta in the EU. Gilead was boosted by an outstanding freshness index score, measuring the proportion of revenue generated from drugs approved in the past 5 years. Gilead's 60% Freshness Index rating is more than twice its nearest rivals, and compares to an average across the top 30 companies of just 11%.

Gilead reported total sales of \$21.7bn for 2018, down by roughly 15.5%, but with a considerable proportion coming from its HIV portfolio which actually grew in sales bringing in \$14.6bn compared to \$13.0bn in 2017. The good news is sales are expected to grow thanks to a mega-blockbuster approval it scored last year with HIV therapy Biktarvy, a drug which combines integrase inhibitor bicitegravir, emtricitabine and tenofovir alafenamide, and which is expected to reach sales as high as upwards of \$7bn. Also last year, Gilead extended approval of its CAR-T therapy Yescarta in the Europe for the treatment of patients with diffuse large B-cell lymphoma (DLBCL) and primary mediastinal large B-cell lymphoma, and beat its rival Kymriah in securing a discount deal with NHS in England.

The company is committed to its new blockbuster HIV treatment Biktarvy, and early in the year following approval, it published phase III head-to-head data demonstrating that the once-daily single oral agent Biktarvy was non-inferior to a treatment regimen containing Tivicay, Epivir, and Ziagen, with an improved safety profile to the three drug regimen. Additionally, last year the company reported data from a retrospective analysis demonstrating that once-daily oral Truvada significantly reduced the rate of new infections when used as a pre-exposure prophylaxis and has had "an independent and significant impact on the number of new HIV infections diagnosed in the United States from 2012 to 2016". Finally, despite a safety concern that surfaced last year related to a DVT case, the company posted positive phase II data for its other blockbuster hopeful JAK1 inhibitor filgotinib in patients with ankylosing spondylitis (AS).

Gilead marked another important milestone in 2018, as it expanded the reach of Epclusa, its Hep C therapy, by gaining approval in China; marking a big step in entering this lucrative emerging market. While Gilead didn't have a large number of major "wins" in 2018, it also managed to have few mistakes.



ABBVIE [2]

Climbing up from fifth place in 2018, AbbVie showed it was able to strike an encouraging level of clinical innovation, profitable business decisioning and financial security.

While they will likely have exclusivity in the US until 2023 based on patent protection, AbbVie has been playing strong strategic defence with their market-leading Humira throughout 2018, lining up 7 biosimilar agreements with copycat companies seeking to gain a piece of the \$12.36 billion of US sales generated by Humira in 2017, as well as the additional \$6 billion ex-US markets.

Big winners for AbbVie came in the form of Imbruvica and Orilissa. Over the course of 2018, Imbruvica added to its already prominent profile with positive phase 3 trials in CLL in combination with Gazyva (beating out Gazyva and chemotherapy) and topping the gold standard chemo combo in CLL with the Imbruvica/Rituxan pairing. Additional winning data flowed in for the treatment of Waldenström's Macroglobulinemia – continuing the Imbruvica push. Imbruvica did hit a snag on an otherwise flawless 2018 clinical campaign in their phase 3 non-Hodgkin's Lymphoma trial, failing to demonstrate statistically significant improvement in event-free survival versus standard of care chemotherapy in previously untreated DLBCL patients.

With the significant challenge to AbbVie's Humira coming from biosimilars in just a few years, all eyes were on pipeline candidate Orilissa to help fill the void. AbbVie received approval of blockbuster hopeful Orilissa for the treatment of pain associated with endometriosis in July and was able to announce additional strong data in additional indications just a few short months later. In November, Orilissa also delivered for AbbVie with a pair of phase 3 wins in uterine fibroids supporting the bid for expanding the regulatory reach of the highly anticipated compound.

2019 promises to be a very interesting year for AbbVie as they watch to see if they can gain additional traction with their blockbuster hopefuls while continuing to mitigate the threats of product erosion as best they can.

ELI LILLY [3]

The biggest shake-up in this year's top 10 PII companies' list is Eli Lilly, jumping 10 places.

The company had two new drug approvals last year. The first was Emgality, a drug approved for the preventative treatment of migraine in adults. Lilly has high hopes for this new treatment as the drug cut migraine days at least in half for two-thirds of patients in clinical testing and comes with the convenience of a once-monthly injection. Soon after, Eli Lilly quickly managed to secure a breakthrough designation for the drug in prevention of episodic cluster headache thanks to positive phase III trial data. The company's strong commitment in helping patients with headache disorders is evident, and once again, last year it reported a filed application for lasmiditan - a new drug for the acute treatment of migraine, and if this drug is approved it will mark a significant development for patients suffering with this condition.



Lilly scored a second new drug approval in 2018, this time for its new drug Olumiant: which is a therapy indicated for adults with moderate to severe rheumatoid arthritis (RA). The drug is launching in a highly competitive market and it will have to bear the weight of some of the caveats of its approval, as only the lower dose of the drug was approved and the drug will launch with a black-box safety warning.

Its immunology star Taltz had an outstanding year in 2018, and the company has plans to continue expanding the therapy to more patients. Earlier in the year, Lilly published positive phase III top-line data for Taltz in patients with Ankylosing Spondylitis - a form of arthritis that primarily affects the spine. Later in the year, the drug stole the spotlight as it reported beating AbbVie's Humira, the world's number one selling drug, in a head-to-head phase IIIb/IV superiority study in treatment-naïve patients with Active Psoriatic Arthritis.

In oncology, its recently launched drug Verzenio picked up an approval for use in combination with an aromatase inhibitor in previously untreated, postmenopausal women with HR-positive, HER2-negative breast cancer. Cyramza, which had previously failed a phase III trial back in 2014, came back with a winning strike in second-line patients with HCC (Hepatocellular Carcinoma) who express high levels of a particular biomarker (AFP) which the company says is a predictor of poor prognosis.

Later in the year, Lilly and Pfizer posted positive phase III data for their NGF (Nerve Growth factor) blocker tanezumab, marking an important step towards approval of this opioid alternative treatment for patients with chronic pain. In diabetes, as competition intensifies among some of the key players, Eli Lilly posted Trulicity combo data demonstrating an upside to adding Trulicity to treatment with an SGLT2 for patients with type 2 diabetes. Later in the year the company reported that Trulicity helped patients cut the risk of major adverse cardiovascular events in a large outcomes study.

PFIZER [4]

Pfizer lands at the 4th spot, largely pushed forward by their 4 FDA approvals this past year.

Pfizer closed out 2018 on an FDA hot streak, collecting approvals on Daurismo in newly-diagnosed AML, a pair of approvals in non-small cell lung cancer with their highly selective second generation EGFR, and Lorbrena - Pfizer's answer for ALK-positive resistant patients and follow on for Xalkori. Finally, Pfizer was able to get the nod from the FDA for their PARP inhibitor, Talzenna, in metastatic breast cancer. This series of approvals resulted in double the output of any other company in our rankings and is likely to keep Pfizer boosted high in our Freshness index (which captures a company's reliance on new versus old approvals for revenue generation) for years to come.

The aggressive expansion in oncology will aim at offsetting the effect of generics eroding Pfizer's long time blockbuster Lyrica, which will lose its patent exclusivity in June 2019. Lyrica was responsible for approximately \$3.5 billion in 2018 revenue in the US alone, a sum that is expected to drop as much as 30% in 2019. Pfizer is also overcoming Lyrica losses by delivering



beyond expectations with their existing portfolio. Drugs such as Pevnar have exceeded consensus projections, generating \$1.53B in a single quarter; up over 7% during the same period in previous years. Additionally, Pfizer has managed to bolster their positioning in kidney cancer with a 'breakthrough' designation for its combination of PD-L1 Bavencio (co-developed with Merck KGaA) and Inlyta. The designation is for previously-untreated renal cell carcinoma patients and should aid a speedy path to market for the pair of assets.

Although Pfizer's 2018 campaign was proficient in marketing approvals, it was marred by several clinical trial failures. Marketed molecule Inlyta missed on a phase 3 expansion bid for post-surgery kidney cancer and Ibrance failed to demonstrate statistically significant increase in overall survival for patients with metastatic breast cancer who had progressed after endocrine therapy. The company ended the year on positive footing however, posting impressive data from their trial of Bavencio in kidney cancer.

MERCK & CO [5]

The challenge is to think of Merck outside the context of Keytruda. Keytruda stole the spotlight once again in 2018, as the year marked an important milestone win for the IO star, when for the first time the sales of Keytruda surpassed those of Opdivo. Merck reported Keytruda brought in nearly \$7.2bn in sales in 2018, while BMS reported year-end sales of \$6.7bn for Opdivo. Overall, Merck's total sales grew by 5.1%, driven heavily by 47% growth in Keytruda's sales alone.

The PD1 inhibitor picked up a number of approvals last year including one in rare skin cancer Merkel cell carcinoma, in patients with hepatocellular carcinoma who have been already treated with Nexavar, a groundbreaking approval in first line squamous NSCLC in combination with chemo for patients regardless of PD-L1 level making it the first in its class of PD1/PD-L1 to achieve this type of indication. Additionally, it achieved an expanded full approval in combination with pemetrexed and platinum chemo for first-line patients with metastatic non-squamous NSCLC, an approval in 3rd line for patients with a rare type of non-Hodgkin lymphoma, as well as became the first of its class of PD1/PD-L1 to gain an approval in cervical cancer. Although the IO drug hit one setback in bladder cancer, where it and its rival Tecentriq were restricted by the FDA to patients who aren't eligible for cisplatin-containing chemo and whose tumors express a predetermined level of PD-L1.

The company also rolled out a string of promising positive data that could pave the way for more potential Keytruda label expansions in the coming months, including positive OS data against chemo in previously-treated patients with esophageal carcinoma whose tumors express PD-L1, challenged Opdivo with positive data in post-surgery melanoma patients as well as with positive combo data in kidney cancer, new monotherapy data in 1st line NSCLC patients with any level of positive PD-L1, and phase III data in head and neck cancer make a strong case for use earlier in previously untreated patients.



Aside from Keytruda, Merck got 2 new HIV-1 therapies approved last year. Delstrigo which is a three drug combination once-daily tablet indicated as a complete regimen for treatment-naïve adult patients and Pifeltro which was approved to be used in adjunction with other antiretroviral agents for the treatment of HIV-1 infection in previously untreated adult patients. Its drug Lenvima, which Merck shares rights to with Eisai, got a big win last year with its approval in previously-untreated liver cancer, while its drug Lynparza, which Merck shares rights to with AstraZeneca, scored an approval in BRCA-mutated breast cancer, and gained priority review after posting positive maintenance data in BRCA-mutated ovarian cancer.

SANOFI [6]

Touting one of the year's most significant upward leaps, Sanofi comes in at #6 overall - up 9 places from ranking 15th in 2018. The upward trend can be linked to several high-performing drugs as well as acquisitions that were closely tied to successful commercialization opportunities.

Sanofi started the year with momentum from their first immunology drug Dupixent as well as Kevzara in moderate to severe rheumatoid arthritis. Dupixent represented a paradigm-shifting innovation in atopic dermatitis, taking a bold approach to treatment through the development of a biologic, requiring significant physician, payer and patient education to help the entire market update how they think about treating the disease. To boost the success of Dupixent even further, Sanofi received an approval for its use in severe asthma – a move that analysts expect could add as much as \$2.5 billion in peak sales. The approach of Kevzara to the market was markedly different right from the launch. The Interleukin 6 Receptor Antagonist (IL6R) was launched as a mechanistically-differentiated and 30% price undercut to the market-dominating TNF-alpha drugs.

Over 2018, additional big wins in rare blood disorders and the cardiovascular arena helped propel Sanofi up the Index. Sanofi has continued to drive development of their Praluent injection, reporting positive phase 3 data from their ODYSSEY ESCAPE trial and submitting a fourth quarter sBLA with the hopes of having the drug approved for reducing the overall risk of major adverse cardiovascular events (MACE), which includes heart attack, ischemic stroke and death from coronary heart disease. In the rare blood disorders space, Sanofi was able to capitalize on their first product from the Ablynx deal. Cablivi received an EMA approval for the treatment of thrombotic thrombocytopenic purpura (aTTP) – the first-ever therapy indicated for the disease – which is anticipated to yield peak annual sales of \$500 million. In the US, the drug has received an FDA “Fast Track” designation for the same indication and is being supported by their phase 3 Hercules trial as well as a three-year follow up that is currently ongoing.

Sanofi has several new and promising assets that suggest a continued upward trend. We anticipate 2019 will see Sanofi continue its rise in our rankings with continued bold moves and innovative strategies.



NOVO NORDISK [7]

Up 3 spots from their 2018 PII ranking of 10th, Novo Nordisk comes in at 7th overall. Novo Nordisk was able to combine impressive financial gains with multiple clinical trial and regulatory wins for a solid innovative and profitable 2018.

Novo continued their upward trend of both revenue and net income that has been consistent over the past 5+ years. The company posted gains of 4.59% in revenue and 5.82% in net income over the previous 2017 financials. The overall positive trend came from success across the Novo portfolio, including sales increases of 6% for Victoza, 42% increase for Saxenda and 8% for Tresiba. Additionally, Novo Nordisk was able to expand the sales of their total GLP-1 franchise by 10% with the successful launch, and quick traction, of Ozempic.

Novo made several moves to bolster its portfolio in 2018, including new launches and sales boosting data. Ozempic launched in February of 2018 and is Novo's latest entry to their GLP-1 franchise. The once-weekly has already reached a 26% market share and is available in 11 European countries and North America.

Novo demonstrated the accuracy of the adage 'the best defense is a good offense' in 2018 with Tresiba and their oral semaglutide. Operating in an increasingly competitive field with growing payer pressures necessitates innovation and continued portfolio vision and execution. The company was able to further entrench Tresiba through label expansions which set their differentiating safety value in a class by itself. While Ozempic represents the big 2018 launch for Novo, their oral semaglutide candidate is their next big shot on goal. They were able to generate several clinical wins in type-2 diabetes and obesity to help unseat incumbent competitors Januvia and Victoza. Novo is expected to file their oral semaglutide early in 2019 using a priority review voucher, further driving their market dominance.

This ambitious strategy has worked to solidify the Novo Nordisk prominence and leadership of the GLP-1 market, as well as strengthening their foothold in type-2 diabetes and obesity markets. Continued innovations and pioneering make Novo a safe bet for continuing the upward trend on our productive innovations index in 2019 and beyond.

ROCHE [8]

Roche landed in the exact same position in this year's PII, as it celebrated some wins and suffered some setbacks in 2018. The commitment to its three key major therapy areas (oncology, neuroscience, and immunology) was evident. The company's sales grew 7% from the previous year, bringing in 56.8bn CHF in 2018.

During the first half of 2018, Roche posted positive phase III data, demonstrating that in combination with chemo it cut the risk of disease worsening or death relative to chemo alone for



first line patients with squamous NSCLC, although its glory was short lived as Merck's Keytruda posted more impressive data for its identical study. Then Roche challenged rival Merck, with positive phase III data from its IMpower130 study where it demonstrated that its PD-L1 Tecentriq in combination with chemo and Celgene's chemo drug Abraxane improved overall survival in front line patients with metastatic non-squamous NSCLC versus the standard of care chemotherapy alone. Later in the year, the company posted positive phase III survival data in previously untreated SCLC patients, where Tecentriq in combination with chemo beat chemo alone in significantly extending patients' lives. Later in the year, the company followed with another win, this time in triple negative breast cancer, where Roche posted positive data in combination with Celgene's Abraxane in these tough-to-treat patients. In liver cancer, Roche picked up a breakthrough designation for Tecentriq in combination with Avastin in treatment-naïve patients, while in kidney cancer it pulled its application, as according to the company "results were not sufficient to support an extension of indication", while suffering a setback with the FDA restricting its use in bladder cancer.

Rising star Venclexta, which Roche shares rights to with AbbVie, won an approval in combination with Rituximab in relapsed CLL patients with or without 17p deletion. Later in the year, the drug gained FDA approval in newly-diagnosed previously untreated AML patients who are ineligible for intensive chemotherapy.

Outside of oncology, Roche celebrated a label expansion of its haemophilia drug Hemlibra which is now indicated to treat all haemophilia A patients. Additionally, the company scored a big drug approval last year - its next generation flu drug Xofluza, although it remains to be seen whether the benefit of the drug will be meaningful enough to outcompete Tamiflu generics. The company posted key 5-year data for its blockbuster MS (Multiple Sclerosis) therapy Ocrevus, demonstrating that early initiation of the therapy reduced disability progression in patients with relapsing MS (RMS) and primary progressive MS (PPMS). Finally, the company celebrated the approval of a new formulation of its blockbuster drug Xolair, which now conveniently comes in a pre-filled syringe form for both allergic asthma and chronic idiopathic urticaria (CIU).

NOVARTIS [9]

After placing in the top 3 in the 2018 PII, Novartis has taken a step back in 2019, falling 6 places to the 9th position. This regression is due to several areas not being quite as successful as previous years, rather than any singular driving force; that being said, overall 2018 was a very successful year for the company.

Novartis was able to continue to grow into their leadership role in the CAR-T arena, adding DLBCL as an approved indication for Kymriah. Despite their best expansion efforts however, the novel therapeutic approach has failed to meet analyst expectations - generating ~\$76 million in its first year on market and falling considerably short of the lofty \$159 million target that Wall Street set at the beginning of the year. In addition to the slow start, manufacturing troubles have compounded the issue, making expansion efforts challenging. In Europe, the drug fared better-earning a thumbs up from England's cost-effectiveness watchdogs just days after Gilead's competitor Yescarta was rejected, providing Novartis with a head-start ex-US. There is a strong



hope for Kymriah success in 2019 as the pipeline is set to tackle several additional leukemia and lymphoma indications that should keep Novartis highly competitive in the CAR-T race.

Several additional big moves help to keep Novartis in the top 10 this year, including their approval and fast success of Lutathera. After buying out Advanced Accelerator Applications at the end of 2017, Novartis was able to get a first quarter approval of Lutathera, the first peptide receptor radionuclide therapy to win U.S. approval, for the treatment of somatostatin receptor-positive gastroenteropancreatic neuroendocrine tumors (GEP-NETs). Since the approval early this year, the penetration has been remarkable in this rare disease space, with nearly 1,200 doses administered across 85 stateside centers (according to the Novartis 3Q Investor Presentation). Given the rarity of this particular digestive tract cancer, CEO Vas Narasimhan has called the launch a “really explosive performance” racking up over \$160 million in sales its first year.

Novartis closed out a commercially successful year by posting a 54% increase in net profit over 2017- an upward trend they hope to continue in 2019 with their strong commercialization efforts and additional label expansion.

GSK [10]

GlaxoSmithKline continued their steady climb up the pharmaceutical innovation index in 2018, moving up 3 spots to squeak into the top 10 (GSK has averaged a +3 annual increase on the PII between 2016 and 2018).

GSK showed moderate, yet healthy growth in 2018 with a 2% increase in overall sales compared to the previous year. A key driver of their growth came from new products. One standout was the new shingles vaccine, Shingrix, which received approval in Europe in early 2018, building on its initial 2017 FDA approval. The vaccine saw unprecedented demand in its first year on the market, generating £784 million in sales (globally). However, the drug company may have suffered from too much success, with GSK failing to meet the insatiable demand that led to a Shingrix shortage beginning in the second half of 2018 and persisting into early 2019.

Another 2018 win came from the impressive HIV data GSK posted. GlaxoSmithKline’s ViiV Healthcare showed that the combination of their two drugs, Tivicay (dolutegravir) and Epivir (lamivudine) were able to suppress viral loads as well as standard triplet therapy across two phase 3 clinical trials. This remarkable data could ultimately transform the way HIV is treated, changing HIV treatments from a 365 days per year dosing, to just 12. Paring back treatment to just two-drugs could also help patients to see fewer side effects over time.

Arguably the biggest setback for GSK in 2018 came with the FDA’s rejection of Nucala for use in COPD. The company had hoped to score a win with the drug as part of its effort to rebuild their respiratory franchise which faces imminent threats from Advair generics. While the rejection does not erase all hope for the potential blockbuster, it does mean that GSK will have to go back to the drawing board before re-submitting to the FDA.



GSK also reaffirmed its commitment to oncology in 2018, acquiring the oncology-focused company, Tesaro, and investing heavily in several in-house oncology pipeline assets. Though the company faces headwinds with key products going off-patent, the new focus on oncology could help steer GSK toward a more promising future.

Final thoughts on PII performance...

Congratulations to those who finished out 2018 strong and at the top of our list, especially those who have been models of consistent innovation and forward-thinking in their development and commercialization practices. 2018 saw a large amount of returners in the top bracket of our PII index, with only a handful of new companies rising into the top 10. In fact, seven of the 2018 top 10 managed to retain this status, while we had 3 newcomers (Sanofi, GSK and Eli Lilly) break into the top tier.

Outside of the top 10 the biggest riser was Shire, #13, up a significant 17 positions from its 2018 finish at #30. Helping boost the profile of Shire was the expansion of several products such as Adynovi, which was approved in Europe in January and Cinryze which one a label expansion for children as young as 6 with HAE.

Additional big movers rising quickly up the rankings were Astellas, UCB and Takeda – rising 9,9 and 10 spots respectively. Although they still occupy the middle of our rankings pack, we have big expectations for their continued upward progress moving into 2019.

In 2017, we first noted a shift of big pharma pushing out smaller companies from the top spots - in reviewing 2018, that shift has developed into a notable trend in our rankings. Will Big Pharma continue to take big risks and push the envelope on innovation? Or will biotechs and other smaller companies leverage their agility to ‘wow’ us with new and different approaches to the many challenges faced in today’s market. We are interested to how this will play out in 2019 and beyond.

To see what companies occupy PII positions 11-30, please visit the dedicated website at <http://ideapharma.com/pii> . And do not hesitate to get in contact should you wish to discuss anything.



PII Methodology

Hypothesis:

If two companies each had the same NCE at the same stage of development (end of Phase 1), which company would do the best job of commercialising the product?

Constraints:

Cannot measure this directly, therefore need to deploy surrogate measures.

Each measure or index must exist (somewhere), be gettable (either full or derivable), be useable (compare like with like, transferable), be available across ALL companies under consideration.

Indices identified to date to rank top 30 pharma include (non-exclusive list):

1. Global sales – a measure of the funding available for commercialisation efforts
2. Regulatory efficiency: regulatory success ratio, investment vs company size, progression of assets to next phase, major study successes/ failures, return vs investment, etc.
3. Value proposition, need for product:
 - a. Did products achieve reimbursement, HTA approvals?
 - b. Did FDA grant expedited processing or breakthrough status?
 - c. Developing first in class NCEs or novel mechanisms of action
4. Commercialisation acumen: Sales and marketing spend, overall operating costs, vs turnover, etc.
5. 'Freshness Index' - percentage of company sales generated by products launched in the last three and five years (a measure of a company's ability to "refresh" its portfolio in the face of patent loss, providing a comprehensive portfolio, etc)
6. Snapshot of analyst rankings
7. In addition, IDEA Pharma monitors company websites, annual reports and industry sites to identify single or short- term events that would increase or decrease a company's PII ranking, e.g.
 - a. Changes in R&D strategy, research collaborations, etc.
 - b. Company restructuring to capitalise on areas of strength, optimisation of portfolios/ franchises
 - c. Innovative commercialisation or sales strategies (including social media)
 - d. Mergers and acquisitions which would increase a company's ability to generate commercial success

Each of the above are collated by company and weighted to produce the PII.

