HANDBOOK ON
VALUATION OF INTELLECTUAL PROPERTY ASSETS

MAIN APPROACHES

STEPS TO FOLLOW

POINTS TO CONSIDER

ICC INTERNATIONAL CHAMBER OF COMMERCE

Contents

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This handbook is dedicated to the memory of José Godinho,
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I. Background to the handbook

Intellectual property (IP) rights are now widely recognised as valuable assets and frequently play an important role in business strategy and overall corporate value. The valuation of IP assets has consequently grown in importance, as these become a major part of many companies' value and a driver of important market transactions.

Given the many different skills involved in any IP valuation process—such as IP, legal, accounting and tax—it is often challenging for the different professionals involved to approach the process unless they have a common understanding of this subject.

To help businesses navigate this increasingly important area, ICC has developed this handbook to provide a practical overview of the main aspects in IP valuation and to serve as a common knowledge base for the different parties involved in the valuation process.

The handbook was developed with the help of a 30-strong group of experts in different domains (such as tax, accountancy, customs, and intellectual property) from 15 countries to ensure a multidisciplinary and international approach.

ICC hopes that this handbook will be a useful reference tool for both business and valuation professionals and will facilitate consistent approaches to valuation of intellectual property, which has become an indispensable component of international trade, investment, and economic development.

II. Introduction to intellectual property valuation

A. IP valuation: preliminary aspects

This chapter introduces the particularities, variables and purposes of IP valuation, which the World Intellectual Property Organization (WIPO) defines as "a process to determine the monetary value of subject IP, which must be separately identifiable."

One way of measuring the value of an asset is to estimate the expected future economic benefits that can be generated by the asset. The more reliably those benefits can be measured or estimated, the more precise is the valuation.

It is important to note that IP assets do not have an absolute value—they may have different valuation results depending on how they can or will be put to commercial use and by whom.

Furthermore, a valuation exercise can be inherently subjective. There are a number of factors that play a key role in IP valuation: the expected economic benefit is usually influenced by legal factors (for example, will the IP right be granted by the patent office), technological uncertainties (for example, is the technology ready to be commercialised) and market forces (for example, how are competitors evolving on their respective IP).

In a nutshell, the different variables which may influence the value of IP assets include the following:

- **Valuation context:** the reason why the IP is being valued, the benefits expected to be generated by the IP asset (e.g. market entry, access to technology, cost saving, etc.), and who stands to benefit (for example, the IP rights owner, the licensor, etc.);
- **Time:** the moment in time when the valuation is being carried out, for how long the IP rights will be held (considering, for example, patent life or the duration of a licensing agreement);
- **Legal status:** registered and unregistered IP, strength of the IP rights, infringement issues;
- **External variables:** existence of legal, technological and market uncertainties when estimating the future economic benefit of the IP asset;
- **Geographical reach:** where the IP asset will be exploited, where it is protected;
- **Others:** tax matters, interest rate, among others.

Monetisation of IP

There are many ways for IP assets to generate economic benefits. One approach is to commercialise an IP-protected product. An IP asset can also bring economic benefits by being licensed or sold to third parties, by increasing the owner/licensee's bargaining power in negotiations with suppliers, customers or other partners, by providing access to the market, or by creating barriers to entry to competitors, among others. In certain cases, the asset does not have to be exploited directly.

IP monetisation can thus be either direct or indirect:

- **Direct**—via trademark and patent assertion; IP trading, licensing and exchange; the use of IP as collateral for loans or for securing financing/investment; through merchandising and franchising (in the case of trademarks, designs and copyright).
- **Indirect**—by applying the IP assets to products or services, which are then sold to customers.

Each mode of monetisation has its own valuation context, go-to-market strategy, risks and upside. For example, asserting patents or trademarks against infringers is time-consuming and, especially in the case of patents, requires substantial technical and legal expertise, and can be very expensive. However, in many cases, asserting patents or trademarks is not undertaken as a means of monetisation in itself, but rather to stop infringers and ensure exclusivity for an important product to be commercialised in the market where the potential infringement could take place. If successful, the benefits of exclusivity can be significant.

Licensing is a common way to monetise technology-related IP as well as IP related to branding and creations. Merchandising is a form of licensing which allows IP owners to capitalise on the reputation of well-known characters or logos (which can be protected by copyright, design and or/trademarks) by licensing them for uses other than their original use. Franchising includes the right to use IP rights, such as trademarks and designs, and also includes transfer of know-how and a broader range of rights and obligations. Early-stage technology may be either be licensed out by research institutes and academia to companies for further development, or spun-out into companies (usually initially staffed by faculty or students) whose equity is then monetised.[1]

Indirect IP monetisation is simply the conversion of IP into products and services for the business or consumer markets. The key role of IP in this mode is to protect the "price premium" of such offerings. Businesses are able to charge more for a product or service thanks to the market exclusivity afforded by their IP assets, whether it be a trademark-protected brand, a patented technology or protected design. Such IP rights allow companies to provide a unique offering to customers and distinguish their products and services from those of competitors.

B. Purposes of IP valuation

Valuing an IP asset is usually a means for achieving a broader goal. The main purposes for undertaking an IP valuation are listed below:

- **Technology transfer by licensing or sale/purchase**

In this case the valuation process supports the negotiation process. As in most transactions, the seller (or licensor) and the buyer (or licensee) have a different perspective of the IP asset(s) under negotiation and estimate different values (due to asymmetric information, different market expectations and even the use of different valuation approaches). During the negotiation process the parties will aim at agreeing on an acceptable transaction value.

1 The Massachusetts Institute of Technology (MIT), the University of Cambridge and Stanford University have made significant profits from such activities. However, some studies have suggested that high profitability is rare, and that, for many research institutes and universities, licensing and spin-off activity has proved either only slightly profitable or even loss-making.

Mergers and acquisitions (M&A), joint ventures and strategic alliances

In such transactions, the IP portfolios involved may have significant economic value and be one of the key aspects to negotiate. In addition, after the transaction is made, it may be necessary to value the IP portfolio again for accounting and taxation purposes.

Financing, bank loan collateral

In some situations, companies with valuable IP portfolios (for example, tech SMEs; or in the film industry) can use the IP assets as bank loan collateral for financing growth. Although some lenders are reluctant to accept IP assets as collateral due to uncertainty surrounding their valuation and limited liquidity, they are becoming more widely accepted.[2]

Insuring IP Assets

Potential IP-related litigation costs remain a significant concern. In this situation, companies have the chance to invest in Before the Event (BTE) legal expenses insurance (LEI), providing them cover against potential future legal costs. IP valuation is one of the main criteria considered by insurers when setting the premium.

R&D decision-making

When deciding on whether to continue investing in R&D, decision-makers may consider the potential of any new IP to generate future economic value.

Portfolio management

Decisions such as abandoning, licensing or maintaining IP assets may take into account the expected future benefits generated by these assets. Although some decisions can be made based on a qualitative assessment, valuation can also be performed to support decision-making.

Calculation of damages or enforcement of IP rights

Valuation may help formulate a strategy in response to infringement of IP rights by a third party or when a protected third-party IP asset is exploited internally without permission. Depending on the valuation results, different approaches may be pursued, such as directly informing and negotiating with the third party, having recourse to mediation or arbitration mechanisms or even court action.

Taxation

When assessing intercompany or third party transactions and structures involving IP assets, tax authorities usually require the IP assets involved to be valued at arm's length,[3] especially

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2 In the US for example, between 2011 and 2016 almost a million IP-backed loans were granted by financing entities. Government lenders in China, Korea and Singapore are also active in this field—for example, the China Development Bank pledged the equivalent of USD 1.3 billion against patents and trademarks in 2014—see *BofA, JPMChase & Morgan Stanley are top banks for patent loans* (24 July 2017), https://ipcloseup.com/2017/07/24/bofa-jpmchase-morgan-stanley-are-top-banks-for-patent-loans/ .

3 The arm's length principle states that transactions should be valued as if they had been carried out between unrelated parties, each acting in their own best interest. See *OECD Glossary of Statistical Terms*, https://stats.oecd.org/glossary/detail.asp?ID=7245 .

in the context of operations in different countries. In the area of transfer pricing, valuation techniques may be used in some circumstances by taxpayers and tax administrations as part of one of the five OECD transfer pricing methods, or as a tool that can be usefully applied in identifying an arm's length price.[4]

Accounting, financial reporting and investor relations

IP assets often represent an important portion of the value of a company. As a result, international accounting standards (e.g. IASB and IFRS) now recognise IP assets as specific assets separate from goodwill, setting prerequisites and approaches to be used in each situation.

The international accounting rules[5] specify that initially intangible assets (including IP assets) are measured at their cost.[6] If an intangible asset is acquired as part of a business combination, the asset's cost is defined as its fair value at the acquisition date.

In subsequent years, entities continue to carry the intangible asset at cost, less any amortisation and any impairment losses.[7] Impairment testing seeks to ensure that an asset is not carried on the entity's books at more than the recoverable amount of the asset.[8] The recoverable amount is defined as the higher of fair value of the asset less cost of disposal, and the asset's value in use.[9]

The concept of fair value is therefore central to the valuation of IP assets under international accounting rules. IFRS 13 defines fair value as "the price that would be received to sell an asset… in an orderly transaction between market participants at the measurement date". The rules recognise that it is not always possible to find comparable prices in the marketplace, and that such prices may need to be estimated. For the purposes of such estimations, the IFRS mentions the same widely used valuation techniques that we describe in this handbook: cost approach, income approach and market approach.

Other situations

According to WIPO, the donation of IP assets to charity has been on the rise. Besides the charitable purpose, in many countries donors have access to tax benefits, which may be based on the value of the IP asset at the time of donation. The prerequisites and limits of such tax benefits depend on the jurisdiction.

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4 See *OECD Transfer Pricing Guidelines*, July 2017, s. 6.153. p. 301, https://read.oecd-ilibrary.org/taxation/oecd-transfer-pricing-guidelines-for-multinational-enterprises-and-tax-administrations-2017_tpg-2017-en#page1 .

5 Comprised in the International Accounting Standards (IAS—from 1973-2001) and the International Financial Reporting Standards (IFRS—since 2001). Readers and practitioners will also need to consider any local accounting standards that may be applicable, e.g. US GAAP, UK GAAP, Deutsche Rechnungslegungs Standards, to mention but a few.

6 IAS 38.

7 If there is an active market for the intangible assets (e.g. production quotas, fishing licences, taxi licences) the enterprise may opt for the revaluation model, which is based on fair value—IAS 38.75.

8 IAS 36.

9 "Value in use" is the present value of the future cash flows from the asset or its cash-generating unit.

IP assets may also be transferred through inheritance, based on a will or inheritance laws. When a jurisdiction has to divide the residuary estate among the beneficiaries, IP assets are valued for the purposes of the division.

C. IP valuation standards

The increasing importance of IP rights as tradable assets for most corporations has been followed, among others, by more attention paid to transparency and accuracy in the valuation process. This has resulted, in recent years, in the introduction of different standards and/or guidelines in various jurisdictions.

Standards represent a basic framework to consider when assessing the monetary value of IP rights—the valuation approaches, the principles and factors to ponder when valuing different kinds of assets. They provide guidance to the experts carrying out the valuation and help users of the valuation report understand the underlying valuation approach.

At the international level there are several widely known standard-setting bodies, such as the International Organization for Standardization (ISO)[10], the Organisation for Economic Cooperation and Development (OECD), the International Accounting Standards Board (IASB) or the International Valuation Standards Council (IVSC). Besides the international bodies, some regional organisations, such as the CEN (Comité Européen de Normalisation), and national ones, like the Deutsches Institut für Normung (DIN), the Association Française de Normalisation (AFNOR), the British Standards Institution (BSI) the Institut der Deutschen Wirtschaftsprüfer (IDW) and the Austrian Standards Institute (ASI) also set standards applicable to IP valuation.

10 In relation to brands, relevant standards include ISO 10668 on Brand Valuation and ISO 20671 on Brand Evaluation.

III. IP valuation approaches and underlying methodologies

A. General overview

Different techniques are used when valuing IP assets, though they usually share similar concepts and principles at their roots. Most institutions and professionals around the world recognise a few methodologies as the most accurate, objective, and defendable models to apply in the IP valuation process.

In these commonly used methodologies, IP valuation is an inter and multidisciplinary study, in which the process of valuing IP assets—by nature "innovative" and "different"[11]—requires a comprehensive investigation and understanding of the asset(s) under study, and of any other direct or indirect conditions which may affect—positively or negatively—the value of the asset(s).

The IP valuation methods may seem very simple at first glance. Indeed, they are not hard to understand in themselves; the complexity is in the execution of the methods, which calls on the expertise of the valuer.

These methods can be generally divided into two groups: qualitative and quantitative valuation methods. In the context of patents, for example, qualitative valuation methods attempt to rate and score patents based on factors such as the strength and breadth of patent rights and their legal certainty. Quantitative valuation methods attempt to calculate the monetary value of patents, including three major approaches[12]:

- **The cost approach;**
- **The income approach;**
- **The market approach.**

Each of these methods may present a number of variations, whose applicability is to be decided by the valuer based upon the particular circumstances of the asset.

While there are differences between valuations for transfer pricing purposes and financial purposes, in both cases the valuation process will "*leverage the same information using the same set of projections, as well as a similar set of market comparables*"[13]. Even in different valuation scenarios, the information and the approaches used to reach an objective conclusion of value are similar.

Of the three valuation approaches, perhaps the least widely used is the cost approach, because value expectations usually exceed the cost of creation of an IP right. In the market

11 See *Final Report from the Expert Group on Intellectual Property Valuation* (2013), p. 12, European Commission, https://publications.europa.eu/s/l38f .

12 See *Valuation And Exploitation Of Intellectual Property—STI Working Paper 2006/5*, pp. 24-26, https://doi.org/10.1787/18151965 .

13 See *Creating the Bridge Between Transfer Pricing And The Valuation Of Intangibles* (2016), http://www.markspaneth.com/insights/service/service/creating-the-bridge-between-transfer-pricing-and-the-valuation-of-intangibl .

approach, the main difficulty lies in finding reliable information on comparable transactions or valuations. The income approach tends to be the most frequently used approach. It requires estimating future income and profitability streams and discounting them back to a present value. Estimating future performance is a highly subjective exercise, and the valuer strives to cross-check all assumptions and bring as much impartiality into the process as possible.

B. Preliminary analyses

If an IP right doesn't contribute to the creation of economic benefit, it may have no financial value. Before investing the resources into a comprehensive valuation exercise, it is therefore necessary to make some preliminary considerations.

The first thing to consider is whether the IP asset can be identified separately from other assets, even if the IP asset is not formally registered. There should be evidence of the existence of the IP right, such as a trademark registration, a patent, a licence agreement, well-documented technical know-how, etc.. Internally generated software is normally identified in the financial statements under international accounting standards. Additionally, it should be possible to identify the income stream from the IP right, separately from the contribution of other assets used in the business.

Having established whether the IP right is separately identifiable, two important factors which influence the ability of the IP asset to contribute to the creation of future results should be considered: the strength of the legal protection—the IP right should usually have some form of legal protection and not be in the public domain—and the IP right's strength in the market.

Legal strength

Value will tend to reduce if an IP right is likely to be challenged, or if it is easy for a competitor to design around the IP right. The same is true if it is very difficult or expensive to combat any infringements. It is also important to verify whether the IP right can be registered and if so, whether it has been registered in all the relevant jurisdictions, and whether these rights have a limited duration (e.g. patents will generally expire 20 years after filing). When valuing an IP right in a licensing agreement, key factors to consider are the duration, exclusivity, and scope of the licence (products/services covered and territorial scope).

The legal strength of patents

Valuing a single patent, or patent portfolio, is a complex exercise as the legal strength of a patent will change throughout its life, and so will its value.

Before the patent is granted, the value of the patent application can fluctuate depending on e.g. whether the priority right and/or the Patent Cooperation Treaty route are used to file the application in additional jurisdictions, and on whether the patent is granted with all the claims as filed.

The value of a patent may still fluctuate significantly once it has been granted, as a patent can be opposed, possibly resulting in its revocation, which then may be appealed. Also, since patent offices are independent, obtaining a patent from one office does not guarantee that others will decide the same. The existence of litigation procedures, and their outcomes, will also influence the value (and so will the significant litigation costs incurred). Finally, the value is also determined by the number of years remaining before the expiration of the patent.

The parameters outlined above should be considered in conjunction with other non-legal parameters for valuing patents, such as the competitive advantage to the product or process added by the invention.

Market strength

In their business reviews and long-term plans, companies assess their market strength and look for ways to protect and grow their market share profitably. Valuing an IP right uses a similar approach: IP assets are increasingly at the centre of any successful corporate strategy. When contemplating whether to either invest in the new IP or to maintain the existing asset, companies face the following questions:

- Is there a market for products or services commercialised under the IP rights? What is the market size and value? Is the market growing, and what is the probable long-term growth rate?
- Who are the competitors and potential competitors? What is the potential market share?
- Does the IP right present a barrier to entry for new competitors? Can existing or new competitors easily work around the IP right?
- For new products or services, are they ready for the market? What further investments are needed to achieve market readiness?
- Can the products or services derived from the IP rights be expanded to new territories, or applied to new ranges of products or services? At what cost and over what timeframe?
- How much marketing and sales support is needed to maintain and grow market share?
- What is the risk of products or services becoming obsolescent due to technological advances or changes in trends or customer behaviour?
- Is there a risk of new legislation or regulations that would impact the ability to commercialise the products or services?

These market considerations will be different in each business. Frequently, the valuer will be provided estimates by the owner of the IP asset and will need to be able to review them objectively. The valuation specialist also has access to market and industry information from independent sources which help verify the veracity of the data provided by the IP owner.

Before applying any of the valuation methods, it is also important to understand from whose perspective the valuation is being performed. For example, a buyer of a business might see a synergy value in the IP rights, whereas such synergies would not be present in a standalone valuation, and they might not be taken into account in the context of evaluating damages in legal proceedings.

C. The approaches

i. Cost approach

The cost approach is based on the economic principle of "substitution", which states that an investor will not be willing to pay a bigger price for an IP asset than the implied cost of acquiring, producing, or developing a similar IP asset capable of producing the same economic value.

Within the cost approach one may distinguish between:

- the historical cost method, which takes into consideration the accounting records of the owner of the IP to establish the actual cost of creating and developing the IP asset;
- the reproduction (or replication) cost method, which looks to the total cost, at current prices, of developing an exact replica of the IP asset; and
- the replacement cost method, calculating the cost, at current prices, of creating an asset which provides the same functionality or utility as the original IP asset, but which due to new technologies can actually go beyond the original IP right.

Since it tends to be relatively objective, fact-based, and consistent, the cost approach usually helps establish a "floor" on IP valuation estimates. In this bottom-up approach to IP valuation, the key inputs are the costs that will be incurred to create, protect, enhance, productise, and commercialise an IP asset, for example:

- R&D costs (e.g. staff, infrastructure, design, materials, travel, databases);
- IP protection and monetisation costs (e.g. attorney fees, patent office fees, in-licensing fees, patent pool fees);
- Productisation costs (e.g. capital equipment, prototyping, certification, maintenance and support);
- Management costs (e.g. project management, business development);
- Regulatory costs (e.g. standards compliance, trials, testing).

Other inputs to the cost approach may include the degree and rate of obsolescence of the IP asset (to calculate depreciation), the useful life of the IP asset (to calculate amortisation), the cost of creating or buying an IP asset of similar functionality or utility, the opportunity cost of capital, historical costs, etc.. It is worth noting that obsolescence of an IP asset can be physical, functional, and/or economic—and can significantly impact the valuation over time. For IP assets protected by patents, the cost approach may also include patent assertion and litigation costs, which are likely to be incurred during the IP commercialisation journey.

Given the central role that historical and comparable data play in the cost approach, valuers must consider:

- Historical financial statements and historical costs of IP asset development and maintenance;
- Sensitivity of costs to changes in revenue, pricing, capital expenditures, profitability, etc.;
- Sensitivity to delays in research, development, prototyping, etc.;
- Rates of obsolescence driven by competition, new technologies, changing customer needs, etc..

In summary, the cost approach to IP valuation is data-intensive and relatively objective if applied correctly. It may fail to capture value creation but is nevertheless an important component of any IP valuation exercise.

The main advantages are generally considered the following:

- objective and fact-based;
- wide acceptance as a valid method of valuation.

However, some disadvantages to take into account are:

- Cost can be a poor indication of value;
- This approach often implies that all costs and expenses related to the IP asset are creating value—which is almost certainly not always the case—e.g. the difficulty of allocating costs of early-stage fundamental research to specific assets;
- This approach does not consider whether the IP asset is capable of generating income—if high costs are incurred to create an IP asset with low commercial potential, a buyer or licensee would be unwilling to rely on the cost approach to value the asset;
- Conversely, if the cost of creation is low and the true commercial potential of the IP asset is high, the seller or licensor would not want to rely on the cost approach either.

The OECD transfer pricing guidelines do not recommend this approach for establishing value for tax purposes, except in some limited circumstances, such as internally generated software.[14]

In general, the approach may be useful in cases where the aim is to obtain the right value or fair price for transactions of sale or purchase of newly created IP assets or simply to find out the cost of such newly created IP. Also, it is often used to value start-up software. Other examples of possible uses for this approach include cases where the IP asset is used by an owner with enough knowledge and data to assist the valuer in the estimation of the cost, or cases where the IP asset is part of the income producing process, but does not actually generate any income by itself, such as manuals, operating procedures, or training of employees.

ii. Income approach

The income approach to IP valuation is based on the premise that the value of a business or business asset emanates from the income that the business or asset can generate for the investor—the value of a business asset equals the estimated earnings the asset can produce (in the form of additional income or avoided costs) over its productive life. The timing and amount of earnings are estimated for the productive life of the intangible asset. These earnings are discounted back to the asset acquisition date using a rate reflecting the cost of capital return adjusted for the riskiness of the future earnings stream.

The two primary methods used within this approach are the discounted cash flow (DCF) method, whereby additional income from the IP asset is measured in the form of cash flow, and the relief-from-royalty (RfR) method, which measures avoided cost.

14 See *OECD Transfer Pricing Guidelines*, July 2017, s.6.142, page 295, https://read.oecd-ilibrary.org/taxation/oecd-transfer-pricing-guidelines-for-multinational-enterprises-and-tax-administrations-2017_tpg-2017-en#page1 .

The DCF method estimates the future cash flow of an IP asset for the estimated productive (economic) life of the asset, and discounts that cash flow to a present value on the acquisition date. Future cash flows are calculated on a year by year basis for as many years as feasible (e.g. 5 or 10 years), and if the economic life of the IP asset is longer than that, then the valuer will typically apply a terminal value.

The RfR method discounts hypothetical future royalty payments. It can use the same revenues and cost projections used in the DCF modelling. If the IP right was previously under licence the same royalty rate can be applied; if that is not the case, a comparable rate paid in the market can be identified. There are firms with considerable access to royalty rates and certain websites provide subscriber access to royalty databases. Comparable royalty rates should be adjusted for any differences, such as territorial scope, exclusivity, duration, level of ongoing technical, marketing, or other support, as well as differences in relative market strength and legal strength of the IP rights being considered.

The economic life of an intangible asset ends when it is no longer profitable to use the asset, or it is more profitable to use a different intangible asset in the business. The economic life for many intangible assets is generally shorter than their legal life. While the economic lives of tangible assets are well defined, determining the economic life of an intangible asset is more subjective.

The economic life determination is particularly difficult for high technology IP, since it is directly impacted by further development costs, the replacement of the product/service, the cost of market entry, the life span of related products (e.g. computer hardware in case of software assets). IP value often degrades over time, so the earnings estimate must consider when degradation begins (lag), the rate of degradation (slope) and the terminal value (tail). The rate of degradation can depend on internal product development cycles and the sales history of prior product versions.

Applicability of income valuation approaches

The reliability of income methods depends on the reliability of the projections of future earnings in the form of cash flow (DCF) or avoided costs (RfR). Income valuation approaches therefore work best for businesses with positive cash flows, relatively reliable projections, and relevant risk proxies[15], all of which reduce the subjectivity risk of the required earnings projections. They are less appropriate for troubled businesses, those with unutilised but valuable IP, and for IP assets not currently generating cash flow. *Ex ante* valuations based on the income method are more appropriate for independent transactions which are closed by contract and are not subject to subsequent regulatory review. *Ex post* transactions, and *ex ante* transactions with adjustment provisions to reflect differences between the projections and the actual results, may be a good choice for related party transactions subject to government tax audits.

The DCF method may be used to value IP which is rarely transferred and for which no comparables exist, such as business acquisitions and intercompany transfers of "crown jewel" IP. The RfR method is often used for valuing registered IP rights and generally based on third party IP licensing comparables (e.g. trademarks and patents). The value of an IP right is represented by the money saved in royalties that would otherwise have to be paid to the owner of the IP right for the right to use it.

15 By proxies here we mean observable market variables or prices that are capable of being used when the available data for the business being analysed does not permit an accurate measurement.

Disadvantages of the DCF method include reliance on subjective cash flow projections which, particularly in the case of individual IP assets, may not be supported by the historical accounting records of the business. The earnings forecasts cover extended time periods and the risks associated with new business models create significant potential volatility with respect to appropriate discount rates. In intercompany transfers, if there are differences between the projections and the actual results achieved in future years, this may be an issue in subsequent tax audits. In the RfR method there is the additional difficulty of finding comparable royalty rates (see also below under *iii. Market approach*).

iii. Market approach

The market approach uses comparable transactions to measure the value of an IP right. The compared transactions would need to be for identical or similar IP rights—e.g. the price paid in a purchase of an identical or similar IP right. Royalty or franchising rates in a given market sector can form a basis of discussion in negotiations around value. If the comparison transaction is not identical, the valuer needs to be able to make adjustments for any material differences.

The advantage of the market approach is that, if a good comparable can be found, this can be a very quick, simple, and defensible way of determining market value. The main disadvantage, however, is that it is often difficult to find true comparables—IP rights being by nature heterogeneous or even unique (e.g. patents). Adjustments to inexact comparables add subjectivity to the valuation.

Comparable transaction prices

The prices paid for individual IP assets are very rarely made public. Furthermore, in most acquisitions there are other assets involved—a business unit might include trade secrets, client lists, patents, umbrella brands and sub-brands, among others.

The information on the transaction in the financial statements of the acquiring company can provide data, but very rarely show what could be deemed to be a market comparable price. The acquiring company must allocate the purchase price among the acquired assets, using fair value for the intangible assets. However, there are some important limitations:

- This is most frequently an internal allocation, not one that has been agreed with the seller.
- There is no obligation to disclose the assumptions used for growth, costs, or other variables necessary to establish a fair market value, nor even to disclose which valuation approach has been used.
- Allocations are disclosed by asset classes—there is no obligation to list separately each individual IP right.
- Even if information is available, purchase price allocation can only serve as a starting point of valuation but is seldom dispositive.

If in the relevant market segment there is a high level of acquisition activity, a review of the financial statements can show the relative importance of different asset classes in that market. This could be useful in setting valuation ranges and for cross-checking the results of other valuation methods.

Comparable royalty or franchising rates

Royalty or franchising rates are usually kept confidential. Furthermore, there are often very significant differences between licensing or franchising arrangements for which adjustments need to be made, such as exclusivity, territorial scope, overall profitability, on-going technical, marketing, or other support, volume guarantees, payment structure with milestones or earnouts, and even the definition of sales for which the royalty is calculated.

As mentioned above, IP valuation firms and large accounting firms have access to comparable royalty and franchising data. They are subject to confidentiality but can provide an expert opinion on the specific IP rights being considered. There are also some websites that provide subscriber access to royalty databases.

Suitable use of the methods

Once comparables have been found, the valuer needs to consider the relative market strength and legal strength of the IP rights, and make adjustments for any significant differences between the comparison transaction and the IP rights being evaluated. This information is often incomplete and difficult to obtain.

Despite the difficulties in finding true comparables, the valuer would usually search for comparable transactions as part of their due diligence. This allows the valuer to make an informed decision on whether to use the market approach or not.

Tax authorities often prefer the market approach, provided the comparable is between unrelated parties, because it comes closest to an arm's length value.

Information on transactions between related parties can be useful when defining ranges as a basis for discussion in an acquisition or in negotiations for a licensing arrangement. However, related party transactions may be more easily subject to review by tax authorities.

The comparison transaction may relate to different markets or territories. The economic conditions prevailing at the time of the transaction may have been very different. Transactions may differ in exclusivity, scope, payment structure (e.g. milestone payments, volume guarantees, earnouts), and in the level of technical, marketing, or other support provided. Royalty rates depend to some extent on the expected and actual level of profits. The valuer needs to make adjustments to reflect these and any other significant differences, for which the necessary information is not always available.

IV. IP Valuation process

In Chapter III we described the main concepts, advantages and disadvantages involved in each of the valuation approaches. In this chapter, drawing on the real-life experience of our international contributors, we explore from the perspective of the valuer what is involved in actually applying those valuation approaches.

A. Preliminary analyses

There are some basic preliminary steps that should be conducted in order to identify the IP asset. This process of identification requires taking into consideration a number of elements: can the IP asset be considered independent from other assets? If so, how is it capable of producing benefits for the business? Is it transferable?

There is not a single method for conducting the process of identification of the IP asset, but it is a common path to first consider a number of variables that may be of assistance in its identification and others that may help scale its strength.

The following chart gives some examples for identifying IP assets. Using different categories helps the valuer to structure the in-depth analysis with the various stakeholders, and to identify other factors that may influence value. The same IP asset may fall into several categories.

Commercial IP Assets	Innovation IP Assets	Intellectual IP Assets	Human IP Assets
› Trademarks › Collective marks › Certification marks › Geographical indications › Trade secrets (e.g. client lists)	› Patents › Trade secrets (e.g. know-how) › Designs › Copyright (software)	› Copyright › Trade secrets (e.g. software, formulas, documents and manuals)	› Trade secrets

In addition, a different analysis—by posing questions such as the ones below—may be useful for identifying and valuing the IP asset through certain key criteria.

IP asset	Information	Strength (from Low to High)
Does the organisation own the asset?		
Was it developed or acquired?		
If acquired, was it part of a major transaction?		
Can it be independently transferred?		

Are there any identifiable costs?		
Is it protectable by laws or regulations?		
It is recognised in accounts records?		
If not, can it be recognised in accounts records?		

Some asset valuation methods include the determination of the strength of the IP asset by considering a number of relevant attributes. For instance, the Brand Finance valuation methodology considers emotional connection, financial performance, and sustainability.[16]

There is no established rule for the identification of an IP asset, but it is an accepted rule that the IP asset has to be identified since not all investments in investigation or other areas will result in an IP asset.[17]

B. Cost approach

The steps to follow in the process of IP valuation under the cost approach (see Chapter III. C. i.) are the following:

1. Collect historical data, from internal and external sources, on costs incurred from conception to monetisation of similar IP assets.
2. Identify the time period that covers the lifecycle of the IP asset to be valued.
3. Calculate and amortise capital costs:
    (a) Identify all costs related to infrastructure, e.g. capital expenditure, databases, etc..
    (b) Amortise each cost using the corresponding "useful life" of resources used to develop the IP asset.
    (c) Add all amortised costs to compute costs year by year over the relevant time period.
4. Calculate operating costs:
    (a) For each relevant year identify all direct costs, e.g. prototyping, materials, supplies, trials, etc..
    (b) For each relevant year identify all indirect costs, e.g. staff, travel, project management, business development, IP protection, etc..

16 See http://brandirectory.com/methodology .

17 See *OECD Transfer Price Guidelines*, July 2017, s.6.11, p. 253, https://read.oecd-ilibrary.org/taxation/oecd-transfer-pricing-guidelines-for-multinational-enterprises-and-tax-administrations-2017_tpg-2017-en#page1 .

5. Calculate cost of capital: for each relevant year, calculate the opportunity cost of capital, compounded over time.
6. Calculate depreciation: estimate the degree and rate of physical, functional, and economic obsolescence of the IP asset under evaluation by using industry standards for similar IP assets.
7. Compare the calculated costs with historical cost data to check for inconsistencies/inaccuracies: changes in useful life, obsolescence rates, inflation, etc. may account for differences in historical vs. computed costs.

The sum of all of the operating and capital costs, minus the depreciation, calculated for all the years, provides a reproduction or replication cost-based estimate of IP valuation.

Instead of reproducing the same IP asset, the same functionality/value/utility may be available to the user via a different IP asset. The cost of acquiring or creating such asset is called the replacement cost.

For reproduction or replacement costs, the input data can be sourced from:

- Internal cost accounting systems that track direct and indirect costs asset by asset;
- Databases that track M&A/licensing/investment deals involving IP assets;
- Corporate collateral (e.g. PR articles, annual reports, financial statements) in the public domain;
- Publications or talks by IP asset valuation experts;
- Documents forming part of IP lawsuits (e.g. case law, settlements, court rulings).

Key stakeholders involved in the cost approach are: R&D and product development, legal and IP group, product marketing and sales group, and accounting and finance group. Each has its own perspective on the IP valuation process and outcomes. For example, the accounting group must ensure that valuation models comply with the tax regulations of the relevant jurisdiction, since IP assets may have to be separately reported to tax authorities. On the other hand, the sales group will focus on the value of the IP asset in the market, which may be substantially higher than the cost incurred in developing it. The legal and IP group will have a say on how to protect the asset by IP rights, and whether to budget for litigation costs. Thus, the cost approach must be flexible enough to accommodate such diverse inputs, especially since an IP asset can be monetised via multiple ways (e.g. IP sale, product sale, technology transfer).

C. Income approach

Many of the variables used in the income approach are quite subjective. Long term plans are often developed bottom-up and the input by the various functions can sometimes be overly optimistic e.g. on projected market share or on efficiencies and cost savings. To counterbalance this, the valuer should be impartial and have the knowledge and skill to verify and challenge the projections and assumptions of the other stakeholders involved—it may thus be useful for the valuer to enjoy a certain degree of hierarchical authority and "own" the financial model used for the valuation, notwithstanding the importance of gathering input from all the stakeholders.

Steps to follow and stakeholders to involve:

1. The valuer should identify any contributory assets that are needed to achieve the forecasted revenue or cost savings. These could be other IP assets, goodwill, or fixed assets such as plant, property, and equipment. This will require input from the business leaders and the technical, R&D, and marketing/sales teams, especially their views on how to reach the business objectives and achieve market success.
2. Depending on the existence and importance of contributory assets, there are two possible scenarios:

   (a) Building standalone projections for only the IP asset being valued, if the information is available; or

   (b) Projecting future flows for the IP asset together with the contributory assets, then deducting an appropriate return for the contributory assets.

3. The valuer will usually need to create an income statement using current financial data and two or three years of historical data, except in the case of a new IP right. This allows the valuer to track and understand growth and cost trends. This typically involves the finance department (in particular its controlling and accounting arms) but the valuer may wish to contact other functions, such as sales and marketing, technical or supply chain to get further insights, especially about the baselines and trends.
4. The next step is to determine the remaining useful life of the IP right. This will require an understanding of typical product life cycles, the risk of technical or technological obsolescence, changing consumer habits, changes in market demand for the products or services, expected competitor actions, and any limits to the legal protection in time or in scope. Marketing, sales, technical, R&D, and legal will all have valuable insights into their respective areas.
5. Then the valuer will project the revenue flow generated by the IP right over its remaining useful life. If the future benefits are in the form of sales, then this will require input from marketing/sales and the business leadership in terms of market growth, market share, volume growth, price elasticity, competitor behaviour, etc.. If the future benefits are in the form of cost savings, e.g. from a technical process, then the valuer should review and cross-check the assumptions with the technical function.
6. Once the top line has been validated, the valuer will then offset any revenues or cost savings by the investments and expenditures directly related to the asset and necessary to drive the top lines: labour, promotional and marketing expenses, materials, capital expenditure, distribution costs, incremental overheads etc.. It is advisable to invest the necessary time to check and validate all the assumptions with the respective stakeholders. Cost inflation can also differ from the inflation used in the top line. When valuing existing technology it is not necessary to include R&D costs incurred in developing new IP, but if valuing an existing brand, one generally includes R&D costs as part of the on-going investments to maintain and grow market share.
7. From these analyses, the valuer will calculate the Earnings After Tax (EAT). If the valuation includes contributory assets (step 1 above), it is at this stage that the valuer will deduct an appropriate return for each of the contributory assets in each of the forecast periods, to achieve an EAT for the IP right being valued. This will typically involve the controlling and accounting teams.

8. To get from EAT to cash flow, the valuer will then add back depreciation, deduct any increase in working capital (or add back any decrease in working capital) and deduct all other capital expenditure required. The supply chain team will be able to give insights into inventory build, Finance can make projections for the other elements of working capital and Technical is best placed to provide input on future capital expenditure.
9. Next, the valuer will assess whether at the end of the useful life the IP right has any terminal value. Normally the terminal value of an IP right would be zero unless there are clear indications to the contrary, such as the existence of an active market for the acquisitions of this kind of IP right.
10. The final step is to apply the appropriate discount rate—the investor's required rate of return over the expected term of the income projection period—to the projected flows, and the terminal value if there is one. This requires input from Finance and Accounting. Opinions on the correct discount rate differ widely: if the above steps have been carried out with objectivity and diligence, the financial projections will reflect risk and probability in the growth, pricing and cost assumptions, and thus the discount rate wouldn't need to include an extra risk element.

The income method normally draws on the expertise and knowledge of a wide range of disciplines in the business organisation. However, for reasons of confidentiality or speed, sometimes the business leadership may not wish to involve all of the functions, in which case the valuer can use more high-level assumptions for top line and bottom line in the discounted cash flow (DCF) model. However, such projections would necessarily be much less detailed and might not reflect risk adequately. In such a case, the valuer would likely need to increase the discount rate to include a risk factor, and might also need to use different discount rates for top line sales and for expenses to reflect the different risk and inflation profiles.

D. Market approach

The market approach to valuation is based upon the principle that an investor will not pay more for a specific asset than the amount that he or she would be willing to pay for another similar asset available in an open market.

Steps to follow:

1. The initial step is identifying the IP asset and its particular and relevant characteristics, the specific conditions of the business to which the IP asset is related and other pertinent information.
2. This approach requires conducting a serious investigation to obtain public information on similar transactions (when available). The related transactions must be "comparable"—if two companies are in the same market and Company B is valuing its licence contract to use a certain patented technology, the fact that Company A just got into a transaction for a similar licence contract but for a different technology does not mean that this transaction is necessarily comparable and additional information must be obtained. The valuer should consider more than one comparable transaction—one may not be sufficient since there may be a number of reasons that lead the parties in a particular transaction to settle the final price.

- Obtaining information on purchase prices is usually more difficult than for royalties, though most records of royalty prices are also kept confidential. When the latter are available, the valuer has to take into account the fact that the specific conditions of a given royalty may not be applicable in every case.

3. In order to obtain comparable information the valuer must seek pricing evidence from intangible asset sales (purchase price) or license transactions (royalty or franchising rates) and then conduct a comparative analysis among the assets in order to collect comparable metrics.
4. The price obtained from the comparison (guideline price) needs to be adjusted to suit the IP asset under valuation—this process typically requires the valuer to consider the IP asset's attributes, such as ownership, rights of transference, the industry or market segment and so forth.

V. Transfer pricing of intangibles and customs value of goods

In the previous chapters we learnt how IP rights can be valued. In this chapter we will take a closer look at some specific circumstances and transactions that can represent significant value. In particular, this chapter discusses:

A. Valuation of IP rights for transfer pricing purposes;

B. "Hard-to-value intangibles";

C. IP rights that are rarely or never transferred except in transfers of an entire trade or business;

D. The impact of IP rights on the customs value of goods to be imported.

A. Valuation of IP rights for transfer pricing purposes

Royalties and/or licence fees are paid by one company to another as remuneration for the use of the IP incorporated in intangibles. Those intangibles should be valued based upon the arm's length principle.

Because of the specific features of intangibles it may be difficult to find reliable comparables or to determine the value of the intangibles for transfer pricing purposes. In the absence of comparables, arm's length valuation is based on what independent parties *would have done* in comparable circumstances to respond to the uncertain valuation at the time of the transaction. The *OECD/BEPS Action Plans* and the 2017 *OECD Transfer Pricing Guidelines*[18] further reinforce the arm's length principle—when assessing intragroup royalties, the tax authorities will consider which entity in the group supports the risks and costs of developing, enhancing, maintaining, protecting, and exploiting the IP rights. The *OECD Transfer Pricing Guidelines* provide for cross-border adjustments if the actual profitability (*ex post*) differs from the estimated or expected profitability levels (*ex ante*).[19]

Independent parties may rely on the following approaches to mitigate the risks of the uncertain valuation:

- Considering all relevant economic and market factors at the outset of the transaction;
- Adopting shorter term agreements to reduce the period of uncertainty;
- Agreeing on price adjustment clauses to accommodate changes in projections;
- Adopting pricing structures (for example relying on contingent payments to protect against future unpredictable developments: royalty rates could increase as a function of the sales of the licensee, or additional payments made when certain targets or milestones are reached);
- Deciding to accept the risk related to unpredictable developments.

18 See https://read.oecd-ilibrary.org/taxation/oecd-transfer-pricing-guidelines-for-multinational-enterprises-and-tax-administrations-2017_tpg-2017-en#page1 .

19 This is explained further in the following section on hard-to-value intangibles.

B. Hard-to-value intangibles (HTVI)

In valuation of intangible assets, taxpayers must often perform the valuation exercise *ex ante*, before risks materialise (e.g. will the drug get approval by the relevant agencies, will it get a substantial market share?). The pricing (i.e. value of the IP) reflects the possibility that the investment will be lost (development risk) or that the commercial results will be disappointing (market risk). The incorporation of these risks into the pricing will decrease the valuation. Once the risks have materialised, taxing rights over differences between the *ex ante* valuation and the *ex post* results are an issue because in many cases there will be significant differences between the two.

These complex issues become even more difficult when dealing with intangibles for which future income projections are unavailable or unreliable. Intercompany transfers of "crown jewel" intangibles often fall into the HTVI category.

As defined in the 2017 *OECD Transfer Pricing Guidelines*[20], a hard-to-value intangible (HTVI) covers intangibles or IP for which, at the time of their transfer between related enterprises, (i) no reliable comparables exist, and (ii) at the time the transaction was entered into, the projections and future cash flows or income expected to be derived from the transferred intangible, or the assumptions used in valuing the intangible are highly uncertain, making it difficult to estimate the value of the intangible at the time of the transfer.

Examples of HTVI include the following:

- The intangible is only partially developed at the time of the transfer.
- The intangible is not expected to be exploited commercially until several years following the transaction.
- The intangible does not itself fall within the definition of HTVI but is integral to the development or enhancement of other intangibles which fall within the definition of HTVI.
- The intangible is expected to be exploited in a manner that is novel at the time of the transfer and the absence of a track record of development or exploitation of similar intangibles makes projections highly uncertain.
- The intangible, meeting the definition of HTVI, has been transferred to an associated enterprise for a lump sum payment.
- The intangible is either used in connection with or developed under a Cost Contribution Arrangement (CCA) or similar arrangement for sharing costs among the members of a multinational corporation.

Tax administrations are concerned about the informational disadvantage they are under with respect to HTVI because such information asymmetry can result in non-arm's length outcomes that are overly favourable to taxpayers. From the point of view of a tax authority, it might be difficult to determine or review whether certain developments or events occurring after the transfer could have been foreseen at the time of the transaction. The tax authorities may lack insights into the relevant business environments and not have access to the relevant information allowing them to review the transaction and to determine if differences between

20 See *OECD Transfer Pricing Guidelines*, July 2017, s.6.189, p. 312, https://read.oecd-ilibrary.org/taxation/oecd-transfer-pricing-guidelines-for-multinational-enterprises-and-tax-administrations-2017_tpg-2017-en#page1 .

the *ex ante* valuation of the intangibles compared to the *ex post* outcomes are commercially reasonable or are the result of pricing not in accordance with the arm's length principle.

In 2017 the OECD released a *Discussion Draft on Implementation Guidance on hard-to-value intangibles (HTVI)*[21]. On 21 June 2018, based on the discussion draft and comments received from the public,[22] the OECD released the *Guidance for Tax Administrations on the Application of the Approach to Hard-to-Value Intangibles* (the Guidance)[23] which provides examples illustrating the implementation of the HTVI guidance. In addition, the Guidance explains the relationship of the HTVI guidance with the access to the Mutual Agreement Procedure (MAP—the procedure for resolving differences in the tax assessments between two participating states). After repeating the main principles of the HTVI approach as discussed in Section D.4 of the 2017 *OECD Transfer Pricing Guidelines*, the implementation guidance suggests to tax administrations to act as early as possible when HTVI issues are identified.

The Guidance aims at providing a common understanding and practice among tax administrations with regard to the potential adjustments resulting from the HTVI guidance in the 2017 version of the *OECD Transfer Pricing Guidelines*. *Ex post* outcomes should be used to review the *ex ante* pricing at the time of the transaction, considering the probability of achieving such outcomes at the time of the HTVI transfer. The Guidance provides that tax authorities may consider *ex post* results that vary significantly from the *ex ante* valuation as presumptive evidence that the *ex ante* pricing was not arm's length. Taxpayers have the burden of supporting their *ex ante* valuation by showing that their projections accurately weighted all existing possibilities at valuation date. The approach resembles the commensurate with income (CWI) standard under Section 482 of the US Internal Revenue Code and the CWI regulations.[24] Tax administrations are called upon to identify and review HTVI valuations as early as possible to evaluate the reliability of the information supporting the HTVI value as arm's length. The Guidance discusses the possibility of adjustments reflecting alternative pricing structures from the one adopted.

C. Intangibles that are rarely or never transferred except in transfers of an entire trade or business

Some intangibles are so unique or valuable, or both, that it is highly uncommon to see an uncontrolled license with comparable scope of rights and intangibles, except in a transfer of an entire trade or business (e.g. spin-off, target acquisition) or contribution to a partnership or joint venture with a third party. These intangibles typically display one or more of the following characteristics:

- They are intangible assets that will be exploited by the licensee in the course of an active trade or business.

21 See http://www.oecd.org/tax/transfer-pricing/BEPS-implementation-guidance-on-hard-to-value-intangibles-discussion-draft.pdf .

22 See http://www.oecd.org/ctp/transfer-pricing/public-comments-received-on-the-beps-discussion-draft-on-the-implementation-guidance-on-hard-to-value-intangibles.htm .

23 See http://www.oecd.org/tax/transfer-pricing/guidance-for-tax-administrations-on-the-application-of-the-approach-to-hard-to-value-intangibles-beps-action-8.htm .

24 See https://www.irs.gov/pub/irs-apa/482_regs.pdf .

- The rights to these intangible assets typically include "make and sell" rights as well as "rights to further develop".
- The rights transferred may be limited to certain fields of use or territories.
- The licence of these rights is typically indefinite, regardless of the tax character of the transfer as "sale" or "licence" (for example, whether or not all substantial rights have been transferred or not).

OECD Transfer Pricing Guidelines approach to transfers of rare intangibles

The *OECD Transfer Pricing Guidelines* (TPG) authorise transactions that are not observed (or very rarely observed) in the open market between uncontrolled participants to be nevertheless carried out between associated enterprises and recognised by tax administrations. Indeed, the OECD TPG specifically maintain that:

> "[T]axpayer structures may be based on contractual terms between associated enterprises that separate ownership, the assumption of risk, and/or funding of investments in intangibles from performance of important functions, control over risk, and decisions related to investment in ways that are not observed in transactions between independent enterprises and that may contribute to base erosion and profit shifting. Notwithstanding these potential challenges, applying the arm's length principle and the provisions of Chapters I—III (the Arm's Length Principle, the Transfer Pricing Methods, and the Comparability Analysis) within an established framework can, in most cases, yield an appropriate allocation of the returns derived by the MNE (multinational enterprise) group from the exploitation of intangibles."[25]

Use of income approach to value transfers of rare intangibles

Due to a lack of comparable transactions, the income approach, and specifically the Discounted Cash Flow (DCF) method, is often the only valuation method that is relevant in establishing the transfer pricing for these kinds of transactions.[26]

In the context of uncontrolled transactions that involve the valuation of an acquisition target, or the performance of financial recording of purchase price allocation, DCF is the most common valuation methodology used by practitioners. This valuation methodology is thus consistent with valuations done in the context of pricing between uncontrolled parties, where the buyer will typically construct a DCF to determine a range of bidding prices for the target. Such estimates should reflect the best estimates of the items projected (including if appropriate a probability-weighted average of possible outcomes).[27]

The application of the DCF method needs to reflect the key legal and economic features of the specific transfer of rights involved:

- Whether the rights are exclusive or non-exclusive (where substance over form matters);

25 See *OECD Transfer Pricing Guidelines*, July 2017, s.6.33, p. 262, https://read.oecd-ilibrary.org/taxation/oecd-transfer-pricing-guidelines-for-multinational-enterprises-and-tax-administrations-2017_tpg-2017-en#page1 .

26 See *OECD Transfer Pricing Guidelines*, ibid, ss. 6.153—6.178, p. 301. See also US Treas. Reg. § 1.482-7(g)(4).

27 See for example *OECD Transfer Pricing Guidelines*, ibid, ss. 6.193.i)1, p. 314. See also US Treas. Reg. 1.482-7(g)(2)(vi).

- If the transfer of rights is indefinite, whether a terminal value should be considered in the valuation;
- Whether synergies exist between (a) the intangible assets subject to the transfer, and (b) the intangible assets subject to the transfer and the other business assets of the licensee, and which party is entitled to the synergistic value, if any;
- Discount rates that appropriately reflect the systemic risks transferred from the licensor to the licensee as a result of the transfer of intangible rights from the licensor to the licensee;
- Financial projections that are appropriately probability-weighted to reflect both the possible upside and downside of risk realisation;
- The determination of the appropriate discount rate needs to follow arm's length principles.

Such DCF valuations are generally done post-tax to be consistent with the arm's length principle, and not grossed-up for tax.

D. The impact of IP rights on the customs value of goods to be imported

The value of a product is not comprised solely of its components and production costs. Unique technology and know-how can add value to make a difference in the marketplace. Value can also be derived from trademark and branding elements used in marketing the product, which may reflect the reputation of a company or the brand.

When the purchase price of a good includes the technology used in production and/or IP assets such as trademarks, it is included in its customs valuation under the World Trade Organization (WTO) Customs Valuation Agreement (WTO Valuation Agreement), upon which the valuation legislation of the 164 WTO Members is based.[28]

However, there are instances in which the value of the technology used to produce the good or other IP assets is not included in the final purchase price paid by the buyer to the seller, notably:

- when an IP owner designs and/or develops a good, but has the good manufactured by a contractor, so-called "assists";
- when the IP rights are paid for separately, e.g. a royalty or licence fee.

Design and development "assists" provided by the buyer free of charge or at a reduced price

When design and development is sent to a manufacturer free of charge, the challenge is in valuing and apportioning the assist to the related imports.[29] The WTO Valuation Agreement anticipates this situation and allows an importer to take a reasonable approach, consistent with generally-accepted accounting principles. If the assist is purchased from a third party, the amount paid to the third party is the value of the assist. If the assist is self-produced, or

28 Agreement on Implementation of Article VII of the GATT. See generally Article 1.

29 Note that not all research and development constitutes an assist. Research that is not product-specific, for example, is not necessary to make a product, and does not constitute an assist.

produced by a party related to the importer, the value is the cost of production. Importantly, under assist rules, only design and development which is incurred in a country *other than* the country of importation is to be counted as an assist.[30]

IP rights paid for separately

If the IP rights are paid for separately, by a royalty or a licence fee, the WTO Valuation Agreement assesses whether the associated IP is related to the imported product, and whether the licence fee must be paid as a condition of the sale for export from the seller to the buyer—see i. and ii. below. When both of these conditions are met, the royalty or licence fee is added to the value subject to customs duty.[31]

The WTO Valuation Agreement does not define royalties or licence fees, although the Interpretative Note to Article 8.1 (c) observes that they "may include, among other things, payments in respect to patents, trade marks and copyrights". The Interpretative Note discusses rights to reproduce and rights to distribute or resell, but this lack of an authoritative definition can lead to practical difficulties for traders and customs authorities.

Royalty payments and licence fees themselves are not inherently subject to duty, as customs duties are levied only on tangible goods physically crossing a border. Software or other kinds of IP transferred via the Internet are thus not subject to customs duties under the presently constituted Harmonized System. This is also codified in the WTO Moratorium on the collection of duties on Internet downloads[32] and is consistent with the tariff treatment expressed in a decision of the WTO Committee on Customs Valuation.[33]

i. First condition: the royalties are related to the goods being valued

The first of a two-stage test for dutiability contends that the payment of royalties or licence fees should be "related to the goods to be imported", per Article 8.1 (c) of the WTO Valuation Agreement. Implementing legislation in certain customs jurisdictions provides some further guidance on this standard. Under Article 136.1 of the European Union UCC Implementing Act, royalties or licence fees are "related to the goods being valued" when the rights transferred under the licence or royalties agreement are embodied in the goods.

In determining whether or not this is the case, the fundamental question is: "what right does the buyer/licensee receive in return for its payment?" Some have theorised that when the right is essential to the use of the imported good, then the IP rights are related to the goods being valued. The United States puts the test more broadly, asking "was the royalty involved in the production or sale of the merchandise?".

30 A recent US Customs ruling, *HQ H299185* (August 24, 2018) illustrates a reasonable approach to design and development assists as contemplated by the WTO Valuation Agreement; see: https://rulings.cbp.gov/search?term=H299185&collection=ALL&sortBy=RELEVANCE&pageSize=30&page=1 .

31 Article 8.1(c).

32 The Moratorium is due for renewal by the WTO, but there are indications that a small group of countries will not agree to its renewal and might seek to impose customs duties on software downloads.

33 Decision 4.1, *Valuation of Carrier Media Bearing Software for Data Processing Equipment*.

In this respect, the link between IP rights and imported goods is particularly clear where the imported goods are:

- themselves the subject of the licence agreement (i.e., if the imported goods incorporate the trademark for which the licence fee is paid, the fee must be considered as related to the imported goods); or
- manufactured from components which are subject of the licence agreement.[34]

ii. Second condition: the royalties are paid as a condition of sale

The second condition for dutiable status for a royalty or license fee under Article 8.1 (c) of the WTO Valuation Agreement states that the buyer must pay the royalties or licence fees, either directly or indirectly, as "a condition of sale" of the imported goods, but does not provide further explanation.

The WCO Technical Committee on Customs Valuation (TCCV) compendium provides some insight.[35] In addition, Commentary 25.1 clearly states that a key consideration for determining whether the buyer must pay the royalty or licence fee as a condition of sale is whether the buyer is unable to purchase the imported goods without paying the royalty or licence fee.[36] Or, conversely, if the seller won't sell the goods without the payment of a royalty or licence fee—in which case the payment of the royalty or licence fee is implied to be a condition of the sale of the goods.

There is no requirement that the royalties be paid to the seller itself; they can also be paid to a third party who may or not be related to the seller (e.g. in a multinational group, goods might be bought from one member of the group, but the IP rights are owned or licensed by a different member of the same group).

34 Licence agreements may also include technical assistance in the areas of management, administration, marketing, accounting, distribution rights, etc.. Payments for such services or IP would not be eligible for inclusion in the customs value, as the underlying IP thereto is related to those types of assistance and not to the goods being valued in a direct or legally cognisable manner.

35 See e.g. *Advisory Opinion 4.4 and 4.6*.

36 Although this commentary relates to 3rd party royalties, the idea is identical to 136.4(c) UCC.

VI. The evolving landscape

As mentioned in earlier chapters, the valuer needs to consider a number of variables, including the rights at stake, the larger valuation context, why and for whom the valuation is being conducted, and the moment in time at which it is taking place. We are currently seeing a growing number of developments in the landscape of IP creation and commercialisation which are impacting IP valuations, or have the potential to do so. Some of these on-going changes are outlined below.

The increasing importance of IP in company valuations

In recent years, sales of patents have become increasingly common, and some transactions have been particularly large. This also reflects the growing importance of IP in the overall valuation of companies and the market as a whole. According to Ocean Tomo, a management and advisory firm centred on IP, intangible assets (of which a substantial part consists of intellectual property) represented only some 17% of the market value of the S&P 500 companies in 1975, whereas by 2015, that figure had grown to 87%.[37]

Changing valuation expectations

Nortel's bankruptcy patent auction in 2011 achieved a price of USD 4.5 billion for some 6000 patents and patent applications on fields including wireless, wireless 4G, data networking, optical, voice, Internet, service provider and semiconductors. The buyers were Apple, Microsoft and Research in Motion (Blackberry).

In the same year, Google acquired Motorola for USD 12.4 billion, of which Google attributed USD 5.5 billion to patents and developed technology.

While the Nortel and Motorola mega-valuations raised expectations across all industry sectors and attracted attention to patent valuation, these seem to have been one-off situations rather than the beginning of a trend. Later transactions such as the Eastman Kodak bankruptcy patent sale in 2012 only achieved a price of USD 525 million. The consortium of buyers again included Google, Microsoft, Apple, HTC and Huawei—software firms and mobile technology firms—but this time, the projected outlook for synergies and profitable growth were significantly lower.

Growth in the market for IP rights

The market for IP rights, particularly patents, has grown in recent years, with a number of entities active in funding, syndicating, acquiring and licensing or asserting patents and other IP rights. In the US, a Federal Trade Commission study in 2016 on patent assertion entities (PAE) subdivided them into two categories:[38]

- Portfolio PAEs, which typically purchase patents (often large portfolios containing hundreds of thousands of patents) using capital raised from investors, including institutional investors or

37 See Ocean Tomo 300™ Patent Index (2015 update), http://www.oceantomo.com/blog/2015/03-05-ocean-tomo-2015-intangible-asset-market-value/ .

38 See *Patent Assertion Entity Activity, an FTC Study* (2016), Federal Trade Commission, p. 9 and pp. 48 et. seq.

manufacturing firms. Portfolio PAEs seek to generate revenue by negotiating licences, often without first suing the alleged infringer.

- Litigation PAEs, meanwhile, typically sue potential licencees and settle for small amounts shortly afterwards by entering into licence agreements covering small portfolios (often fewer than 10 patents) with defendants.

The FTC study found that of the licences entered into by Litigation PAEs, some 77% were valued at less than the estimated cost of defending a patent lawsuit in the US through the end of discovery. The FTC emphasised that infringement litigation plays an important role in protecting patent rights, but that nuisance infringement litigation can tax judicial resources and divert attention away from productive business behaviour. The FTC recommended improvements to patent law to facilitate the benefits of patent rights, and reforms to address PAE litigation asymmetries that can discourage follow-on innovation, prevent competition, and raise prices through unnecessary litigation and licensing.[39]

The EU Commission also published a report on PAEs in Europe in 2016. This report found that:

> "On the one hand, patent assertion may foster innovation by providing innovators with effective patent monetisation options and by increasing the liquidity of patent markets. On the other hand, additional litigation, the threat of litigation and arbitration efforts may impose additional cost on the innovation ecosystem and obstruct innovative initiatives."[40]

Other examples of the growing interest in monetising patents and other classes of IP rights, as well as protecting against possible future litigation, include:

- Intellectual property exchanges, which are being established in various jurisdictions (Hong Kong, India, UK), creating marketplaces for buying and selling IP rights;
- Patent agglomeration entities, which acquire patent rights and license them to their members;
- Government-sponsored patent pools (GSPP): an example is the Innovation Network Corporation of Japan (INCJ)—founded partly in order to increase the patent royalties received by Japanese universities, which were small compared to US universities;[41]
- Programmes established by an increasing number of governments to encourage enterprises to exploit their IP rights and to help companies raise funds based on such assets;
- Cross-licences of large patent pools to avoid litigation between the parties to the cross-licence, provided these are within the scope of applicable antitrust laws.

Collaborative IP creation and distribution

Technological innovation continues to move away from large, in-house R&D labs and towards fully open innovation ecosystems consisting of start-ups, academia, special interest groups, incubators, accelerators, etc.. This also extends to IP partnerships with resellers, distributors and other channels. For example, IBM has recently launched a new model of IP partnerships with IT services companies, which involves sharing/licensing IP of legacy products with sales

39 Idem, pp. 4, 14, and 15.

40 See *Patent Assertion Entities in Europe* (2016), European Commission Joint Research Centre, p. 4.

41 See *Government-Sponsored Patent Pools* (2015), Center for Strategic & International Studies (CSIS), pp. 1-2.

and marketing partners. These partners agree to maintain/enhance the IP and extend the revenue streams, in exchange for revenue share, access to the IBM brand and inorganic growth of IP portfolios. Traditional models of enterprise distribution, which were purely sales focused, are giving way to IP-driven partnerships, with partners playing an active role via co-innovation and co-creation of IP. This opens new growth avenues for inventors and owners of IP rights.

Changes in IP models in business sectors

Changes in the business and regulatory environment and revenue models can lead to changes in the way companies manage their IP assets, which in turn has an important impact on IP valuation.

For instance, IP and IP rights in the software industry are undergoing continuous change, driven by two factors:

- Critical and fluctuating positions of regulators towards business method patents, patent trolls, patent assertion entities and outsized infringement awards.
- The exponentially increasing pace of innovation in some fields, such as e.g. in artificial intelligence and cryptocurrencies, makes patent protection for solutions which are prone to being quickly technologically outdated less attractive than protection via trade secrets.

The adoption of open source platforms and open access repositories (e.g. *arxiv.org*) is altering the software IP landscape, as inventors seek quick, global peer recognition and prefer to leverage their skills or publish their work, thereby immediately creating prior art rather than monetising their inventions through patents.

The Software-as-a-Service (SaaS) model, for both consumer and enterprise software, has made formal IP rights relating to potentially quickly technologically outdated solutions less attractive, since new versions are released daily or weekly, instead of every two-three years. Agile development of software results in rapid obsolescence of code and increased value from fees for high-value services. Increasingly, value is therefore created from SaaS brands, user/developer communities, and network effects.

Standard-essential patents (SEPs) and FRAND licensing principles[42]

In the rapidly digitalising and networked economy, interoperability—the ability of connected devices and systems to work together—is a key growth and success factor.[43] This interoperability is achieved by common technological standards or specifications, usually developed by the industry participants themselves. In many cases, such standards rely on patented technologies.

42 For a discussion on patents and standards, see *ICC Intellectual Property Roadmap*, 13th Edition 2017, p. 23.

43 Without interoperability, enabled by standards, it is thought that up to 40% of the potential benefits of Internet of Things systems would remain unachieved; see *Setting out the EU approach to Standard Essential Patents*, EU Commission COM(2017) 712 final, p. 1 with further references.

When a patent is considered to be essential to a technological standard—a standard-essential patent (SEP)—this fact has to be reflected in the valuation process. The parameters considered for the valuation of SEPs have to be aligned with FRAND (Fair, Reasonable, and Non-Discriminatory) principles which underlie licensing terms for SEPs. The context around FRAND is constantly evolving, given the high importance of the digitalized economy, and in many countries there is a growing number of court and antitrust cases in which SEPs and FRAND are a core issue. There is a significant body of case law in the US on the subject of FRAND, in particular the *Georgia-Pacific Corp. v. United States Plywood Corp*[44] case, which developed an approach commonly known as the 15 Georgia-Pacific factors. The European Commission places a high emphasis on SEP and FRAND, highlighting the need for increased transparency and searchability of SEP databases as well as more scrutiny on claims of essentiality.[45] Increasing litigation concerning SEPs is also being seen in China.

Value of user data in the digitalized economy

User data is playing an ever more important role in business operations, with the rapid growth of the internet and other digital technologies. The OECD has found that firms that adopt data-based decision making achieve higher output and productivity, and also perform better in terms of return on equity and market value.[46] Data's importance is considered particularly high in the sectors of (online) advertisement, public administration, healthcare, utilities, and logistics/transport.[47]

The question of user data's potential value is important also in the context of the current debate over the taxation of the digitalized economy. In March 2018, the OECD Task Force on the Digital Economy (TFDE) published an interim report to the G20, which did not make recommendations.[48] The participating countries have not achieved consensus with respect to the potential value of user data but have agreed to continue working on certain issues, including the sources of value creation, with the objective of reaching a consensus on the taxation of the digitalized economy by 2020.

Also in March 2018, the European Commission published a package on the taxation of the digital economy that included two proposed directives—the Significant Digital Presence and the Digital Services Tax directives. The basis for the proposals shows significant overlap with the unresolved options discussed in the TFDE report (it is worth noting that EU Member States make up a majority of the OECD's membership).

These directives are currently being debated by the EU Member States, with many of those supporting at the same time the OECD's continued work on issues related to the taxation of the digitalized economy, including the source of value creation.

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44 See 318 F. Supp. 1116 (S.D.N.Y. 1970), mod. and aff'd, 446 F.2d 295 (2d Cir. 1971), cert. denied, 404 U.S. 870 (1971).

45 See *Setting out the EU approach to Standard Essential Patents*, EU Commission COM(2017) 712 final.

46 See *Supporting Investment in Knowledge Capital, Growth and Innovation* (2013), OECD, http://dx.doi.org/10.1787/9789264193307-en, p. 325.

47 Idem, p. 327.

48 See *Tax Challenges Arising from Digitalisation—Interim Report 2018: Inclusive Framework on BEPS*, OECD/G20 Base Erosion and Profit Shifting Project (2018), OECD.

Certain digital companies publish user statistics in their financial statements (e.g. daily average users, monthly average users, and average revenue per user), but do not report any financial value for user data. Financial analysts consider this "user base" information when estimating future market valuations for these companies.

Depending on the outcome of this on-going debate, financial professionals may eventually be required to identify and value user data-related assets in the financial statements of companies—an interesting future topic. Because users are generally not compensated for their data, and are under no contractual obligation to continue to provide it (and, in some jurisdictions, are able to withdraw their permission to have their data used by companies), valuation will create significant new challenges for valuers.

VII. Summary and conclusions

This handbook provides an overview of the complex topic of IP valuation by addressing different sides of the subject, such as:

- The particularities and challenges of valuing IP assets compared to other categories of assets.
- The many variables which may influence the value of IP assets—including the types of IP rights at stake, the larger valuation context, the purpose of the valuation, and the moment in time in which it takes place.
- The definitions of IP valuation adopted by relevant organisations and the importance of standards as a basic framework and guidance tool in IP valuation processes.
- The main approaches to valuing IP assets (i.e. cost, income and market and their variations), which have received broad acceptance in most jurisdictions.
- Aspects to consider in a preliminary analysis (before applying any of the approaches) to identify the context of the IP asset.
- Steps to follow in the process of IP valuation under each of the main valuation approaches.
- Valuation in international taxation, including transfer pricing of intangibles, and the impact of IP rights on the customs value of goods to be imported.
- Recent and anticipated developments in the IP landscape with impact on the valuation of IP assets.

IP valuation is a topical issue as companies and inventors are increasingly looking to place a value on their intellectual property assets, given that a growing proportion of company value is in IP. This trend is therefore expected to continue, accompanying the strong growth of the knowledge and digital economy. ICC hopes that this handbook will help businesses better understand and navigate this process, and contribute to the development of this area.

Notes

ABOUT THE INTERNATIONAL CHAMBER OF COMMERCE (ICC)

The International Chamber of Commerce (ICC) is the world's largest business organization representing more than 45 million companies in over 100 countries. ICC's core mission is to make business work for everyone, every day, everywhere. Through a unique mix of advocacy, solutions and standard setting, we promote international trade, responsible business conduct and a global approach to regulation, in addition to providing market-leading dispute resolution services. Our members include many of the world's leading companies, SMEs, business associations and local chambers of commerce.

We make business work for everyone, every day, everywhere.

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