



Our thoughts and ideas are the building blocks for future business success. So how do we nurture and protect this valuable treasure trove to ensure we make the most of its potential?

Our second LESI Business Briefing explores ...

THE VALUE OF INTANGIBLE ASSETS





INTRODUCTION TO THE LESI BUSINESS BRIEFINGS

Fiona Nicolson
President - LESI

Hello and welcome to this Business Briefing, the second of three business briefings published by the Licensing Executives Society International ('LESI').

LESI is the world's leading membership organization for professionals and business people involved in the business of IP – indeed our LESI tag line is 'Advancing the business of IP Globally'. We have 33 member societies and more than 8,000 members in over 90 countries worldwide.

As President of LESI, I have made it our mission this year to provide useful tools for our members and for companies that rely on licensing technology to grow and further their businesses.

For those involved in the business of IP for the first time, these briefings provide valuable information that may help your efforts to be successful. I hope you find this Business Briefing — as well as the others in this series — useful.

They have all been written by LES members who are experts in their subject and active in licensing in various markets throughout the world.

Our LES members have an incredible amount of experience and expertise on IP matters. During the course of the year, LES Societies provide a variety of educational and networking opportunities both locally and internationally. The back page provides more information on the authors, how to join LES and more information on this specific topic.

A special thanks to the **leaders of the LESI Committee** who have led this initiative, working tirelessly during the last year to produce these Business Briefings, namely **Karin Hofmann of Vienna University of Technology, Don Drinkwater, Director of Licensing at Bose Corporation, and Danie Dohmen, a partner of Adams & Adams in South Africa.**

London, May 2020



CONTENTS

SO WHY DO WE VALUE INTANGIBLE ASSETS?	4
VALUE VERSUS PRICE – LET’S GET SOME DEFINITIONS AND CHARACTERISTICS	6
IT ISN’T EASY VALUING AN ASSET — BUT THERE IS A METHOD	6
HERE, WE NEED TO PIN DOWN SOME DEFINITIONS:	7
ONE EVALUATION - SEVERAL / MULTIPLE OBJECTIVES	8
WHEN DO YOU NEED TO ASSESS THE VALUE OF AN IP ASSET?	9
HOW TO DEAL WITH THE UNCERTAINTIES OF IP	10
SO WHAT ARE THE APPROPRIATE METHODS OF VALUATION?	10
LOOKING AT THE INVESTMENT: THE COSTS APPROACHES	11
THE MARKET APPROACHES TO VALUATION	12
THE REVENUES APPROACHES TO VALUATION	13
THE REAL OPTIONS VALUATION AND REASONING APPROACHES	16
THE VENTURE CAPITAL METHOD OF VALUATION	16
HOW TO MANAGE AN IP VALUATION	18
ABOUT THIS LESI BRIEFING	19

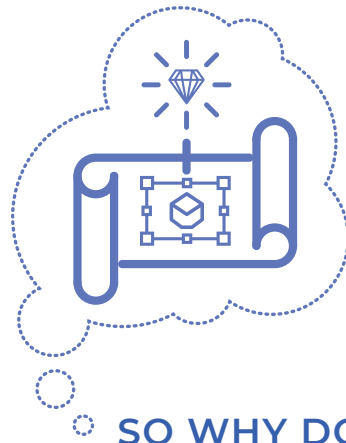


Let’s start with two definitions:

Tangible: *perceptible by the touch: capable of being possessed and realized: material, corporeal [Latin. tangibilis – tangere, to touch].*

Intangible: *not tangible or perceptible to touch: insubstantial; eluding the grasp of the mind. Something intangible e.g. a supplementary asset such as goodwill.*

Source: Chambers Dictionary



SO WHY DO WE VALUE INTANGIBLE ASSETS?

We live in a rapidly changing technological world. Digital disruption, tech startups and open source innovation are forging new industries and ways of working at an exponential speed. Every sector is being turned on its head — from communication to taxi drivers systems, health management, food delivery, new payment models and robotic manufacture.

All kinds of companies — from the largest global corporates to the most nimble young business that is scaling up — need to encourage and develop higher levels of innovation.

This requires the development of new knowledge to increase the pace of change and secure sustainable futures for business.

At the center of this process of adapting to rapidly disruptive technologies, we have intangible assets. Such intangible assets are more important now than ever before in the annals of industrial economic history.

You will already understand that the most common identified intangibles assets are related to technologies.

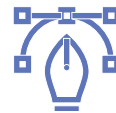
These include



TRADEMARKS



PATENTS



DESIGNS



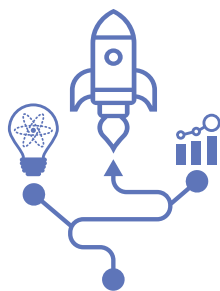
COPYRIGHT



KNOW HOW or TRADE SECRETS

We will be exploring this in more detail in in this document and in the third of the LESI Business Briefings.

But how you value the intangible assets of your business is fundamental to determining its future success – or otherwise.



For the nimble start-up ...

Every day we see new apps coming to the mobile market place. While the coding software might be standard open source, the invention comes from the ideas and the brains of the creators.

The value in all of these nimble startups is not in the bricks and mortar but the generation of

new business models, where the value lies in the potential growth and speed of technology adoption.

Amid this ever-faster change, the valuation of intangible assets is paramount to achieving new innovation models and streams of revenue.

Here there might only be a window of opportunity when the value is at a premium, but this window can shut quickly if competitors catch up and overtake.

How does the emerging business define the pricing of its intangible assets to ensure that it becomes a viable and sustainable business entity? And how does it use its limited resources to grow in an orderly way?



... and for the established global corporate player

Established industries and corporate organizations are being forced to grapple with radical change. A glance at the balance sheet of listed big companies shows that today's economy is strongly dependent on intangible assets; this is a direct consequence of the knowledge-based characteristics of most branded goods and services for profitability.

The intangible assets, based on Intellectual Property (IP), have played a central role in the value creation process.

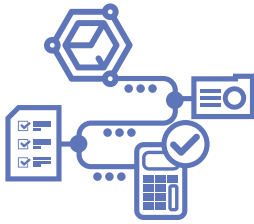
Managers face complex decisions concerning the future of their portfolio of IP assets, which generally consist of one or several among patents, trademarks and know-how. But the established corporate with clunky legacy systems has to look at new ways to unlock its IP and remain competitive in the face of massive digital disruption from nimble competitors.

For the larger companies, there is a pressing set of complex decisions about:

- the allocation of limited resources to a few assets (R&D projects, license or technology transfer and acquisitions) and the discarding or sale of others;
- the definition of a reasonable price one is ready to pay when proposing an offer for a technology sale; and
- the definition of a price that one is willing to accept for their intangible assets.

IP valuation is only one of the inputs necessary for those decisions. A seller's opinion about the value of the asset might be massively different from a buyer's point of view. This can be an emotional issue if someone is contemplating selling their life's work. As a consequence, one must be aware of the credibility and limits of the value of intangible assets.

The aim of this LESI Business Briefing is to explain and demystify these aspects.



IT ISN'T EASY VALUING AN ASSET — BUT THERE IS A METHOD

We can all have a different opinion on the value of an object. At an art auction, a painting under the hammer goes to the highest bidder, but its value will be determined by someone's subjective opinion of the art.

The exercise of valuation aims to determine the value of an object. This section illustrates how subjective values are and how unstable they will be, especially when forward-looking.

A valuation is not exclusive to one type of intangible asset and a valuation is not necessarily similar in each situation.

A mountain climber, for example, will determine the outside conditions, the terrain and rock formation before deciding what equipment to carry and use; in the case of valuation, the equipment is the specific valuation model to be used.



A price is where the value at which one is ready to give away an object meets the value that another is ready to pay to own or use that.

The valuation of an IP asset faces two uncertainties: firstly, the uncertainties related to the model of estimation; and, secondly, the intrinsic uncertainties associated with IP as an object of valuation. Both deserve our attention and we should bear this in mind when interpreting the results of a valuation exercise.



VALUE VERSUS PRICE – LET'S GET SOME DEFINITIONS AND CHARACTERISTICS

We start with an important point: a value is different from a price. Don't forget this. A value can be defined as the monetary importance associated with an object and can be explained by a large variety of factors, not always quantifiable.

This can be economic (the potential to sell the asset against liquidities), strategic (the wish to enter a market), or even sentimental (the value to family members of items of furniture may be priceless, yet of little market value).

A price is what is actually paid by the market for an object. It is usually, but not always, the result

of a convergence of two values in a process of negotiation: where the value at which one is ready to give away an object meets the value that another is ready to pay to own or use that same object.

Prices can be driven by strong references, often referred to as market references. But this is not always true, especially in the case of intangibles, where any similar objects are generally not available, proposed or exchanged. Indeed, some prices result from a unique transaction, called OTC (Over The Counter) in the financial jargon.

Markets exist so that buyers and sellers can be better informed about prices, but the primary function is to ease the exchanges and provision of information to secure a sale.

The market role is only achievable when many similar objects are exchanged and the information about the realized trading conditions are available.



Here, we need to pin down some definitions:

- Assumption:** or IP valuation, an assumption is a hypothesis used to define an input to a mathematical model. Determining the right inputs implies a large spectrum of expertise, and thorough analysis of all characteristics of the underlying IP to design a model that best represents the asset.
- Estimation:** it is a guess at an amount, size, or something else in somebody's opinion. It is therefore an uncertain prediction of value.
- Evaluation:** it is the process of considering or studying something carefully in order to decide how 'good' or 'bad' it is, thus generally involving a scale, applied to qualitative aspects (geographical coverage, strength of the IP, quality of citations) associated with a grade and to define a score. This process allows the comparison between several IPs of a similar nature.
- Projection (or future sales projections):** is a set of assumptions about the future economic state, based on the information that one has collected. Projections can be the result of an estimation process (the general case in IP Valuation), or based on calculations following invariable laws (the general case in engineering or physics for example).
- Valuation:** is a judgment about how much money something could be sold for.

IP valuation is the result of a model based on assumptions supposed to represent the future benefits one can expect from the IP, and is as such the result of the expert's opinion given the facts and circumstances determined at a given time. It is the expression of a good (or service) in monetary terms.

An exercise in valuation translates a vision of a project for a particular event and on the basis of available information. Many possible future environments are plausible, but not all are thought ahead.

In short, it is worth remembering that IP valuation is not measurement; it is estimation, a mark to serve decision-making, a mark to enter the building of a relationship with another party. It is dependent on technical, human and environmental factors that may be improbable.



It is worth remembering that IP valuation is not measurement; it is estimation, a mark to serve decision-making, a mark to enter the building of a relation with another party.

A valuation is also a mathematical concept of a narrative, centered on the valuator and his expertise. It follows that valuation of an IP asset has a finite timescale using available information which is unlikely to be exhaustive. However, a solid mathematical model can reduce external uncertainties.

TABLE 1:

Main motivations for an operation related to IP

	FINANCIAL OPERATION	STRATEGIC REASON	LEGAL OBLIGATION
Acquisitions and divestitures of IP and technology assets	✓	✓	
Licensing and technology transactions	✓		✓
Joint ventures and joint development arrangements	✓	✓	
Research and development agreements	✓	✓	
Securitization of IP in debt transactions		✓	✓
Technology services agreements		✓	
IP portfolio development counseling		✓	
IP due diligence	✓	✓	✓
Financial reporting			✓
Extra-financial reporting		✓	
Tax obligation/ Transfer pricing			✓
Litigation			✓

FIGURE 1:

The objective of IP valuation



One evaluation - several / multiple objectives



WHEN DO YOU NEED TO ASSESS THE VALUE OF AN IP ASSET?

There are many circumstances where a valuation is required. These can be:

- Financial operations such as a sale, purchase or licensing;
- Strategic operations, when the IP acts as a means to serve wider value creation;
- When IP is the subject of legal obligations, such as tax obligations or reporting; and
- Where it is required to defend or to attack a legal challenge or to prevent litigation.

Most of these circumstances have multiple incentives. For example, assets acquisitions and sales are often driven by value creation motives. However, they also have a strategic consideration, such as gaining market shares or entering a new market.

Other circumstances, such as entering into agreements, whether they are R&D or financial driven (i.e. in the case of a joint venture), may not immediately create value, and are likely cost burdens in early stages, but act as a milestone towards long term value creation.

Those also have an important legal content, necessary to identify — for each partner — the allocation of costs and surpluses. We assume their primary goal is strategic.

Some IP valuations are processed only for legal obligations, with more or less strength, but happen to have some financial and strategic content too.

For example, a voluntary disclosure becomes an obligation if all competitors provide information on IP. According to the framework of reference, this can result in the monetization of the IP and thereby carry a financial content.

IP assets can be subject to valuations not pursuing their own value creation or maximization role, but to serve a broader entity strategy or other assets.

For example, IP can be used to increase or maintain the current performance or to collect funds, by playing the role of guarantee.

IP can also serve as a collateral, like any other asset, provided that the fund provider recognizes its value.

Like any other asset, IP can be used as collateral, provided that the fund provider recognizes its value.

As a consequence, the challenge of the IP valuation specialist is to determine the best approach in each case.

In the next section, we deal with some of these aspects. Although nothing about an IP asset should be neglected, the context depends on the relative weight and requirement of the type of valuation.

For example, in an IP valuation with a legal context, one must consider the legal assumptions; in a transfer pricing context, one must adapt to tax standards; and for M&A, the standards will depend on the details of the transaction, and so on.

HOW TO DEAL WITH THE UNCERTAINTIES OF IP



IP assets are by nature uncertain; the scenario of their lifetime cannot be known ahead. For example, a patent may have a lifetime of 20 years but at any time a better patent could render it obsolete.

A trademark could be dubbed as having an indefinite (unlimited) life, but revenues are sensitive to brand reputation and can be abandoned or lose their reputation if the trademark no longer meets the original requirements. Know-how is vulnerable to the person who holds it: when the only employee aware of a peculiar process quits, a substantial part of this knowledge could walk out the door.

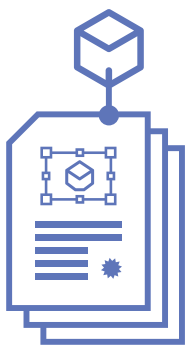
Risk exposure also supposes that several paths are possible. One recurrent example has been that of the transfer of the full rights or of a portion of those. This implies a range of possible valuation methods might not be able to capture the outputs.

In addition, one should bear in mind that a valuator's appetite for risks may differ: the manager aware of certain risk exposure can decide to face

this risk or to reduce it. IP valuation is based on subjective points of view and the expert's role is to minimize the impact of this subjectivity.

IP valuation is based on subjective points of view and the expert's role is to minimize the impact of subjectivity on the IP value they are determining.

Finally, the time at which valuation is done is a critical element. IP valuation reflects the opinion and judgment of the experts concerning the future benefits the underlying IP assets will procure, i.e. what the facts, circumstances and projections available at the time of the valuation allow to predict. Any change in these implies a probable change in the assessed value.



SO WHAT ARE THE APPROPRIATE METHODS OF VALUATION?

We can see that IP valuation is a difficult exercise: the value of an asset is mainly an opinion, strongly depending on the facts and circumstances related to its creation, usage and maintenance.

Common cases of need for valuations are:

- Litigation, and more likely the defense against the illegal use of an IP, whatever right is concerned;
- Licensing, whether in or out, i.e. obtaining or providing with the permission to use a property. Licensing is a total or partial transfer of the right to use; and
- Trading: a transfer of property/ownership right which includes both the purchase and the sale of an IP technology. Such operations typically arise in mergers or acquisitions as they imply transfer of ownership.

The rest of this section focuses on the methods of valuation, the context in which they must be used and the intrinsic limitations.

While carrying out the valuation of an intangible asset, one must bear in mind that the exercise essentially consists of evaluating the future benefits.

Time is an essential component of IP assessment. The value at any given point in time will normally vary when another valuation is done at a later point in time or on a different timescale.

Time is an essential component of IP assessment. The value at a particular point in time will normally — but not always — vary when a fresh valuation is done at a later point or on a different timescale.

Although there are many possible ways to value IP assets, the following are the most commonly used. Each is classified based on the time horizon of the economic data they rely on:

- Methods based on actual data of the past: Costs Approaches;
- Methods based on actual contemporaneous data: Market Approaches; and
- Methods based on projections of future economic data: Revenues Approaches.

In addition, one method combines present and future data: the Real Options Approach.

Finally, IP valuations of startups need some specific adaptations, which will be dealt with below. Here we explain the main features of the valuation methods, and exemplify them with simple illustrative cases.

Looking at the investment: the Costs Approaches

The IP valuation methods based on historical costs are based on the value of the creation or the replacement of any given IP/Technology asset. Costs approaches are concerned with the estimation of the past investment.

In the case of approaches based on the value of IP creation, the process consists in incurring realized costs to form a global cost of investment; it eliminates any potential variation in the value (the only possible changes relate to costs allocation) because the conditions are unique and known.

In approaches based on the value of replacing the IP, the 'would be' price of replacing the asset is more speculative and somehow closer to the market approach, allowing for fluctuations due to changes in conditions.

The approaches are different.

In the first case, the following question over value must answer: What are to date the cumulated expenses spent to develop the IP or technology?

The contribution of costs approaches lie in that they provides a clear view of the value associated to the asset by the management. They are thereby an excellent descriptor of the past.

In the latter case, the question is different; what would be the price of purchasing an asset with the same exact characteristics of the IP or technology at the present time?

Generally, the types of costs taken into account are those needed both to create and protect the technology itself, i.e. R&D and patent filing and maintenance costs, when patents are filed.

The contribution of costs approaches lies in that they provide a clear view of the value associated to the asset by the management.

They are thereby an excellent descriptor of the past — including recent managerial strategies. Such value, compared to the economic value of the asset, testifies to the performance and choices made by the management team. Another contribution lies in the variation of the incurred historical costs, which depends on the quality and reliability of these figures.

Replacement is often of greater interest to competitors because it tells them what it takes

to reach a similar state of progress. Such value informs competitors about the nature and level of the existing barriers. It is likely to be only of minimal interest for the shareholders to know how much it would take today to build what has been built over the previous timescale.

This might be because the disappearance of this asset is unlikely and shareholders may be more interested in the performance of the management who may be exploiting this IP asset.

The main drawbacks of costs approaches are:

- It is very difficult to accurately correlate the value created by the IP to the costs incurred: many examples exist of pertinent work generating highly valuable assets, such as the Coca-Cola trademark, which was designed for free;
- Creating a new technology at a given point and not exploiting it, then repeating the creation at a later, more convenient point obviously implies loss of time-to-market, and generally time-lags. This introduces many unknowns and leads to highly questionable results. The replacement cost approach generally ignores the time lag, or tries to assess it with further assumptions, which diminishes its reliability; and
- These methods do not reflect the earnings power of the given IP or technology, and its ultimate accessible market shares.

Consequently, these methods are to be utilized whenever replacement is possible with a reasonable degree of certainty or if other methods cannot be applied accurately. Thus, for patent and know-how assets, methods based on costs are more adapted to early-stage technologies, where market estimates are not yet available and the implication that the value for the management

team is the same as other stakeholders' holds. They are generally not suitable for patents that are broad enough, for the same reasons.

On the other hand, cost-based approaches are generally suitable for brand valuation, especially business to business (B2B) brands or unknown brands.

The Market Approaches to Valuation

The market-based IP valuation methods try to compare the assets to similar intangible assets that have been sold or listed for sale in recent times.

Market approaches rely on the assumption that patents and patent families with characteristics matching similar patents will have similar values. Again, the timescale matters because more recent transactions will give a more reliable benchmark.

The principal benefit of this method is that it provides a reliable set of reference prices based on past transactions.

Of course, this only holds true provided the exchanges are recent and carried out on similar assets.

The method is therefore easier to mobilize when a liquid and active market exists for highly standardized products.

This approach is normally employed for technologies which are sufficiently mature or even fully developed, for products or services on the market, with real paying customers or close to commercialization.

The main difficulties lie in:

- The existence of, or access to, accurate data and databases listing comparable transactions;
- The effective comparability of the assets: the one that is the object of the real transactions and the one at stake. By definition, an IP asset is unique and it follows that using objective criteria to compare different assets is a challenge; and
- Contingencies: the facts and circumstances at the time of the transaction, such as the relative strength of seller/purchaser, the competitive intensity in the related market, may have a strong impact on the value.

The most advanced methods to compare transactions as objectively as possible are based on multiple indicators, although these have only been developed for patents or patent portfolios.

These consist in characterizing each patent or portfolio with a set of 10-20 objective indicators describing the patent and its business environment, e.g. patent family size, citations analysis, technical coverage, geographical coverage, legal strength, etc.¹

Finally, one can assume that the quality of the assessment will depend on two critical factors:

- That the indicators are sufficiently well determined so that comparability between patents and families and/or brands is reasonable and insures a reliable assessment of the value; and
- That the transactions database is sufficiently populated, classified and reliable.

¹ Measuring Patent Quality - INDICATORS OF TECHNOLOGICAL AND ECONOMIC VALUE; Mariagrazia Squicciarini, Hélène Dernis, Chiara Criscuolo, OECD Science, Technology and Industry - Working Papers 2013/03

The Revenues Approaches to Valuation

This class identifies the value of the asset with that of the Net Present Value (NPV) based on future revenues derived from it.

This implies the technology is sufficiently developed and valuers can estimate with a reasonable accuracy the future income of the new products and services derived from the technology.

The most common revenues-based valuations are made by computing the NPV of the cash flows related to the asset, i.e. are based on discounting the estimates of the probable future incremental cash flows generated by the IP/technology at stake.

The discount rate used to discount the individual cash flows: this is by far the most significant and challenging parameter to estimate in all Discounted Cash Flow computations: it involves an assessment of the future value of money (inflation) but also and more importantly an assessment of the risk carried by the future cash-flow assumptions.'

Although their principle is always the same (Discounted Cash Flows or DCF), it is common to name the specific valuation methods by the type of incremental cash flows concerned:

- Royalty Relief: one assumes the IP/technology can be licensed to an hypothetical generic independent third party, and computes the NPV of the hypothetical future royalty flows; and
- Other methods such as incremental revenues due to margin increases and/or cost savings or selling price increases.

The main difficulties here lie in:

- A correct assessment of the real part of incremental revenues strictly related to the IP/Technology itself: very often, the revenues generated by new products/services also rely on 3 other main so-called functions¹: the quality of the supply chain, the characteristics of manufacturing, quality of sales and marketing. So, if one computes the free cash flow from a business plan, the relative share of IP/Technology is generally much less than 100%; in fact, 20%-30% is commonly assumed, which can be related to the so-called 'Rule of Thumb': the value of IP/Technology in the overall business is around 25% of the total value of a business. One must be aware that using this type of approach should be done only in specific cases, and can only be qualitative, or to cross check realism of the more structured approaches;
- As a direct consequence of the above, a correct assessment of the royalty rate which one would expect to use in a real licensing transaction; determining the right royalty rate must be done by specialists, e.g. following a rigorous and replicable process when using benchmarks from license agreements databases (i.e. compare only comparable transactions, implying a rigorous accept/reject process, based not only on the technology comparability but also of the other facts and circumstances such as rights granted);
- The discount rate used to discount the individual cash flows: this is by far the most significant and challenging parameter to estimate in all DCF computations: it involves an assessment of the future value of money (inflation) but also an assessment of the risk carried by the future cash-flow assumptions. Alternatively, risk can be captured in the cash flow, under the form of a cash flow statistical or probable distribution, thus utilizing the cost of money as the discount rate. Nevertheless, the present state of the art consists in using the CAPM (Capital Asset Pricing Method) and capital market figures as references plus mark-ups to take account risks associated to the asset; and
- The expected useful lifetime of the technology before it is displaced by another one or simply phases out.

¹ As per OECD's definition of the way a (multinational) enterprise is organized and works

The following examples show what should be remembered about the sensitivity of an IP/Technology valuation to these parameters. The examples are simplistic: sales are growing at a constant growth rate, and computation is made for an infinite lifetime of the IP asset (so-called 'perpetuity'). Experience shows that it

nevertheless carries the general effects, in orders of magnitude. We used two types of royalty ranges, one centered on 5%, the other on 0.5%. As one can see, only a small variation of the discount rate (+1% on 10%) has as high an impact on the IP value than large variations of the other two parameters.

EXAMPLE 1:
5% range of royalty rates

		IP Asset Value		
		Discount Rate		
		9,0%	10,0%	11,0%
Royalty Rate	4,0%	67 M€	57 M€	50 M€
	5,0%	83 M€	71 M€	63 M€
	6,0%	100 M€	86 M€	75 M€

Yearly Sales : 100 M€

+ 1% Discount Rate Impact
-13% on IP Value

+ 1% Royalty Rate Impact
20% on IP Value

		Discount Rate		
		9,0%	10,0%	11,0%
		Sales Growth Rate	2,0%	71 M€
3,0%	83 M€		71 M€	63 M€
4,0%	100 M€		83 M€	71 M€

+ 1% Sales Growth Rate Impact
15% on IP Value

EXAMPLE 2:
0,5% range of royalty rates

		IP Asset Value		
		Discount Rate		
		9,0%	10,0%	11,0%
Royalty Rate	0,25%	4,2 M€	3,6 M€	3,1 M€
	0,50%	8,3 M€	7,1 M€	6,3 M€
	0,75%	12,5 M€	10,7 M€	9,4 M€

Yearly Sales : 100 M€

x 1,5 Sales Growth Rate Impact
15% on IP Value

x 2 Royalty Rate Impact
100% on IP Value

		Discount Rate		
		9,0%	10,0%	11,0%
		Sales Growth Rate	2,0%	71 M€
3,0%	83 M€		71 M€	63 M€
5,0%	125 M€		100 M€	83 M€

+ 1% Discount Rate Impact
-13% on IP Value

The following table shows in a nutshell what should be remembered about the sensitivity of an IP/Technology valuation to these parameters.



Parameter	Impact on NPV
Useful Life ↗	↗
Royalty Rate ↗	↗
Growth Rate ↗	↗
Discount Rate ↗	↘ ↘

The Real Options Valuation and Reasoning Approaches

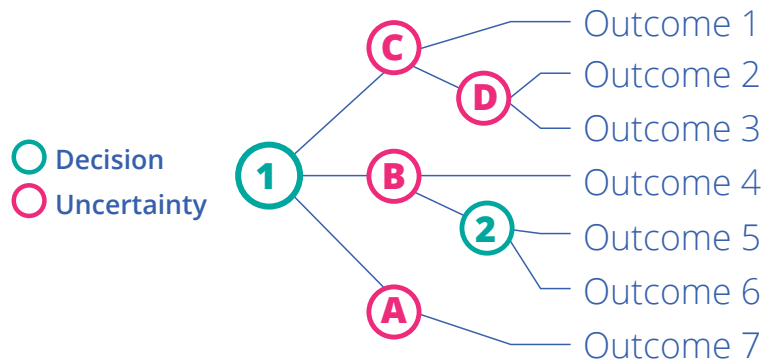
In analogy with financial options, this method associates the value of the IP/Technology to the right — but not the obligation — to exercise the option of investing into the new technology.

The RO Approach implies the recognition of flexibility and of multiple outcomes, taking into consideration the intrinsic uncertainty of the outcome of technological development.

A vision of possible outcomes is necessary and requires the input of all parties at stake, such as marketing and sales, R&D, manufacturing, and legal.

One of the main by-products of brainstorming meetings held between these participants is a strong sense of cohesion in managing and the developing projects, and a common and mutual understanding of the stakes and risks.

As far as the more technical part of the method is concerned, it generally relies on the Black and Scholes continuous time theory, or on lattice models in discrete time, from which economic decision trees are derived, such as the one shown below:



The underlying assumption is that the decision to invest or not at each decision point is reversible. RO allows dynamic projections and multiple scenarios, and thereby refines assumptions in a dynamic way.

There are two main ways to apply RO methods. The first approach considers the asset as a stock, with the value of the stock acting as the underlying asset.

The second approach is similar to that of the revenues-based approaches, in that the valuation relies on a business plan and on DCF as a proxy of the underlying asset value, which implies here also the determination of suitable discounting rates, for each possible case identified.

One of the strengths of RO methods is that they generate statistical distributions of values rather than ranges, from which one can deduce ranges and probabilities of occurrence for a given IP/Technology value, and the related risks.

The Venture Capital Method of Valuation

Another method — prevalent in the arena of the tech startups across the venture capital industry — is the Venture Capital Valuation Method. This investment model works with the fund investing at an initial time on a specific valuation.

Over a period of three to five years, although this could be a longer timescale, the fund's investors, many experienced business people or entrepreneurs, help the new company to grow and then the fund seeks an exit, selling all or part of the equity to a bigger company or to a larger fund.

The fund investors are keen to capitalize on their investment in this three to five year window, and will be seeking a multiple return on their initial investment and/or a specific internal rate of return based on the performance and scale up of the startup business.

This method depends on the perception of the investor, and implies the concept of time for discounting a future value of the new company.

Here the sale of similar startups is a reference point for the exit. For example, startups in similar industries might have a multiple of five times revenue with the startup raising capital expecting a multiple of eight times revenue, which a buyer will consider too high a valuation preventing the deal from being done.

In the venture capital industry, the value of the startup considering projection of future cash flows will be too speculative, because it is a very early stage.

In the venture capital industry, the value of the startup considering projection of future cash flows will be too speculative, because it is a very early stage.

Part of the valuation includes a personal perception of the investor considering mainly four elements: the team of entrepreneurs, their abilities and capacity to make the new company reach the defined growth goal; if the startup is attending a big market in order to be able to grow with a compelling business model, if they already have some sales or clear identified customers and finally the intellectual property protection of the key intangible assets.

A typical venture capital fund usually manages a portfolio of around ten companies, although this can be more.

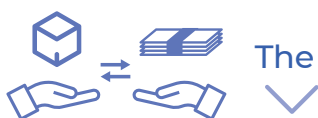
Part of the risk and return is a consideration of the complete portfolio where some startups will succeed while others will falter.

Some may not achieve the expected growth, some might break even, but at least one or two will be a highly successful startup that carry the complete portfolio, delivering an exit return of up to ten times the whole investment, that is about a 23%-28% return on average.

This depends on the industry and evolution of the tech ecosystem.

Usually an investor expects, let's say, 10X as the return of the investment (this will be in disruptive technologies), and the terminal value is \$10,000, then the post money valuation will be the terminal value divided by 10 or \$1,000.

Let's say the investor invests \$250 for 25% of equity, the pre-money valuation is \$750.



The formulas are:

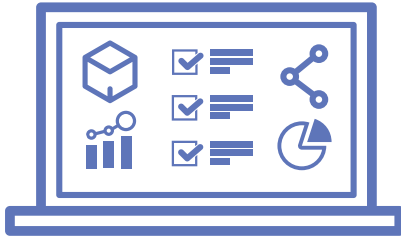
Return on investment (ROI) = Terminal Value / Post Money Valuation

or, equivalently,

Post Money Valuation = Terminal Value / Anticipated ROI

This method is dependent on the investor's perception of risk and their industry knowledge and experience, so the valuation of a startup will almost certainly be very different in the United States, Europe or LATAM market, even if it is the same industry.

Here again, it is the role of the expert to adapt to each case.



HOW TO MANAGE AN IP VALUATION

In order to ensure the best possible reliability of a given IP valuation, one needs to follow a strict methodology with well-defined steps, making sure that a different valuator, using the same steps, data and hypotheses, will reach a similar conclusion.

As has been described above, before starting any calculation, it is crucial to specify:

- The exact perimeter and characteristics of the asset;
- The context in which the valuation is done, and the way or the decision-making process for which the result will be used;
- Facts and circumstances: who are the stakeholders and what functions do they perform in value creation;
- The time-frame: at what date does one specify the value of the asset, and at what time this value will be used; and
- With what degree of (un)certainty are the hypotheses known; this is essential when future benefits are concerned, in a Revenue Method.

A detailed description of the asset and its future usage must follow:

- The technology at stake: a product, a process, a service, any combination of these?
- The protection: patents, trade secrets;
- The uniqueness and relative strengths/weaknesses of the technology;
- The way it is formalized: explicit, detailed and well described and/or implicit know-how, etc.; and
- The usage: will the commercial usage of the asset need complimentary technologies or is it standalone?

Only when all these aspects have been covered and documented, which often implies numerous and contradictory interviews, will you begin to gather the data needed, and choose the most relevant method for economic valuation.

Where possible, best practice is a combination of multiple approaches (e.g. RO and Revenues, Market and Revenues) to offer multiple views of the same asset.

Finally, you must, in addition to the suggested final intangible value of your IP asset, make sure there is an estimate of the acceptable range of values which has been determined, reported and documented. All in all ,good luck with your precious IP assets..

ABOUT THIS LESI BRIEFING

We hope you have enjoyed reading *The Value of Intangible Assets* and that it has provided you with some useful information on the topic. This briefing is one of a series for businesses on IP related topics. The other titles include ***License Your Valuable Assets*** and ***Managing Your Intellectual Property (IP)***.

This Business Briefing has been written by experts from all over the world who are members of the Licensing Executives Society (lesi.org).

As a member of LES you will be welcome to participate in our educational programs, receive our highly rated quarterly journal 'Les Nouvelles', access our membership database and participate in local and international meetings – see lesi.org for our meeting calendar.

Our local LES Societies would be pleased to provide more information on the topic of this guide and put you in touch with LES members who may be able to advise in more depth on this topic if required.

Many thanks to the authors of this guide namely:

- **André Gorius, PhD,**
Independent Consultant, former IP Valuation Director at Solvay, France;
- **Véronique Blum, PhD,**
Founder of Stradivalue, Associate Professor at Université Grenoble Alpes,
Associate Researcher at EMLYON Business School, France; and
- **Martha Laura López,**
Director, SIPI Fund, Mexico.





THE VALUE OF INTANGIBLE ASSETS

IP Valuation Business Briefing



DISCLAIMER

PLEASE NOTE THAT THIS BUSINESS BRIEFING AND THE VIEWS EXPRESSED IN IT ARE THE PERSONAL VIEWS OF THE AUTHORS AND ARE NOT THOSE OF THE LAW FIRMS AND/OR COMPANIES THE AUTHORS AND SPEAKERS WORK FOR, NOR THE VIEW OF ANY OF THEIR BUSINESSES OR CLIENTS. MOREOVER, THIS BUSINESS BRIEFING IS DESIGNED TO PROVIDE GENERAL BACKGROUND ON THE TOPIC ONLY AND DOES NOT CONSTITUTE LEGAL OR EXPERT ADVICE AND SHOULD NOT BE USED OR RELIED UPON FOR ANY PURPOSE WHETHER AS LEGAL ADVICE OR OTHERWISE. IF LEGAL OR OTHER EXPERT ADVICE ON THE SUBJECT MATTER IS DESIRED OR NEEDED, A LAWYER OR SUITABLE EXPERT SHOULD BE RETAINED AND CONSULTED.