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VALUATION OF INTELLECTUAL PROPERTY ASSETS: SIGNIFICANCE, PARAMETERS, METHODOLOGIES AND LIMITATIONS

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INTRODUCTION

There is much ground to be covered from the initial premise that rights of ownership may be attached to Intellectual Property (IP) to the point at which one can debate the principles of its valuation. Indeed the territory to be covered is so extensive; the options and subjective judgements required so numerous, that at first glance one might question the validity of the valuation exercise in the first place. The world's accountancy professions have wrestled with the problem for years and an adequately defined standard for the general valuation of IP in balance sheets has yet to be devised. To the extent that IP is valued, it is more often than not swept up into the broad category of *goodwill*, which is little more than the difference between what somebody has paid for a business and the value placed on its tangible assets. But even this unsatisfactory valuation basis indicates that there is value in the intangible assets of a company, a part of which will include IP.

THE SIGNIFICANCE OF VALUING IP

The overwhelming evidence to indicate that IP has very real value are the lengths that companies and individuals will go to in order to defend it. There is the money, time and trouble that is gone to in the process of registering an IP protection; the considerable legal and other costs that are expended in the defense of IP; the vast sums that are spent with the advertising industry in promoting brands and so forth. The circumstantial evidence, that IP has value, is overwhelming. All we are really saying is that placing a specific value on a specific item is difficult – which is not a sound reason for saying that it either cannot or should not be done. In fact it is absolutely essential that it should. My previous paper emphasized the importance and relevance of the private sector in developing IP within national economies. As I stated then, many businesses are largely knowledge-based and in order for knowledge-based business to function, it is imperative that they be able to value their principal investment from the point of view of:

- managing the business – are the actual or potential returns on the IP investment adequate;
- licensing and selling IP;
- determining the commercial perimeters for sustaining their IP investment;
- raising finance;
- acquisitions and mergers.

and so forth.

Without the ability to undertake the foregoing the use the private sector can make of IP is limited and IP-based economic growth would be severely curtailed.

Government needs to be able to place a value on IP. In an abstract sense because increasingly government will have to be able to place a value of the contribution of IP to the national economic accounts. Also from the pragmatic aspects of its own investment in IP and the decision it needs to make in relation to the potential transfer to the private sector, for taxation purposes and in the area of administering bankruptcies and receiverships. It is the pragmatic aspects of IP valuation that we will be considering today.

PARAMETERS

Why is it difficult to value IP?

One of the principal difficulties of valuing IP, is its complexity. Even within the same category of IP such as patents there is insufficient homogeneity, either in terms of the nature and purpose of a patent or in terms of the valuation circumstances, to apply a standard valuation method – an issue I shall revisit later in this paper. Finding the value of an IP asset is not like finding the price of a standardised product, like a car or a bicycle, which can be easily located in a newspaper or at a local dealer. The values in IP assets lie not in the standardisation of the asset, but in the uniqueness of the image that a trademark is the carrier of, or the technological solutions that the patent is protecting.

I should now like to introduce the concept of "utility". As defined by the Oxford English dictionary this means *"The fact, quality, or characteristic of being useful; fitness for a purpose; usefulness, serviceableness"*. Taking my previous example of the motor car or bicycle. The "utility" of a motor car to someone living in the centre of a large city well served by public transport is less than for someone living in a rural area. A bicycle is of greater utility to someone living in Amsterdam or Shanghai than it is to dweller in the Andes. The city dweller may decide not to own a car and spend less money and experience greater convenience by using public transport. A lama has infinitely greater utility value to the Andean than a bicycle. Thus even for items that are easily priced and which have a readily identifiable application the issue of utility will influence sales volume, type of model sold and price.

If we consider the principle of utility in the context of an item of IP the adopted valuation principle will have to take into account the usefulness of the IP item to its owner or the probability of the owner being able to identify a willing user of that IP. Utility comparisons can also be made regarding competing technologies or even trademarks and brand names. Once we begin to look at IP from the basis of utility, the judgmental factors influencing its valuation begin to fall into place.

Assessing the options

IP may be exploited in many ways, e.g.:

- by selling complete title to the IP assets;
- by in-house manufacturing and selling of goods incorporating trademarks and patents; and
- by leasing the rights to the IP asset by way of a license or series of licenses.

To decide the most appropriate strategy for exploitation, an IP holder needs to estimate the risks and rewards involved in each alternative. The holder of IP needs then to assess the current and potential value of the asset under each scenario.

Thus far we have been equating price with value. Whilst value may represent an estimation of price there are a range of circumstances that will have a bearing on the nature of the price or the price assumption:

- Competitiveness – The fact that an idea is capable of achieving unique recognition through the IP registration process does not make it immune to competition. Alternative ways of achieving the same result may well exist in the area of a patent; brands will have competitors and even strong brands will experience competition from generic manufacturers, as is the case in the pharmaceutical industry.

- Quality of Provenance – The source of the IP has a bearing upon its ultimate value.
  Example: 1) A device that enabled computers to be directly controlled by thought would have very considerable market value. A company with an established manufacturing and market presence would have the resources to undertake production development and introduce the invention to the market in a short time frame. Both profits and cash flow would be generated relatively soon.

  Example: 2) If the same device were invented by an individual in his small work shop he/she would need to raise sufficient capital to develop not only the product but the necessary manufacturing and distribution structure. There is also the risk that in the time it takes to bring a product to market from scratch, competitors have been able to develop competing technology.

  It would therefore be reasonable to attribute a higher value to the IP in the case of 1) than in the case of 2).

- Transactional
  Example: 3) The inventor in 2) decides to sell or license to the manufacturer in 1). Depending on the relative negotiating astuteness of the two parties, the price obtained would probably be higher than the return if the inventor decided

to market the product him/herself, but lower than the value to the purchasing company. Even then the terms of the licensing contract will have a bearing on the value of the IP to the licensor. To take a real-life case, if Bill Gates had been persuaded to license the DOS operating system to IBM on an exclusive basis, IBM would undoubtedly have made more money and Microsoft less. But also we have to consider that the market in such circumstances might have taken on a different shape with a number of competitor operating systems emerging and consequently the possibility of lower profits being generated by the DOS and Windows operating systems. Were this the case the aggregate worth of DOS/Windows IP would have been lower than is the case today.

- Intent – Certain categories of IP, most particularly, patents can be retained for reasons other than the intention of exploiting them directly in the market place. Exploitation of a patent for replacement technology can be withheld to extend the working life of established production capacity. An alternative technology can be prevented from entering the market place to restrict competition. Where the owner is a substantial organization, unlikely to be forced into a sale of its IP and under no commercial strategy to change its policy, a valuation on an open market (willing buyer/willing seller) basis would not be appropriate.
- Function – A patent, or in certain circumstances, other forms of IP can be used to protect a central concept. Peripheral patents may not be central to the basic technology, but form part of a broad technological "matrix" thereby making it more difficult for competitors to replicate a product by other means. Such items of IP have a limited value on their own and therefore any value they have is derived from the core item of IP.

Purpose of a valuation also determines its outcome

Surely a valuation is a valuation? How is it that the purpose of a valuation can determine its outcome? Let us briefly examine some of the areas and situations in which IP valuations may be required and some of the factors that can give rise to divergent valuations:

- Purchase and Sale – traditional buyer/seller price divergence;

- Licensing – buyer/seller price divergence combined with the influence of different financial and taxation profiles; differences of perception in market profiles; differences in corporate philosophies and objectives;

- Corporate Finance – merger and acquisition valuations will incorporate the buyer/seller price divergence but also existence of competitive IP within the combined businesses; taxation profiles; differences of perception in market profiles; differences in corporate philosophies and objectives. Also corporate finance funding operations will also have to take into account the different risk perceptions between investor and the raiser of capital, variances of optimism in

the business plan. The following factors are also relevant; company policy towards maintaining IP – marketing expenditure, patent protection measures and expenditure; industry IP life-cycle; company market share; financial resources in relation to peer group competitors etc.

- Litigation – by definition there is a wide discrepancy between the plaintiffs and the defendants' positions. Where IP is a subsidiary component of a broader dispute involving the value of assets generally, a relatively conventional willing buyer/willing seller approach may be appropriate. Where the litigation relates directly to IP infringement, assessments will not only have to take into account present value of the IP but also what it might have been had the infringement had not occurred, loss of past value/revenue and the costs of restoring the position.

- Transfer Pricing – a contentious area where governments, taxation authorities, insolvency practitioners and even policeman in the case of suspected money laundering are frequently highly suspicious of the values placed on IP. Within the valuation framework there are legitimate reasons for seeing a divergence in price between what might be expected, based on broad knowledge of companies' activities in other regions, and the calculated transfer price. For example there will be variances in the strength of brand or patent between one market and another. Poor IP protection enforcement in a given market may lead to an IP owner requiring a high level of return in exchange for putting his IP at risk. The pricing of IP transfer may be part of a larger transaction and the pricing may be a legitimate reflection of its role in the overall consideration package.

- Financial Reporting – for the purpose of management information, providing shareholders and employees with additional information and to the extent that it can be incorporated in published accounts (e.g., part of an exercise to verify the accuracy of a goodwill item) valuations of IP are required. A range of issues will influence the outcome. These include *inter alia*; company policy towards maintaining IP – marketing expenditure; patent protection measures and expenditure; industry IP life cycle; company market share; financial resources in relation to peer group competitors.

Although thus far we seemed to have discussed a long list of potential variables and combinations of variables, they enable us to determine why it is, for example, that just because the trademark Coca Cola is estimated to be worth $35 billion, it does not mean that Pepsi Cola is worth the same, despite the fact that they both are trademarks for very similar products.

We are in the position of having established the parameters of the valuation process and we can apply these in the context of an actual valuation.

VALUATION METHODOLOGIES

What does an item of IP represent? It represents an entitlement to whatever flow of future income can be earned from or attributed to it. In this regard it is strikingly similar to an option. However, because of the range of different variables set out in C. PARAMETERS, the appropriateness of the valuation method adopted will vary according to circumstances, the type of IP and the form the transaction may take. Some examples are set out below:

- outright sale;
- in-house manufacture and distribution;
- license restricted;
- license unrestricted;
- authorized distributorships; and
- franchise.

Where IP valuation methodology is being used to evaluate the most appropriate strategy for exploiting an item of IP the holder needs to estimate the risks and rewards involved in each alternative. Then the current and potential value of the asset under each scenario should be assessed. As the purpose of the valuation exercise in this context is about maximizing return in relation to risk, the IP holder should also asses the value of licensing in as an option.

Alternative Valuation Methodologies

Several methodologies exist for identifying the value of IP. The valuer should identify the primary methodology that best satisfies the valuation criteria.

The three main approaches are:

- **cost based**
- **market based**
- **economic based**

Cost-based methodology

There are two main cost-based methodologies, which can be applied to valuing IP:

- historical cost;
- replacement cost.

Historical costs measures the actual cost incurred in creating the IP. The method has a fundamental drawback. There is no direct correlation between expenditure on an asset and its subsequent value. For example, a patent or a trademark may be developed or promoted at huge costs, but the product may never reach the market or the trademark may never appeal to the potential customers.

It is therefore not recommended that the historical cost method be used as the sole means of calculating the value of the IP asset.

Replacement cost - This approach is based on the question: What would it cost to replace this asset or to develop an alternative? The value of a specific IP asset is correlated to the cost to replicate it or create an alternative. To identify the value one needs to estimate, for example, the cost to; establish a new trademark in the market to the same level of recognition as the one subject to appraisal or the cost to develop alternative patent technology.

This method also has both drawbacks and advantages. The principal drawback is how to estimate the future costs. If costs can be determined with reasonable confidence – as may be the case with establishing a brand - then the method is very useful for sellers as well as for buyers in their negotiations. A seller can use such a valuation by telling the buyer "If you do not buy my IP item, it will cost you this much for an alternative".

Market based methodology - This approach embodies two sub-methodologies:

- *Market Price Comparability* –
  The value of the IP is determined by reference to prices obtained for comparable IP in recent transactions. The methodology is attractive, being both credible and objective. The draw backs, though, for this method makes the approach less tempting. The problems are:

  - the number of transactions is limited;
  - information about the transactions is very scarce;
  - very limited probability of finding a directly comparable transaction within the relevant time frame (prices of any asset will vary over time).

  Whilst it is likely that IP transactions will gain in visibility over the coming years, in part because of the obvious need and the information technology developments of recent years, for the time being it remains very hard to identify the value of the IP assets through the method of comparable market price.

- *Comparable royalty rate*
  Although the number of transactions, which deal solely with the sale of IP, is increasing, the number of license agreements entered into is many times greater. This method provides a more feasible means of identifying a value.

Economic based – This, to all intents and purposes, comprises the construction of a business plan around an item of IP from which the potential benefits of ownership are estimated. As in any business plan, the costs associated with maintaining the revenue source are factored in as is the timing of revenue and cash flow. The resulting return is compared to the price of becoming an owner of the asset. If the price is higher than the expected total return, one should not buy the asset if the decision is

completely based on economic principals. If the price is lower than the expected return, then it may make sense to proceed with the purchase.

The future return is either in the form of a net cash flow or in a stream of royalty fees. The sum of the future net cash flow or royalty fees is correlated to the value of the IP.

The economic valuation of an IP has therefore two distinct components:

- identification, separation and quantification of the cash flows or royalty fees attributable to the IP;

- the capitalization of the future cash flow (today's value of future returns).

Identifying and Assessing the Value of the Revenue Stream

For quantifying a future revenue stream of an established item of IP, it may be sufficient to extrapolate the historic revenue stream into the future. For an unexploited item of IP identifying the cash flow attributable will involve a series of exercises such as competitor price comparisons, the returns generated by companies with comparable products and other market research acquired data. Where the royalty rate method is used, the return and the royalty rate can be regarded as synonymous.

Capitalization – Although we have made a series of calculations and ended up with a number, we still do not have a valuation. Money today is better than money tomorrow. Money which is expected to be received some time in the future is associated with a risk. The longer the period to an actual receipt, the greater is the risk and its worth in terms of today's money is reduced.

The risk is described and quantified in terms of the *"discount rate"* which is based on the expected inflation rate, the cost of capital and a premium which reflects the individual risk associated with the particular project to be valued.

A cash flow projection derived from the ownership of the IP assets is constructed. These cash flows are discounted back using the chosen discount rate, to a *"net present value"*. The result represents the estimated present capital worth of owning the IP asset. Where an economy is encountering economic turmoil, hyper-inflation may be experienced. In such circumstances it may be that an item of IP, with its revenue linked to sales price, represents one of the least risky investments available.

Scenarios and Cross-checks

Those of you who have been kind enough to follow this dissertation thus far will know that we have still not arrived at a valuation. The valuation is only as reliable as the estimates of cash flow, the timing of that cash flow and inflation forecasts to mention just a few of the variables. Substantial variations in all of these forecasts can quite reasonably be made. The

solution is to run a series of scenarios using those estimates/forecasts that seem the most probable.

Also specific risks and their outcomes should be identified and valuations run on the central assumptions. This takes into account the variation in parameters to which an IP asset can be subject.

All have their drawbacks as well as advantages, but the most common and accepted is to estimate the value through the economic methodology. In certain circumstances, one can apply different valuation methodologies to the same asset. The level of discrepancy can act as a crosscheck to that generated by the preferred economic method.

Judgement and tests of reasonableness

Parameters have been established, assessments and estimates made, the most probable scenarios identified and the calculations completed. Where we had no value for an IP item we now have the embarrassment of too many. There is no hard and fast rule, which dictates which of the results, is the most reliable. The ultimate test is one of judgement and reasonableness. There will be circumstances where it is appropriate to be biased towards the optimistic and those where a conservative assessment will be the more appropriate. Provided the aggregate exercise has been carried out with integrity and diligence either choice is acceptable. As the expression goes, they will both be "within the ball-park". The level of discretion in the final selection can be reduced by employing, where there is a sufficiently meaningful sample, statistical techniques. Confidence weightings can be given to the different results and so forth.

LIMITATIONS

The valuation of IP depends upon the use of an interlocking series of estimates, assumptions and judgements. It is highly limited as regards the accuracy of its results. Also, no sooner do we become more comfortable with our abilities to exercise accurate assessment in one field of IP property, than human ingenuity and technology present us with new areas; be they database copyrights, biogenetic materials or website addresses. For these reasons there continues to be a level of discomfort and reluctance to accept IP valuations in some quarters.

The Paradox - The limitations of IP valuation are its greatest strength

An IP valuation is about the future, the future potential of an idea and the abilities of those backing it. It is a monetary expression of a level of confidence. That monetary expression is essential. In earlier presentations we discussed the importance of the private sector in realising the economic benefit contained in IP. Without expressing IP in terms of a monetary value it becomes impossible for the private sector to undertake IP investment, raise capital, undertake IP based transactions and so forth. The consequence would be a much-reduced level of innovation, lower economic growth– and the reduced likely hood of improving the quality of life for many of the world's people.

The fact that the values of patents are not listed in your newspaper the prices of stocks or commodities are should not detract from the merits of the IP valuation process. Remember, the prices you are reading are yesterday's. If anybody out there actually knows precisely what the price of IBM will be in four weeks time please see me after this presentation. What those who value IP are trying to do is give you tomorrow's prices expressed in today's value. The "ballpark" of the valuation area represents the area of opportunity that attracts both financial investors and the innovators. It represents the potential for the supernormal return that attracts the risk taker. It is the area where those with resources but no ideas and those with ideas but no resources can meet and benefit.

Undoubtedly we practitioners of IP valuation will continue to develop new and more accurate techniques; more extensive and reliable data will become available to us. The size of the ballpark will diminish, investment in IP will become less risky, the number of super-normal return opportunities may fall, but comfort factors will rise.

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