

Understanding Headline Deal Values

A PharmaVentures Guide to the Interpretation of Deal Terms and Terminology

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Deal making is the lifeblood of the pharmaceutical sector. In- and out-licensing and other types of agreements are key mechanisms by which intellectual property (IP) of innovative products and technologies is transferred between companies for achievement of development and commercialisation objectives. It is vital that companies execute good deals as this underpins their future profitability, drives share price and demonstrates management competency.

Benchmarking against past transactions is one of the fundamental ways that deal makers and analysts judge value and the appropriateness of deal terms. Many publicised deals do not reveal financial terms and those that do typically only report the headline deal value comprising minimal information about payments such as upfront, milestones, R&D and equity. Significantly, royalty rates, the deal component that normally represents the greatest value contribution to the IP licensor, are infrequently publicised with the norm to keep this information highly confidential.

Great care must be taken when benchmarking and interpreting deal terms because the value of the deal components can sometimes be reported so as to dazzle or deceive a receptive audience. This article considers the principal deal components and provides some guidance as to their interpretation for more effective benchmarking.

The principal components of licensing deals include:

- upfront fees;
- equity;
- development milestones;
- commercial milestones; and
- royalties.

Upfront fees:-

Upfront payments are generally risk free value components of the deal for the licensor. Occasionally special terms might be granted to ease any cash flow problems a licensee might face; a situation more likely to occur with start-ups or loss making biotechs than with cash rich big pharma licensees. Payment concessions, if any, for upfront monies however are unlikely to distort the value distribution as they tend to be framed over months rather than years and so time and therefore risk is minimal. Upfront fees are therefore a reasonably straightforward value component with little scope for misinterpretation.

Equity:-

The picture starts to cloud once equity is included in any deal announcement. On the face of it equity can be considered a tradable asset in which the investing licensee could resell and convert back into a cash asset with no benefit to the licensor apart from a good faith gesture in the potential of the licensor's business. The licensee may be able to effect this purchase and sale independent of the deal itself and so one school of thought is to discount altogether any equity value from a deal valuation. Equity frequently includes a premium to the current share value (public or private). Aside from any dilution effect the new shares may have on the trade price, the premium itself might be considered as an up-front lump sum, and therefore a risk free component of that intrinsic value share. Those attempting to understand equity value should dig a little deeper into the agreement, which for a listed US company's deals can be found in their SEC¹ filings. It is possible that restrictions are placed on the licensee's ability to trade the stock which further complicates the interpretation of value. The stock cannot now be valued against its current or deal date price since there is a restriction on some or all of it preventing its conversion back into cash. The Black-Scholes model is often used to value the option to buy or sell stock at a future date. SEC filings may also report premium calculated values using this methodology. By way of an example, in a recent 2008 deal, the equity component of the deal was reported as 5 million shares at \$30. The trade price was around \$15 on the day of the announcement and close to that a few days later after the dust had settled. The stock was restricted such that no trading was allowed for 4 years. Without this restriction the premium would have been around \$75M to add to the \$175M up-front license fee. According to the licensor's latest 10Q filing, the premium using Black-Scholes option valuation model was \$100M, a sizeable chunk more than totally discounting the equity value from the deal valuation and a not inconsequential \$25M more than the 'unrestricted' premium calculation!

Two other confounding equity issues are worth consideration.

¹ US Securities and Exchange Commission.

Firstly the purchase of equity by the licensee now means that the licensee is also a percentage of the licensor. The relative holding therefore may be considered a similar percentage discount from any future lump sum or royalty payments. If following an equity investment I own 10% of the company that I thereafter give a \$1M milestone payment to, then in principle I am giving 10% of that milestone, i.e. \$100K, to myself. Secondly, and linked to that, a percentage share of the stock should translate into a percentage share of the expected net present value (eNPV) of the deal. In the case of a potential blockbuster, an eNPV share for the licensor might be \$2.5B for a drug forecast to achieve peak year sales of \$3B. A 6% equity stake in the licensor could therefore be worth 6% of that \$2.5B to the licensee i.e. \$150M. We have seen recently a depression in the value of biotech stocks such that the market capitalisation for many small biotechs appears to undervalue the company when compared with a valuation of its IP. Many deals involving monetisation companies where future royalty streams, or parts of them, are sold for cash demonstrate that this IP value can easily exceed the market capitalisation of the company. In the \$2.5B above example the market cap of the licensor, as I write, stands at \$1.33B showing clearly the double standards of equity value. If we want to consider the value from the licensee's deal based perception, rather than from a market / accounting principle, then the full equity component should be taken at face value as an up-front by another name. Equity then is a confusing but potentially important value component demanding scrutiny.

Development Milestones:-

Sometimes the biggest nominal deal numbers are attributed to development milestones. Arguably the best valuation model for drugs is the eNPV calculation; which basically is a discounted cash flow methodology incorporating a decision tree analysis. It takes into account the present value of tomorrow's money tempered further with the risks involved in the successful development program. As products progress along the development path towards market they gain value, or lose it all if their progress is halted. This gain is not a linear process with time, but a stepwise incremental gain by successfully clearing the clinical trial hurdles of Phases I to III and thereafter the registration / approval stages. These incremental successes are often built into deals as development milestones. In simple terms if the licensor agrees to a deal wherein he retains for example 20% of the eNPV, then at each increase in value there is a potential to realise this gain by means of a development milestone payment. For a drug just starting Phase I trials one of those milestones might look something like ... \$6M on entering Phase III trials. The nominal value of \$6M four years from now has a net present value of just \$1.1M based on well researched risk factors and industry discount rate for money. Much more common will be a deal announcement indicating a total development milestone value with no stage splits. A three or four stage total of \$100M might be only worth \$20M in eNPV terms, but to make that assessment needs insight and/or

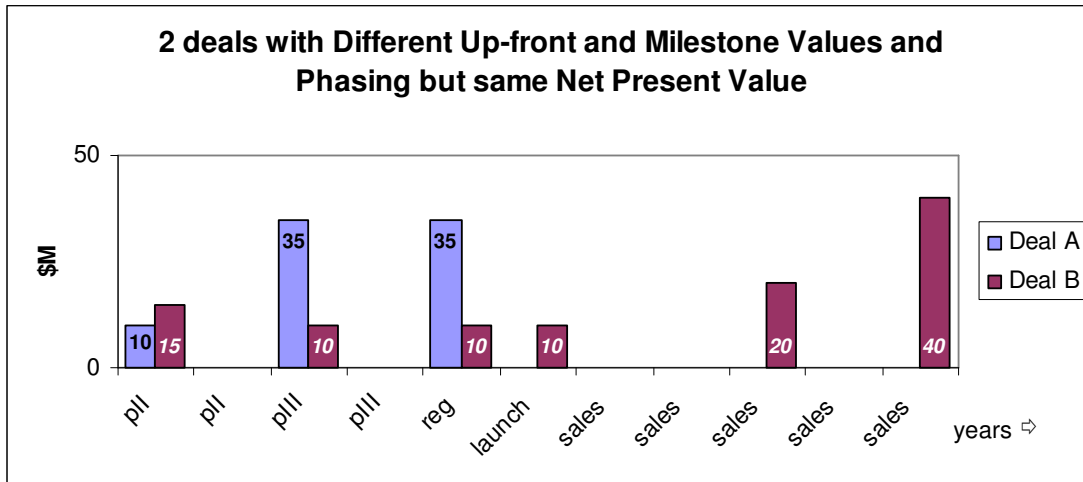
experience relating to the likely splits. Occasionally reference will be made to “R&D payments” within the milestones values. R&D payments are normally a fee for development-service arrangement. Unless there is a significant premium attached to the normal cost then these payments have no real deal value. The cost would be the same to all intents and purposes if a third party were contracted to provide the same service. Another complication of development milestones can be found in their relevance. Some deals will include reference to milestone payments for further indications and as such could be unrelated to the value of the deal in question. Further indications are also likely to be at different stages of the development pipeline. Where possible consider only those milestones associated with the product indication driving the sales line on the eNPV spreadsheet.

Commercial Milestones:-

Once a product reaches the market a share of the profit will be returned to the licensor usually in the form of a royalty. Commercial milestones are sometimes used to return lump sums of royalty based on achievement of certain sales levels. These milestone break points can be in the form of total (cumulative) net sales, but more commonly are based on annual sales. Any difference of opinion during a deal negotiation over sales forecasts (and the royalty flowing from that) can be addressed in part by the use of such conditional factors. These conditional factors can take the form of lump sums (commercial milestones) and / or tiers in the royalty rates (more on tiers in the next section). So on the face of it commercial milestones should be easy to interpret. With a sales forecast to hand, the trigger point for the commercial milestone payments should be easy to date and therefore value, based on the relevant discount rates and any development attrition rate hurdles.

If only it were that easy! Generally, publicised commercial milestones are often lumped together in an ‘up-to’ classification with no breakdown available to the deal interpreter. In fact commercial milestones and development milestones are often lumped together confounding the issue further. Experience and common sense provide us the best tools in sorting out the probable from the possible. By building a valuation spreadsheet around a deal and splitting out estimated sales based (or development) milestone chunks of ‘cash’ iteratively from the declared ‘up-to’ totals we can generate models that eventually fit typical or expected norms for value apportionment between licensor and licensee.

In figure 1 below two deals are compared with differing structures. Deal A has a headline value of \$80M derived from up-front and development milestones, Deal B has a headline value of \$105M based on up-front, development and commercial milestones.



Despite the apparent 31% increase in value of Deal B over Deal A, both have essentially similar net present values when analysed using our eNPV approach.

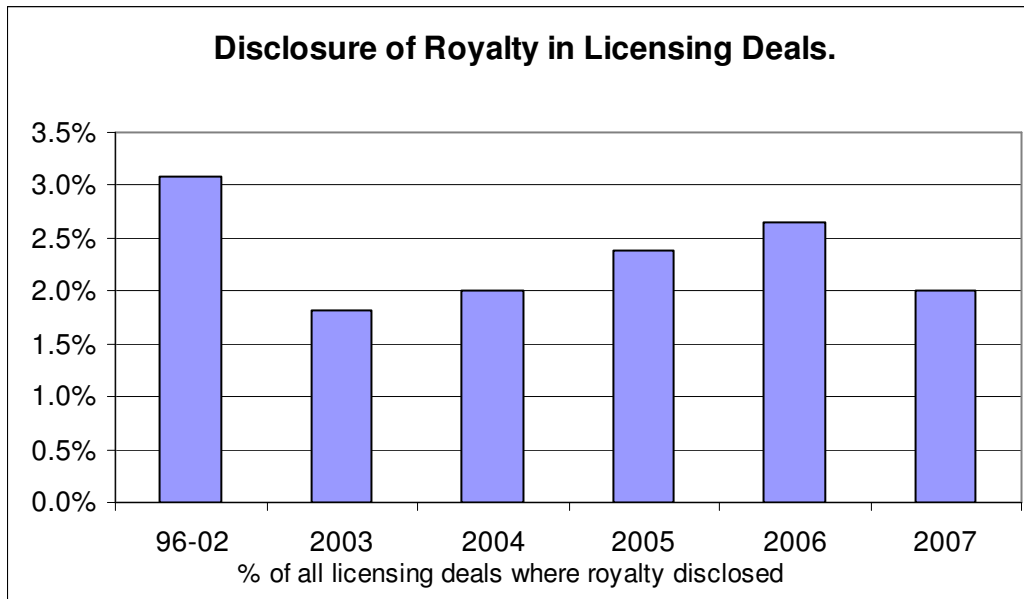
	NPV up-front (uf)	NPV milestones (m)	total NPV (uf + m)
Deal A	\$10M	\$19M	\$29M
Deal B	\$15M	\$14M	\$29M

It may quickly become apparent that a generous proportion of the milestone value in some announced headline rates is associated with a sales level unlikely ever to exist, at least in the eyes of the analyst (and probably the licensee). Therefore if a share of the deal value appears too favourable for the licensor by its inclusion in the eNPV data, then the commercial milestone itself could be worthless. We have seen payments associated with annual sales levels of \$5B for products forecast to achieve \$2-3B peak annual sales. Optimism is not a bad thing *per se*, but over optimism can be misleading.

Royalties:-

The unassuming millionaire in the deal structure, royalties go about their business often invisibly, adding the greatest value to the deal, but receiving the least public recognition for their benevolence. The following chart shows the paucity of royalty rate data in the public domain.²

² Source: PharmaDeals™ Agreements database.



Value in royalties is generally an implied figure, a percentage of (un-revealed) sales for example, rather than an overt 'cash' amount. There is no standard approach to royalty information revelation. Most often it is not mentioned beyond a reference such as 'the deal also includes royalties'. Teasingly expanded revelation may come in the form of 'mid-single digit', 'double digit', 'escalating tiered', all of which help to build a sketchy picture of what might lie beneath the veil of secrecy for the deal interpreter, but exactly what might they mean? 'Mid single digit' can usually be interpreted as 4-6%, where 1-3% constitutes low single digit, and 7-9% high single digit. Taking 'mid' as 5% in a valuation model will have a nominal potential error of $\pm 1\%$ (i.e. 80-120% of the 5% value) but apart from pure royalty only launched product deals with therefore very low attrition rates, this error will be of little significance. The term 'mid teens' can also be assumed to mean 15% with even more approximate accuracy as the $\pm 1\%$ range (14%-16%) reduces the overall error potential. 'Double digit' however is a much more difficult phrase to pin down. In a brief survey of industry professionals we have the following most likely interpretations of 'double digit'-

- "10% ...its to imply a degree of magnitude greater than single digit that isn't really there"
- "15% ...its anywhere between 10% and 20%"
- "...anywhere between 10% and about 50% maximum".

The eNPV model approach should help to narrow down the possibilities based on the norms for deal value apportionment between licensor and licensee.

Reference to tiered royalties can complicate the interpretation further. As with commercial milestones, tiers in royalty structures can address the uncertainty or difference in opinion around sales forecasts. Licensees may agree to the higher levels of royalty desired by the

licensor, but only at sales volumes that are warranted. Occasionally the drive will be for reducing tiers in the royalties, desired by the licensee to address life cycle issues such as price erosion through reimbursement or competitive pharmacoeconomic scenarios. Take care however when interpreting tier rate information. Does the rate change for all sales, or for just the portion above the tier cut off? As an example in the chart below, a rate that climbs from 15% to 25% once annual sales exceed \$400M might give the following average royalty when looked at in two ways, which is correct? Further work is required to clarify the basis of royalty tier payments.

	\$M	\$M
sales	\$480.0	\$480.0
royalty 15.0% up to \$100M	\$15.0	\$0.0
royalty 17.5% up to \$200M	\$17.5	\$0.0
royalty 20.0% up to \$400M	\$40.0	\$0.0
royalty 25.0% over \$400M	\$20.0	\$120.0
total royalty	\$92.5	\$120.0
total as % of sales	19.3%	25.0%

There is another complication relating to royalties which may distort the perceived value split between parties if it is not accounted for. Alarm bells should ring if, particularly for late stage and launched products, the royalty rate appears low compared with industry norms and eNPV calculations, and a manufacturing element is retained by the licensor. In such cases there is the possibility that a pricing structure has been agreed containing a manufacturing related value bearing margin for the licensor. As an example, taken from an actual case, a transfer price based on 20% of the sales price was included in the deal structure which already stated a royalty rate of 25% of sales. If the effective cost of goods was 10% of sales then in this case the royalty rate could be restated as 35% to account for the extra 10% included in the transfer price. Knowledge of local tax structures will be useful in identifying likely manufacturing price + royalty bearing deals. Where tax burdens are higher on royalty than operating income such pricing structures may be sought. So far we have considered royalty data as being a percentage of the sales. This is not always the case in pharmaceutical deals. Occasionally the variable is a profit related term which may be defined in the agreement as sales minus 'program costs', or similarly defined wording. Royalty figures in deal announcements of 30% to over 50% should be checked out carefully so as to be crystal clear on the variable to which the percentage applies. A royalty figure of 50% would be unusual in a big-pharma in-licensing deal if it related to sales, implying the licensor: licensee ratio (assuming 5% cost of goods and 25% marketing costs) would be an imbalanced ration of 2.5:1. Deals for marketing only licensing in some secondary markets might show such a split

but in other deals a more common definition of the 50% royalty would be as '50% of profit' or contribution, i.e. sales (100%) minus those 5% and 25% costs, with a ratio split of 1:1 and equal to a royalty rate of 35%.

To counter the confusion caused by deal headline value announcements PharmaVentures has developed a methodology to derive an 'underlying' royalty rate. This is basically an expression of all deal value as a percent of product sales based upon an eNPV financial model. This single parameter calculation has proven useful as a comparator for seemingly disparate deal structures. Conversely, using the method we can also express the same product, with the same development timescales, launch date, sales forecast etc, in a variety of value structures. As an example:-

	A –Up-Front and Development Milestones	B – Add Commercial Milestones but Lower Royalty	C - Royalty Alone
Headline value	Up to \$110M in up-front and development milestones.	Up to \$380M, in up-front, development and commercial milestones	-
Royalty	Double digit (13.1%)	Mid single digit (6.4%)	18.3%
eNPV to licensor	\$237M	\$237M	\$237M

The headline value of structure A would appear to the casual or naïve observer to be far less 'valuable' (i.e. not as good a deal for the licensor), compared with that of structure B, but in reality the value expressed as an 'eNPV' is identical. The single parameter approach allows us to cut through the noise created by those face value deal component based announcements and tune in to a common 'value' parameter. As in the above examples the maximum headline value might be significantly lower, or higher than the eNPV figure, either way it gives little insight into the deal's eNPV.

In Conclusion:-

With a little perseverance one can uncover a lot more information on deal values than the headline value reveals. This paper has hopefully helped the reader to be more aware of the main issues and questions relating to deal data. Thorough research, experience and judgement can improve the quality of information derived from the examination of headline deal values.



PharmaVentures' Consultancy team has extensive experience in deal analysis, deal structuring and valuation. If you would like to tap in to our wealth of knowledge and expertise as part of your own licensing, acquisition, or disposal project, please contact **Dr. Tibor Papp, Head of Consultancy, PharmaVentures Ltd., Tel: +44 (0)1865 784177, email: tibor.papp@pharmaventures.com.**