

IP Valuation Toolkit

ASEAN Region



WORKING DRAFT

**WIPO ASEAN
IP Valuation Project**

**IP Valuation Toolkit
Version 1.0**

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Acronyms

| | |
|----------------|--|
| AI | Artificial intelligence |
| AICPA | American Institute of Certified Public Accountants |
| ASEAN | Association of Southeast Asian Nations |
| AWGIPC | ASEAN Working Group on IP Cooperation |
| BEPS | Base erosion and profit shifting |
| CAPM | Capital asset pricing model |
| CIMA | Chartered Institute of Management Accountants |
| COE | Cost of equity |
| DCF | Discounted cash flow |
| DIN | Deutsches Institut für Normung |
| DOF | Department of Finance |
| DOST | Department of Science and Technology |
| DTI | Department of Trade and Industry |
| ERP | Enterprise resource planning |
| ESG | Environmental social governance |
| EUIPO | European Union Intellectual Property Office |
| FTO | Freedom to operate |
| GAAP | Generally accepted accounting principles |
| IA | Intangible assets |
| IAS | International Accounting Standard |
| IASB | International Accounting Standards Board |
| IFRS | International Financial Reporting Standards |
| IP | Intellectual property |
| IPOPHL | Intellectual Property Office of the Philippines |
| IPR | Intellectual property rights |
| IRS | Internal Revenue Service |
| ISO | International Organization for Standardization |
| ISSB | International Sustainability Standards Board |
| IVAS | Institute of Valuers and Appraisers, Singapore |
| IVS | International Valuation Standard |
| IVSC | International Valuation Standards Council |
| M&A | Mergers and acquisitions |
| MAPPI | Indonesian Appraisal Professional Society |
| MEEM | Multi-period excess earnings method |
| MSME | Micro, small, and medium enterprises |

| | |
|----------------|--|
| MyIPO | Intellectual Property Corporation of Malaysia |
| OECD | Organisation for Economic Co-operation and Development |
| OJK | Indonesian Financial Services Authority |
| PPSA | Personal Property Security Act |
| R&D | Research and development |
| R&I | Research and innovation |
| RICS | Royal Institution of Chartered Surveyors |
| RISM | Royal Institution of Surveyors Malaysia |
| RO | Real options |
| ROE | Return on equity |
| | |
| RPSM | Residual profit split method |
| SPI | Indonesian Appraisal Standards |
| TAPI | Technology Application and Promotion Institute |
| TRL | Technology readiness level |
| USPTO | United States Patent and Trademark Office |
| WACC | Weighted average cost of capital |
| WIPO | World Intellectual Property Organization |

Introduction

This toolkit serves as reference for intellectual property (IP) valuation professionals, to facilitate the application of common standards and best practices when valuing IP and related intangibles in the ASEAN region. It aims to equip you with the knowledge and tools necessary to navigate the landscape of IP valuation and provide you with helpful insights in the valuation of IP assets and related intangibles.

IP valuation plays a pivotal role in bridging the gap between the business world, accounting, tax and the financial sector. This field is essential for unlocking the value of IP to help today's bright minds drive economic growth and societal impact through their creations and innovations.

This toolkit covers different valuation and value concepts, the valuation process, best practices, reporting and results presentation, as well as valuation methods including cost, market, income and advanced approaches. In addition, it touches on the role of the valuer and professionalism. The last section of the toolkit contains country-specific guidance on IP valuation practices and requirements in the ASEAN region.

This toolkit was developed under the WIPO ASEAN IP valuation project. This version will be reviewed and refined based on the feedback from the pilot training to be organized as a part of the project in 2024.

Who should use this toolkit?

The toolkit is designed for valuation professionals who already have a basic understanding of the IP valuation approaches and methodologies.

1. What are IP rights and related intangibles?

Intangible assets deliver value but take no physical form.

They include

- legal rights (e.g., contracts, licenses, franchises);
- relationships (e.g., customers, suppliers); and
- IP rights.

Therefore, IP is a special classification and subset of intangibles that is protected by law and attributes ownership.

There are several different types of intangible assets, including IP, that have value, as provided for in the International Valuation Standards (IVS) of the International Valuation Standards Council (IVSC). These types are described in IVS 210 Intangible Assets, as excerpted below.

“20.3 There are many intangible assets, but they are often considered to fall into one of the following five categories (or goodwill):

- (a) marketing-related: marketing-related intangible assets are used primarily in the marketing or promotion of products or services. Examples include trademarks, trade names, unique trade design and internet domain names,
- (b) customer-related: customer-related intangible assets include customer lists, backlog, customer contracts, and contractual and non-contractual customer relationships,
- (c) artistic-related: artistic-related intangible assets arise from the right to benefits such as royalties from artistic works such as plays, books, films and music, and from non-contractual copyright protection,
- (d) contract-related: contract-related intangible assets represent the value of rights that arise from contractual agreements. Examples include licensing and royalty agreements, service or supply contracts, lease agreements, permits, broadcast rights, servicing contracts, non-competition agreements and natural resource rights, and
- (e) technology-based: technology-related intangible assets arise from contractual or non-contractual rights to use patented technology, unpatented technology, databases, formulas, designs, software, processes or recipes.”

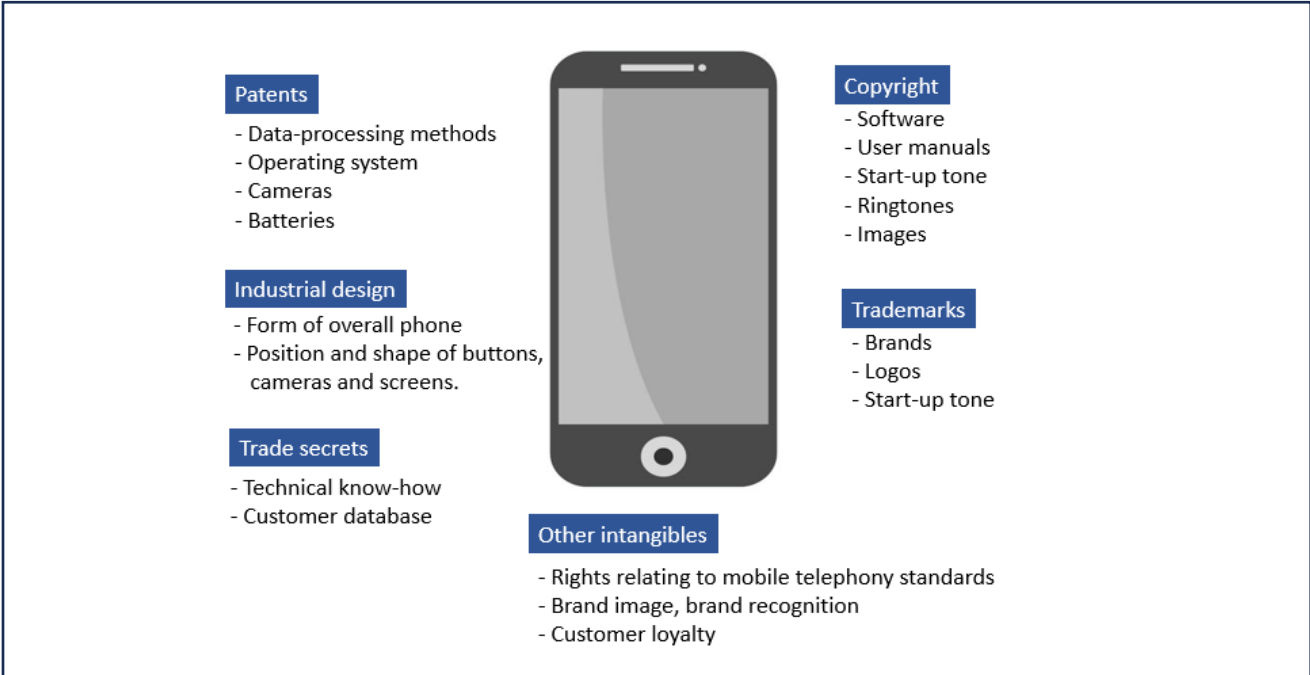
IP rights vary in what they protect, for how long and how strongly, as show in the table below. Each type of IP, as legal rights, are territorial in nature and often governed by national or regional legislation and law. Therefore, the specific life span and scope can vary within a category of IP, depending on the laws of the country concerned. It is advisable to obtain a legal opinion on the status and validity of these IP rights to confirm assumptions, scope of protection and ownership in any IP valuation assignment, unless the practitioner is also a qualified IP lawyer and/or patent attorney, and able to assess the IP in question for that jurisdiction.

| IP rights | What it protects | How long it lasts | Registration and scope |
|--------------------|---|--|---|
| Industrial designs | 2D or 3D features like shape, patterns, lines, or color. May also be relevant to graphic symbols and icons. | At least 10 years – varies from country to country. | Registered with the local IP office . ¹ Rights are country specific, so geographic coverage may vary. Protects against independent creation. |
| Patents | Inventions, like a new product or process, or an improvement to either of these. | Generally 20 years if renewal fees are paid, but can be longer. | |
| Utility models | Some types of inventions, depending on the country. | Usually 7 to 10 years. | |
| Trademarks | Brand names, logos, and other signs that can distinguish goods. Protects words, phrases and images in particular. | Usually 10 years; renewable as long the trademark is being used. | |
| Copyright | Creative outputs like artworks, writing, video, software, website content and images | Author’s lifespan + 50 years, minimum. | Registration is not required but possible in some countries. Does not protect against independent creation. |
| Trade secrets | Any information that has commercial value due to its confidential nature like | As long as the information | There is no registration process; the owner |

¹ In the case of trademarks, some countries offer limited protection even if not registered.

| | | | |
|--|--|-----------------------|---|
| | recipes, customer lists and manufacturing processes. | remains confidential. | <p>must take reasonable measures to keep it safe.</p> <p>Does not protect against independent creation.</p> |
|--|--|-----------------------|---|

IP owners typically use a mix of rights. For example, the figure below shows IP rights and other intangibles relating to a smartphone.



2. Professionalism

IP valuation needs a professionalized approach.

IP valuation is not just about the knowledge of IP. It requires understanding of future benefits of existing rights in a given technology, product or service in a given business environment.

Certain principles should govern the IP valuation, specifically competence, ethics, and objectivity. Competence refers to understanding the significance of the IP asset at stake for a given enterprise and mastering the relevant valuation techniques. Ethics require the valuer to conduct their work diligently, and impartially, forming an unbiased opinion. Objectivity implies that the valuer considers possible deviations from the initial assumptions, qualifies and quantifies them, and assesses risks and uncertainty independently of the client's assumptions and beliefs.

Quality, consistency and a systematic approach are essential. Quality goes beyond adhering to standards. It is the direct result of the valuer's rigorous approach for determining qualitative aspects of the asset in the given business environment, the purpose of the valuation, and, moreover, the understanding of the implications of assumptions made on the final value range assessed. Consistency, on the other hand, involves considering other value drivers such as the overall value of the business segment or the return on investment of similar assets within the company. It is key to understand that, by definition, IP value depends on the date where it is performed.

3. Skills and expertise

What skills are required to perform an IP valuation?

IP valuation requires an understanding of the fundamental mathematical and financial concepts involved in the different approaches used. It is important for the valuer to understand the limitations of the values determined and to be able to defend the assumptions made in case of audits or contestations. Consequently, the valuer must understand the relevant inputs to the valuation itself, such as risk assumptions made, etc.

An IP valuer is an aggregator of information.

To conduct a meaningful and reliable IP valuation, several inputs are required. These include understanding how the IP relates to the business plan and taking into account internal and external factors affecting its value, such as IP, competition, variations in supply/demand, market-segment structuring, etc. Additionally, the financial market environment should also be considered.

An IP valuer is not expected to be an expert in all these topics' areas. However, the valuer must be able to collaborate with specialists in these domains to source the required inputs. Therefore, the role of the valuer is more that of a facilitator and communicator rather than a subject matter expert in all relevant areas.

Asking the right questions

An IP valuer must understand and be able to communicate effectively with the relevant stakeholders. Generally speaking, these stakeholders may be professionals such as business managers; scientific experts; R&D staff; marketing & sales managers; IP professionals; and finance, accounting and tax managers. When industrial and process features are key, appropriate and relevant points of contact may include industrial, engineering, manufacturing and supply chain managers. This requires both an understanding of the expert's terminology and natural curiosity. An IP valuer needs to demonstrate the ability to ask the right questions to source the information required. For example, local frameworks and standards may have an impact on asset values. A valuer may not be fully familiar with these but needs to know if they exist in order to form a complete picture, e.g., local tax rules of amortization. A focused conversation with a tax/accounting expert may provide the needed clarity about the inputs that may need to be taken into account by the valuer.

4. Standards and values

In order to uphold the quality of IP valuation at stake, regardless of the purpose of valuation, reference to specific standards is recommended, if not required.

Generally, international standards provide a suitable framework. However, some countries have developed their own standards to be used when valuation is made for local purposes (see local information in section 13. Country specifics).

The definition of the basis of value used in IP valuation is key, and it is a valuer's responsibility to choose the relevant basis of value depending on valuation purpose, applicable standards and circumstances:

- Market value and fair market value are the most commonly applied.
- Other definitions can apply (i.e., equitable value, synergistic value, investment value, liquidation value).

It is important for the valuer to familiarize themselves with the basis of value concepts and understand the nuances and differences between them. The differences between these definitions can have significant consequences on valuation outcomes. For example, the determination of a liquidation value as per IVS can be determined under two different premises, i.e. an orderly transaction with a typical

marketing period, or a forced transaction with a shortened market period. In the latter case, the valuation will generally result in a lower value.

4.1 Common international standards

There are many valuation standards at local and global level. At the local level, these usually refer to local guidance and laws, such as tax regulations. Despite the existence of global standards, there is often a lack of harmonization between jurisdictions regarding local valuation rules and regulations. Therefore, it is important to be familiar with the standards relevant to your valuation purposes.

Below, a number of global standards are described.

4.1.1 [International Valuation Standards Council](#) (IVSC)

The IVSC is a non-profit organization dedicated to establishing and promoting global valuation standards. The generally useful framework is shown below, with highlights on IVS 104, 105 and 210, which are the most important for IP valuers. They can be downloaded from [here](#) (for members only):

- IVS 101 Scope of Work
- IVS 102 Investigations and Compliance
- IVS 103 Reporting
- **IVS 104 Bases of Value**
- **IVS 105 Valuation Approaches and Methods**
- IVS 200 Businesses and Business Interests
- **IVS 210 Intangible Assets**

4.1.2 [International Financial Reporting Standards](#) (IFRS)

The IFRS Foundation is a non-profit, public interest organization established to develop globally accepted accounting and sustainability disclosure standards. The Standards are developed by two standard-setting boards, the International Accounting Standards Board (IASB) and International Sustainability Standards Board (ISSB). Access to standards is subscription-based, from [here](#).

The most important ones for IP valuers are:

- IAS 13 Fair Value Measurement
- IAS 38 Intangible Assets

4.1.3 [Royal Institution of Chartered Surveyors](#) (RICS)

RICS is a professional body hosting more than 130,000 members worldwide and provides namely documentation and training programs.

Red Book Global Standards, which details mandatory practices for RICS members undertaking valuation services, can be purchased [here](#).

Valuation of IP rights can be viewed [here](#).

4.1.4 [International Organization for Standardization](#) (ISO)

ISO is an independent, non-governmental international organization with a membership of 170 national standards bodies, aimed at developing voluntary, consensus-based and market-relevant international standards.

The following standard is useful for brand valuations and can be purchased [here](#):

- ISO 10,668 Brand Valuation.

4.1.5 [Deutsches Institut für Normung](#) (DIN)

DIN edits standards through working bodies, overseen by about 70 standards committees. Among these standards, the following one is a reference for patent valuations, as it highlights, in particular and in addition to the valuation methods themselves, detailed information about factors influencing the value:

- DIN 77100 Patent Valuation (can be purchased [here](#)).

4.1.6 AICPA & CIMA

The American Institute of Certified Public Accountants (AICPA) and the Chartered Institute of Management Accountants (CIMA), with more than 600,000 members, students and engaged professionals in 188 countries and territories. They generally provide guidance and specialized resources. For IP valuers who are AICPA members, the following valuation services toolkit (on intangible assets) is useful:

- VS 100 Toolkit (downloadable [here](#)).

4.1.7 [OECD – BEPS](#)

Concerning valuation for tax and transfer-pricing purposes, the OECD has published an inclusive framework on base erosion and profit shifting (BEPS). These guidelines are adapted locally to most of the developed countries in the world.

OECD Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations can be downloaded or purchased [here](#).

The table below shows the most commonly used global standards for intangible assets related to IP:

| Applicable for | Standards |
|--------------------------|---|
| All IP types | <ul style="list-style-type: none"> • IVS 104 Bases of Value • IVS 105 Valuation Approaches and Methods • IVS 210 Intangible Assets • IAS 13 Fair Value Measurement • IAS 38 Intangible Assets • RICS Valuation of intellectual property rights • AICPA & CIMA VS 100 Toolkit |
| Trademarks and brands | <ul style="list-style-type: none"> • ISO 10668 Brand Valuation |
| Patents | <ul style="list-style-type: none"> • DIN 77100 Patent Valuation |
| Tax and transfer pricing | <ul style="list-style-type: none"> • Base erosion and profit shifting (BEPS) • OECD Transfer Pricing Guidelines for Multinational Enterprises and Tax Administrations |

4.2 Definitions of values

When conducting a valuation, the appropriate basis of value has to be selected. There are several different definitions for bases of value described in this section. The appropriate definition will depend on the purpose of the valuation.

4.2.1 Fair market value

- OECD: “The Organisation for Economic Co-operation and Development (OECD) defines ‘fair market value’ as the price a willing buyer would pay a willing seller in a transaction on the open market.”
- IRS (USA): “The fair market value is the price at which the property would change hands between a willing buyer and a willing seller, neither being under any compulsion to buy or to sell and both having reasonable knowledge of relevant facts.”

For example, fair market value would be applied to determine the value of an IP asset in contexts of reporting on the balance sheet or of an M&A, or for transfer pricing purposes

4.2.2 Market value

IVS: “the estimated amount for which an asset or liability should exchange on the valuation date between a willing buyer and a willing seller in an arm’s length transaction, after proper marketing and where the parties had each acted knowledgeably, prudently and without compulsion.”

Market value and fair market value are essentially the same for IP assets.

4.2.3 Equitable value

IVS: “the estimated price for the transfer of an asset or liability between identified knowledgeable and willing parties that reflects the respective interests of those parties.”

Equitable value would be used when a case buyer and seller agree for a price which does not reflect the general market, but the specific interest of the parties. For example, the IP asset may complement the existing patent and technologies portfolio of the buyer, but not competitors.

4.2.4 Investment value / worth

IVS: “an entity specific basis, ie (sic) it is a measure of the value to a particular party of owning an asset, which may be different from the price that could be obtained in a sale. Investment Value in itself does not presume a transaction or a hypothetical exchange.”

For example, Investment Value can be used to determine the value of IP assets for management decision purposes, such as prioritizing investment in R&D projects. The valuation in this case would assess the benefit of holding the asset(s) without any objective of selling or transferring the asset(s).

4.2.5 Synergistic value

IVS: “the result of a combination of two or more assets or interests where the combined value is more than the sum of the separate values.”

For example, when a specific buyer plans to purchase a patent to round out its existing patent portfolio, thereby making it possible to generate higher margins or sales, synergistic value would be used by the valuer to assess the IP value for the buyer. It is often used for management decision-making purposes.

4.2.6 Liquidation value

IVS : “the amount that would be realized when an asset or group of assets are sold on a piecemeal basis. Liquidation Value should take into account the costs of getting the assets into saleable condition as well as those of the disposal activity. Liquidation Value can be determined under

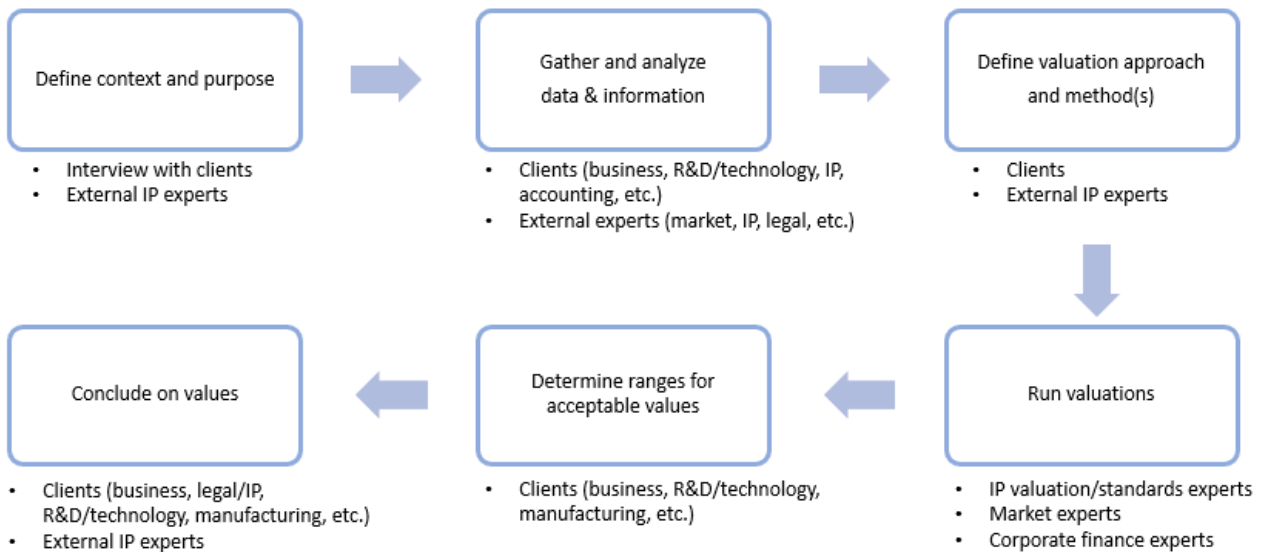
two different premises of value: (a) an orderly transaction with a typical marketing period, or (b) a forced transaction with a shortened marketing period.”

The context of use is that of liquidation of enterprises or parts of businesses, generally relocated first into a specific legal entity or group of entities. As such, it is generally the minimum value of a given IP asset, and such valuation can be useful for “acid test” purposes.

5. Valuation process

Following a structured and systematic valuation process is a key to contributing to consistency and reproducibility of the IP valuation at hand.

The general steps and parties involved at each step can be described as follows:



The following section provides illustrative details of the activities and scope of work performed at each respective step of the valuation assignment.

(1) Define the context and purpose of the valuation

The objective of the initial step is to determine as clearly as possible the context and purpose of the valuation to be performed. This is generally done through interviews with the client, who may but does not necessarily have to be the IP owner.

The deliverables for this step are

- the definition of the asset; and
- the technological and economic/business context.

(2) Gather and analyze data and information

In this step, all the data needed for the valuation process will be gathered. This can include details of the asset at stake, economic data and model data.

This information is generally obtained through interviews, meetings with the client (e.g., for risk analysis) and database research for all relevant characteristics of the asset. It is important to rationalize, justify and document the relevant input parameters.

The deliverables for this step are:

- detailed asset information;
- a technical review and risk assessment;
- management interviews;
- business and market information such as financial statements, business plans (including useful life assessment) and value chain;
- IP due diligence; and
- competition analysis.

(3) Define valuation approach and method(s)

Having gathered, digested and structured all needed information, the aim of this step is to define the detailed approach to the valuation assignment. The approach should be validated with the client.

The deliverables are:

- the standard and premise of value;
- the date of valuation;
- applicable standards;
- applicable regulations;

- choice of valuation method(s); and
- justification of all choices.

(4) Run valuation(s)

The valuer uses the method(s) considered most adequate for the IP asset at hand and applies the selected method(s) in the context of the valuation assignment. It is important to justify and challenge the assumptions made, in particular those having a high impact on the final range of values itself.

Deliverables for this step are:

- estimates and challenge inputs to the model(s); and,
- depending on valuation model, extended market and business data research results.

(5) Determine ranges for acceptable value(s)

As the value of an intangible asset is an opinion and depends on a range of parameters, the outcome is a range of possible values. Testing for the sensitivity of this output (IP value) to the inputs (market data, model parameters, etc.) is key to assessing the reasonable range of possible variation around the base-case IP value determined.

Deliverables for this step are:

- a simple sensitivity analysis;
- a sanity check: comparison to other valuations when possible, “rules of thumb”, other valuation methods, etc.;
- an estimation of main parameters/inputs impacting value; and
- sophisticated analyses such as Monte Carlo simulation (optional, depending on the complexity of the valuation at hand).

(6) Conclude on value(s)

The final value and its possible range of variation are the deliverable the client expects. Its presentation should be accompanied by the following details:

- central value(s) and acceptable range(s);
- explanation of limitations of the valuation assignment;

- explanation of possible interpretations of the result(s); and
- presentation to the client.

6. Hurdles and best practice

6.1 Qualitative assessment of the IP asset

The value of an IP asset is driven by

- the usage of the asset to generate revenues (through sales, services, etc.);
- the intrinsic qualitative characteristics (strengths and weaknesses) of the IP in relation with its usage; and
- the qualitative strengths and weaknesses of the IP itself.

Practical steps to make a qualitative assessment of the IP asset are described below.

(i) Determine the role of the IP asset in the business environment.

Start by characterizing the role of the IP asset for the business. Establish the market position, profitability, competitive position, better processes and decisions; build reputation; capture more value from existing assets, etc.). Also identify the products (product lines) and/or services protected by the IP being valued.

(ii) Determine the qualitative strengths and weaknesses of the IP (IP due diligence).

Start with the legal and IP law aspects. This includes determining the IP asset's

- legal status;
- ownership and any usage restrictions;
- protectability;
- scope of protection, including the potential to circumvent existing patents; and
- ability to enforce.

The ability to use the IP asset should also be determined. For example, does the IP owner have the ability to use it without infringing other third-party rights?

(iii) Determine the context of the asset in the market.

This includes evaluating technological aspects and key value drivers, such as

- technical application field;

- feasibility and scalability;
- technology lifecycle; and
- potential for technical substitution.

Economic aspects also need to be considered, such as

- market potential;
- availability of complementary abilities and assets (know-how, financial resources, etc.);
- impact of the IP on the elements of the business model and plan; and
- interdependencies (synergetic and detrimental).

An IP valuer can conduct due diligence by

- conducting initial and follow-up interviews with the client;
- gathering information on the IP status from databases and company information;
- reviewing IP prosecution and enforcement history; and
- evaluating the regulatory environment.

6.2 Low-scrutiny valuations

For internal decision-making purposes, when speed is key, an approximation of the value is often sufficient for comparisons of scenarios, for example

- strategic decisions such as “make or buy”;
- allocation of research and innovation (R&I) and IP resources to business units;
- prioritization of research and development (R&D) project portfolios;
- mergers and acquisitions (M&A): allocation of intangible assets between legal entities, with transfer pricing impacts; and
- insurance of IP portfolios: yes/no decisions.

In this case, non-detailed input data can be used, including

- global market trends;
- statistical values (e.g., medians) for success rates, royalty rates, useful lifetimes, etc.;
- rules of thumb (e.g., royalty rate = 20-30% x EBIT/Sales); and
- sector return-on-investment statistics for discount rate determination.

The results should always show sensitivity to parameters, implying the range of so-determined IP values.

6.3 Royalty rate benchmark

In the case where the relief-from-royalty method is used for valuation, determining acceptable royalty rates requires thorough analysis and reproducible methodology. This is done by benchmarking the IP at stake to existing comparable licensing transactions extracted from reputable databases.

Practical steps to make a royalty rate benchmark are shown below.

6.3.1 Setting the scene

Determine a reasonable set of keywords.

Start by analyzing IP assets, associated reports, and a description of technology or brand. These keywords may need to be expanded to include various industries and applications, as different industries may have different standards and practices, and these may be applicable to the IP at stake or useful for valuation purposes.

Determine what “comparable agreements” means.

In this step, a valuer should consider the types of agreements to include. For example, if license agreements are included, will there be any exclusions such as those where sublicense is not allowed, if it is bundled with other services like software development, research, or the exchange of know-how and technology?

Set criteria for comparability in terms of usage of technology:

- The licensor allows the manufacture, use and commercialization of the licensed products/processes/technologies.
- The licensed products include comparable products and technologies.
- The remuneration system for such license is based on a percentage of licensee’s sales (net/gross to be defined).

Set as many comparability criteria as needed. This is generally the most difficult part. An IP valuer will need to fine-tune the criteria while analyzing the set of potential candidate agreements.

Set as rigorous criteria as possible.

Establishing clear criteria to determine whether to include or exclude a comparable agreement is critical. This both helps explain the valuation and make it more replicable.

6.3.2 Analysis

Identify agreements with potentially comparable terms.

The process begins by understanding the search engine being used. Using the search fields, aim for a set of broader parameters in the beginning and narrow them down to “reasonable” ones. It is recommended to identify between 100 and 500 agreements reached.

These results should be manually refined by sampling and going through a detailed review of the individual agreements. Where possible, the agreements should be cross-checked with other sources where possible.

When reviewing each document, either accept or reject them. It helps to record information about why an agreement was rejected or accepted.

In some cases, it can be useful to carry out an automated refinement of the obtained sample of agreements through a review of the agreement characteristics.

A keyword search in relevant fields can also be useful.

Analyze the subsequent set of royalty rates.

Start by determining maximum, minimum, upper- and lower-quartile, and median royalty rates of the agreements you identify.

Remain unbiased and objective: your assessment is your responsibility, even if the answer is not what you expect.

7. Useful data sources

Performing IP valuation requires many types of reliable data and access to a set of databases.

- **Market and company data** are needed to perform and challenge the business plans associated with the asset.
- **IP court cases and deals & transaction bases** are useful to search for comparable transactions.
- **IP databases** are needed to determine the qualitative characteristics of the asset at stake.
- **Data for return on capital of specific industries** are useful both
 - to determine components of the discount rate used in discounted-cash-flow DCF computations; and
 - to benchmark the discount rate(s) used in DCF computations.
- Determining suitable **royalty rates** necessitates both
 - access to databases (for a license agreement search); and
 - a solid and reproducible process to determine the applicable statistics.

Some useful data sources for each of these categories are provided in the table below.

| Type | Name | Description | Payable/ Free |
|-----------------------|---|--|------------------|
| Market reports | BCC Research | Market research reports: medical devices, biotechnology, plastics, genomics, artificial intelligence, etc. | Payable |
| Market reports | Euromonitor International | Insights, forecasting, macro analysis, global surveys, trend analysis, market analysis. | Payable |
| Market reports | Freedonia | Industry reports for market analysis: automotive & transport, packing, water treatment, construction & building products, etc. | Payable |
| Market reports | Fortune Business Insights | Trending reports by industry: healthcare, information & technology, machinery & equipment, food & beverages, energy & power, agriculture, etc. | Payable |
| Market reports | GfK | Data-driven insights on consumer behavior, market dynamics, tech trends & innovation, omnichannel & retail, brand, sustainability. | Payable |
| Market reports | Market Research | Market research: consumer goods, food & beverage, heavy industry, service industry, life sciences, technology & media, etc. | Payable |
| Market reports | Nielsen | Insight reports: advertising, audiences, digital & technology, marketing performance, media, sports & gaming, TV & streaming. | Payable |
| Sector & company data | CSIMarket | Total market by sector performance. | Free/Payable |
| Sector & company data | FACTSET | Financial data and analytics. | Free/Payable |
| Sector & company data | KROLL Cost of Capital Navigator | Online platform that guides through the process of developing the global cost of capital estimates, a key component of any valuation analysis. | Free/Payable |

| | | | |
|-----------------------|--------------------------------------|--|---------|
| Sector & company data | ISEG | Financial markets data. | Payable |
| Sector & company data | S&P – Capital IQ | Public company financials, estimates, ownership, and transactions. Industry data for financial institutions, insurance, energy, real estate, metals & mining, healthcare, industrials, consumer discretionary, and technology, media, and telecoms. | Payable |
| Sector & company data | Yahoo Finance | Comprehensive hub with extensive news coverage and analytical tools. | Free |
| Court cases | CaseMine | Generative artificial intelligence (AI) trained tool to assist in finding answers to legal queries. | Payable |
| Court cases | Lexis Nexis | Generative AI trained tool to assist in finding answers to legal queries. | Payable |
| Court cases | Nexis Library | Generative AI trained tool to assist in finding answers to legal queries. | Payable |
| Court cases | tpcases | Case database searchable by categories such as transfer pricing methods, royalty and license payment, etc. | Free |
| Court cases | Westlaw | AI assisted search database. | Payable |
| Deals & transactions | SEC - EDGAR | Database of filings received and processed at the US Securities and Exchange Commission: public companies' financial information and operations, information provided by mutual funds (including money market funds), exchange-traded funds (ETFs), variable annuities, and individuals. | Free |
| Deals & transactions | Deal Stats | Comparison of private and public company transaction. | Payable |
| Trademarks deals | Markables | Trademarks and their valuation data. | Payable |

| | | | |
|--|-----------------------------------|---|--------------|
| License agreements/ Royalty rate | ktMine | Access to full-text and summary agreements along with disclosed royalty and market rates. | Payable |
| License agreements/ Royalty rate | RoyaltyRange | Transfer pricing databases. Royalty-rate search, royalty-rate reports. | Payable |
| License agreements/ Royalty rate | RoyaltySource | By screening the database of royalty payment, provide a report including royalty rates as a percentage of some financial bottom line; description of the property licensed or sold, such as IP property; field of use of other compensation; transaction terms. | Payable |
| License agreements/ Royalty rate | RoyaltyStat | Online database of license and service agreements. | Payable |
| License agreements/ Royalty rate | IPSCIO | The Royalty Rate Annual Summary Report provides benchmarks for technology licensing rates covering 15 industries from over 30 years of data. Average and median royalty rates (based on a percent of sales) by industry are presented. | Payable |
| License agreements/ Royalty rate | RoyaltyStatistics | Online database containing royalty-rate reports and key licensing terms. | Payable |
| Expected return on capital by industry | Bloomberg | Market data across the enterprise with access to the comprehensive real-time market data available. | Payable |
| Expected return on capital by industry | DAMODORAN | List of return on capital by sector. | Free |
| Expected return on | Finbox | Return on capital trends and charts by firm and industry. | Free/Payable |

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|--|--|--|--------------|
| capital by industry | | | |
| Expected return on capital by industry | McKinsey | To understand the drivers of value for a business and their evolution over time with return on capital tree decompositions. | Free/Payable |
| IP database | ASEAN IP Register | A single portal to access complete sets of ASEAN IP data including patents, trademarks and design filing. | Free |
| IP database - patents | WIPO INSPIRE | Information on patent search, patent analytics, technology transfer, institutional IP policies. | Free |
| IP database - patents | WIPO PATENTSCOPE | Full-text search of published international Patent Cooperation Treaty applications and machine translation for some documents, national and regional patent documents, non-patent literature. | Free |
| IP databases - patents | | Online access to patent collections is provided by many countries/regions. Some available databases: <ul style="list-style-type: none"> • China National Intellectual Property Administration (CNIPA) • Japan Patent Office (JPO) • European Patent Office (EPO) Espacenet • United States Patent and Trademark Office (USPTO) | Free |
| IP database - patents | LENS.ORG | Patent search and analysis. | Payable |
| IP database - patents | Google Patents | Full-text patent search. | Free |
| IP database - trademarks | WIPO Global Brand Database | Access to the collections of: <ul style="list-style-type: none"> - international trademarks under the Madrid System; - appellations of origin and geographical indications under the Lisbon System; and - trademarks from participating national and regional offices. | Free |

| | | | |
|--------------------------|---|---|------|
| IP database - trademarks | | Online access to trademark collections is provided by many countries/regions. Some available databases : <ul style="list-style-type: none"> • CNIPA • JPO • European Intellectual Property Office (EUIPO) • USPTO | Free |
| IP database - design | WIPO Global Design Database | Access to international designs under the Hague System and designs from participating national and regional offices. | Free |

8. IP valuation methods

There are most generally three categories of methods which can be used to assess the value of a given IP asset.

The choice of one or ideally a combination of several methods is a crucial decision, which must be made after a thorough analysis of, at minimum:

- the purpose of the valuation;
- the type of asset at hand and its characteristics; and
- the accessibility and reliability of data necessary for the valuation.

This toolkit will focus on the following IP valuation methods:

- cost approach;
- market approach; and
- income-/revenue-based approaches including the following:
 - DCF
 - royalty relief
 - incremental revenues
 - residual profit split
 - real options.

8.1 Cost approach

The general idea of the cost approach is that the value of the asset is determined by the costs needed to create a similar asset at a given point in time or to create another one generating the same benefits for the user.

Generally, this implies determining R&D costs and IP-asset-filing-related costs, opportunity costs (the loss of opportunities while developing the asset at stake) and estimations of obsolescence-related costs.

Correlation between costs and value is generally highly questionable. For example, it wholly disregards the uniqueness of the IP/Technology and does not adequately reflect the evolution of the environment (obsolescence or time-lag effects) or the IP/technology's ability to generate future profits and its ultimate market share potential.

The cost method is generally utilized whenever replacement is possible, and, if not, it can be generally useful in the event there is no other available data. As such, it is more adapted to early-stage development IP/technologies and as a comparison to other methods.

8.2 Market approach

In the market approach, IP value is determined by reference to market activity (for example, transactions involving identical or similar assets) as the amount for which equivalent IP was transacted at arm's length on the open market. The IP market is not very transparent, and information is scarce and often incomplete. Therefore, identifying comparable or similar assets that have been sold or listed for sale can be challenging. The difficulty lies in comparability: two IP assets are by definition different.

Recommended approaches (now also backed by less deterministic approaches) rely on sets of comparability criteria such as the following, using the example of patents:

- patent family size;
- citations analysis, technical coverage;
- geographical coverage, legal strength; and
- market attractiveness.

In addition to the reliability of the above approaches, valuations strongly depend on the quality and size of the transactions databases used for statistical analyses.

The market approach is often used for patents, patent portfolios and trademarks. Most often, it is used as a second approach in parallel with another approach. In addition, reference to market activity is useful as a starting point for income-based forecasts and for valuation of mature technology.

In a transfer-pricing context, some standards put particular emphasis on reference transactions, explicitly requiring the market approach being used.

8.3 Income approach

The general idea of the income-based IP valuation approach is that the value of the asset is derived from its ability to generate future cash flows.

This approach requires a range of assumptions to be made for its use:

- reasonable projections of future benefits from the IP, which can be derived from the business plan; and
- assumptions about the characteristics of the asset (e.g., its economic lifetime).

The income approach is consequently more suitable for technologies/products/services close enough to market launch to allow such hypotheses.

Given the range of possible inputs, it is a very flexible and versatile approach. The income approach is used in most valuations, including in transaction contexts.

This generally implies estimating the **probable** incremental cash provided by the asset, such as

- royalty cash flows (“relief-from-royalty” method);
- incremental margins (sales increase and/or cost savings);
- residual profit strictly attributable to the asset at stake; and
- comparing the situation “with the asset” to the situation “without the asset” (the “with and without method”).

These approaches are the most commonly used IP valuation approaches.

Comparison of methods

| | Costs approach | Market approach | Income approaches |
|-------------------|-----------------------|------------------------------------|--------------------------------------|
| Principle | Cost of replacement. | Comparison with real transactions. | DCF (revenues, profitability, etc.). |
| Key issues | Cost is not value. | Comparability. | Royalty rate. Discount rate. |

| | | | |
|----------------------------|---|---|---|
| | | Quality of transactions databases. | |
| Application domains | If no other data available. Useful for early-stage technologies. | Patents. Patent portfolios. Trademarks. | All types of intangibles. |
| IP practice | Seldomly used as primary methods. | Used for patent portfolios essentially. | Very often used. Discount rate is NEVER a detail. |

9. Discounted cash flows

Discounted cash flow computations play a central role in income-based approaches.

The results of these computations are generally highly sensitive to the input assumptions made, such as:

- the reliability of cash flows assumed (revenues, such as royalties – thus royalty rate and sales - or excess earnings, IP-related costs); and
- the discount rate utilized to compute the net present value of these cash flows.

Determining an adequate discount rate based on the risk profile of the IP asset is key when dealing with future cash flows in valuation.

What follows is a set of guidelines concerning these cash flows and discount rate.

9.1 Cash-flows associated with the asset

As a first step, it is necessary to identify the incremental revenues strictly associated with the IP assets. This analysis can be subjective. It requires isolating revenues exclusively generated by the asset in the presence of needed complementary assets (marketing, manufacturing, etc.).

These revenues are identified in a variety of ways.

Relief-from-royalty

The relief-from-royalty method identifies the value of the IP asset based on potential royalty cash flows generated by a fictitious license to a third party. The royalty rate and potential range used must be carefully justified. The analysis should take into account the costs incurred with the IP, including maintenance fees and initial cost to secure the asset.

Incremental margins

This method considers the cost savings allowed by the asset, the sales increase enabled by the asset or a combination of both. It may also take into account the residual profit attributed to the asset, e.g., multi-period excess earnings method (MEEM) or residual profit split method (RPSM).

This method tends to attribute profit to IP only if other intangibles are not considered such as organizational capital and relational capital.

There is a high sensitivity of return on costs and consequently wide ranges of IP values as an outcome.

9.2 The question of discount rate

The discount rate is generally the parameter with the highest impact on results in income-based valuation.

It captures risks related to the asset in general. When probabilistic approaches are used, the discount rate explicitly captures business risk. (Asset Value = Probability of success x Asset Value, if no specific risks are supposed for the realization of income)

As a result, a thorough risk analysis must be conducted.

Some considerations on derivation of discount rates:

- Weighted average cost of capital (WACC) is not always a good proxy for discount rate if asset risk has a different risk profile from the remainder of the business.
- The capital asset pricing model (CAPM) allows modulization of return on equity (ROE).
- Addition of risk premiums is often a subjective exercise.
- Make sure no double counting of risks is done (e.g., in cash flows and in discount rate).

9.3 Discounting cash flows – best practice

Discounting is used to determine the net present value (NPV) of a given set of cash flows over a time of N periods, and for a given discount rate r:

$$Value = NPV = \sum_{t=0}^{t=N} \frac{CF_t}{(1+r)^t}$$

As the discount “r” reflects the future risks associated with the cash flow, one must discount the cash flows according to their specific risk.

9.4 Examples of potential risk categories

There are many ways of categorizing risks related to an IP asset. The most important is not to limit categorization only to the intrinsic technology or market risks. The general way of conducting such risk analyses is to organize meetings with stakeholders on the client side or external experts to list potential risks. This should be followed by classifying the key risks and determining mitigation actions for the most critical ones.

Technology readiness levels (TRLs) are a framework to assess the risk related to the development of technology. TRLs are a type of measurement system used to assess, from levels 1 to 9, the maturity level of a particular technology. For example, when a technology is at TRL 1, basic research is beginning. At TRL 3-5, product/technology development is being carried out, and TRL 6 technology has a fully functional prototype or representational model. TRL9 technology is already scaled-up and available in a market.

There are many other types of risks which may limit the capacity of a given IP asset to deliver value. Below is a partial list of potential risk categories.

| Risk category | Examples |
|--|---|
| <p><i>Technology</i> All risks related to the development of the technology.</p> | <ul style="list-style-type: none"> • Not attaining the technology objectives in terms of technology (product features, product usage quality). • Not attaining the technology economics (production costs, capex needed). • Not delivering the product or service on time. |
| <p><i>Plant start-up</i> Risks related to delayed or inadequate start of the industrial production.</p> | <ul style="list-style-type: none"> • Engineering risks such as delays in plant design, detailed engineering or realization. • Competencies: risk of losing existing critical technical and management competencies, or risks of not hiring/having the right competencies in time, etc. • Start-up team, e.g., risk that the team is not adequately staffed to answer emergencies or unforeseen difficulties. |
| <p><i>Manufacturing</i> Risks related to the correct operating of the manufacturing stage, after successful startup.</p> | <ul style="list-style-type: none"> • Raw materials: quality and costs, handling safety, etc. • Supply chain risks such as raw materials supply or final product transportation/delivery. |

| | |
|---|--|
| | <ul style="list-style-type: none"> • License to operate: e.g., risks of change in local regulations or communities' reactions. • Environmental social governance (ESG): general environment-, social- and governance-related risks. |
| <p><i>IT-related</i></p> <p>Risks related to the failure of IT infrastructure and data management/integrity.</p> | <ul style="list-style-type: none"> • Security of data. • Loss of trade secrets. • Software performance-related issues: enterprise resource planning (ERP) and other critical systems failure protection. |
| <p><i>Legal & IP</i></p> <p>Risk-related failure to comply with regulations, contractual terms or IP system.</p> | <ul style="list-style-type: none"> • Lack of freedom to operate, due to the existence of third-party IP rights in the same area. • The possibility that IP rights may be found to be invalid or canceled under a national or international IP system. |
| <p><i>Financial</i></p> <p>Risks related to the possibility of not achieving the expected financial outcome due to factors beyond the IP owner's control.</p> | <ul style="list-style-type: none"> • Liquidity and financing risks. • Market risks. • Fluctuations in foreign exchange rates. |
| <p><i>Team</i></p> <p>Risks related to the present composition of teams and planning of their evolution.</p> | <ul style="list-style-type: none"> • Technical/scientific skills: suitability or redundancy of the skills needed to perform the development and commercialization of the product/service. • Entrepreneurship: suitability of entrepreneurial spirit of teams, allowing anticipation and adaptation to uncertainties. • Business orientation: risk of under-skilled teams for correct business decision-making, market orientation, etc. |
| <p><i>Market</i></p> <p>Market-related risks.</p> | <ul style="list-style-type: none"> • Competition: risk of lack of anticipation of competition reactions, etc. |

| | |
|---|--|
| | <ul style="list-style-type: none"> • Risk of low market acceptance for the product/service. • Margins: e.g., risk of not being able to sell at high enough prices to cover costs and allow growth. |
| <p><i>Reputation</i></p> <p>Risks related to the threat to damage the public’s perception of the business. These risks are particularly an issue with respect to the value of brands and their associated trademarks.</p> | <ul style="list-style-type: none"> • Poor product quality. • Bad customer service. • Unfair labor. • Fraud or financial misdemeanors. |

9.5 Example of discount rate analysis grid

Determining an adequate risk-adjusted discount rate for DCF-based valuation is not an exact science. Many references exist to determine it with at least a reasonable order of magnitude. Here is one example.

| | |
|--|--------|
| <p>Risk-free, such as building a duplicate plant to respond to rising demand.</p> | 15-20% |
| <p>Low-risk, such as making a product with new features using a well-understood technology, in a presently served market with evidence of demand for such futures.</p> | 20-30% |
| <p>Moderate-risk, such as making a new product using well-understood technology and marketing it to a customer segment presently served by other products made by the corporation and with evidence of demand for such a product.</p> | 25-30% |
| <p>High-risk, making a new product using a not well-understood technology and marketing it to an existing segment, or a well-understood technology to a new market segment.</p> | 30-40% |

(Source: Richard Razgaitis, *Early-Stage Technologies: Valuation and Pricing*, Wiley, 1999)

10. Complements – advanced methods and tools

Sophisticated methods and tools can be useful as complements to the more standard methods.

The real-options method (income-based approach), derived from the theory of financial options, can be useful to determine an alternative value for an IP asset as a cross-check for the use of the primary methods.

Monte Carlo simulations, on the other hand, make it possible to determine a statistical range of possible values for the IP asset.

10.1 Real options

Real options valuation recognizes that IP assets, similar to financial options, can possess the potential to generate value beyond their immediate applications. It embraces the notion that opportunities embedded within IP assets can evolve, adapt, and unlock significant value over time.

Based on continuous time or binomial (discrete time) models, they are usually based on a complex mathematical model (e.g., the Black & Scholes model). These require many input parameters, some of which are difficult to assess (e.g., volatility and risk-free rate over the whole lifetime of the asset). Additionally, the method makes implicit restrictive assumptions given the model framework (e.g., probability distributions of outcomes, no transaction costs, etc.). It uses DCFs as inputs.

Since real options valuation can provide deeper insight into the current value, its evolution over time and its realization in future, its application can be warranted in certain situations, i.e., for early-stage technologies and R&D projects.

For more information, see the resources below.²

10.2 Monte Carlo simulations

Monte Carlo analysis involves using simulation techniques to provide for a more comprehensive and probabilistic assessment of the potential value of a technology, for example. This is done by running

² The fundamentals:

- Fischer Black and Myron Scholes “The Pricing of Options and Corporate Liabilities”. *Journal of Political Economy*, vol. 81, No. 3, 1973. pp. 637–654 (DOI 10.1086/260062).
- John C. Cox, Stephen A. Ross and Mark Rubinstein. “Option Pricing: A Simplified Approach”. *Journal of Financial Economics*, vol. 7, 1979, pp. 229-263.

Application to IP/IA valuations with examples:

- R. Razgaitis, *Dealmaking: Using Real Options and Monte Carlo*. Wiley. ISBN 0-471-25048-1.
- Tom Copeland, Vladimir Antikarov, *Real Options, a Practitioner’s Guide*, Cengage Learning. ISBN 13 978-1-58799-186-8
- Aswath Damodaran, “[Real Options: Fact and Fantasy](#)”.

multiple iterations of the model and considering a wide range of randomized inputs. Based on the large number of computer-based simulations of the various combinations of these inputs (such as initial sales, sales growth rates, foreign exchange rates, royalty rate, discount rate, useful lifetime of the asset, etc.), this approach yields a certain probability distribution of likely outcomes.

In the context of IP valuation, Monte Carlo simulations can be used to account for the uncertainty associated with key variables such as future cash flows, growth rates, discount rates, and market parameters. By generating a range of possible outcomes, the simulations allow for a more comprehensive understanding of the potential risks and opportunities associated with the IP asset.

It is often used in conjunction with the application of other valuation methods such as income approach, for example, to value early-stage-technologies and technology-based IP assets.

Useful Resources

| Name | Provider | Access |
|------------------------------|---------------------|-------------------------|
| ARGO | Booz Allen Hamilton | Free (limited features) |
| @RISK | Lumivero | Paid licenses |
| Crystal Ball | Oracle | Paid licenses |
| ModelRisk | Vose Software | Paid licenses |

11. Conclusion of value

The value of an IP asset is a context-dependent opinion.

The most effective way to define the possible valuation outcomes and the valuation range are generally

- sensitivity analyses to input parameters (royalty rate, discount rate, etc.); and
- scenarios, for example base case, best case (e.g., high and/or early sales), worst case (e.g., lower and/or delayed sales).

IP Value is AN OPINION

- at a given time, and
- in given circumstances.

It is always useful to determine principle-based ranges of potential values.

Accounting rules do not allow ranges of book values, so deciding on the right amount to be booked for accounting purposes is based on best judgement. However, sensitivity analysis should also be done in these cases. These include

- simple sensitivity analysis on assumptions and parameters; and
- Monte Carlo simulations in general:
 - Use variation ranges of key input parameters and assumptions.
 - Run simulations on relevant inputs.

12. IP valuation report

The final IP valuation report should clearly outline the steps taken during the IP valuation process, the conclusions reached regarding value, and their interpretation within the given context.

It should provide details in the description of the approach chosen, including all key hypotheses and the reasons behind them, the selected methods and the reasons for their selection, as well as compliance with any relevant international and/or national standards.

At minimum, the report should include

- an introduction explaining the context and the asset at stake;
- the process followed;
- the method(s) used;
- the origin of all data used;
- all relevant assumptions; and
- the limitations implied by the usage of methods and assumptions.

It should also present the valuer and other authors of the work.

In some cases, such as IP valuations carried out for decision-making purposes, it may be acceptable to use some shortcuts. For example, the general practice regarding royalty rates by industry segments is part of publications. Utilizing such proxies can be acceptable instead of a full royalty benchmark exercise. Other market-related inputs such as typical growth rates can sometimes be applied in a similar way. However, the valuer needs to provide a rationale and challenge these assumptions as appropriate. Also, the valuation report must explicitly address them and the reasons for the choices made.

Set out below is the checklist for minimum content suggested to include in the IP valuation report. Some local standards require a different order of presentation; however, the main contents are similar to the table below.

The checklist

| | |
|---|--|
| ✓ | Contents |
| | <p>Introduction</p> <p>This section should describe the valuation context and purpose, as well as the commercial relationship between the valuer and the client. Ideally, it refers to the identification of the client, the intended users of the report (and, potentially, limitations on use of report), the subject asset being valued, and the unit of valuation – stand-alone asset (bundle of assets / in combination with other assets).</p> |
| | <p>Process followed</p> <p>This section should explain the process followed, for example as given under section 5 “Valuation Process” above.</p> |
| | <p>Valuation method(s)</p> <p>Determining the appropriate valuation method for the asset(s) at stake should follow an in-depth analysis, and the report should explain the methods that were chosen by the valuer.</p> |
| | <p>Origin of data</p> <p>The sources of data used for the valuation (from market and costs data or projections to model parameters) should be clearly referenced. Simply accepting the data provided by the client without challenge and with no evidence of the origin of data is not sufficient. At the very least, such information should be discussed and cross-checked where possible.</p> |
| | <p>Assumptions and limitations</p> <p>The report must explain all key assumptions made, and their origin. Generally, this refers to section 4 (“Standards and Values”) above. Sometimes expert points of view can be used when no realistic sources for certain assumptions exist or have been found (such as growth rates or risk premiums for discount rates). However, in general, preference should be given to objectively reconcilable assumptions.</p> |
| | <p>Presentation of the valuer(s)</p> <p>The credentials of the valuer(s) are an important feature for the credibility of the valuation reflecting the valuers’ opinion.</p> |
| | Appendices and exhibits |

| | |
|--|--|
| | <p>This section of the report contains all important details of the methods used and assumptions made as well as additional details of the calculations. The purpose is to provide transparency and further detail allowing the reader to gain deeper insights into how the valuer's results have been obtained.</p> |
|--|--|

IP valuation report content template ([download](#))

Below is the minimum content suggested to include in the IP valuation report.

1. Introduction
 - Description of valuation request.
 - Deliverables of client and valuer.
2. Process followed
 - Project steps and timeline, responsibilities of each party, project management.
 - Standard(s) used and reason (Some countries have their own standard(s) to comply with.)
3. Valuation method(s)
 - Rationale for method(s) used and rejected.
 - Description of method(s).
4. Origin of data
 - Data provided by client.
 - Data from valuer searches.
5. Assumptions and limitations
 - Date of valuation.
 - Description of all key parameters used in model.
 - Description of uncertainties on and possible variations of parameters.
 - Description of model(s) and calculations.
 - Assessment of limitations.
6. Presentation of the valuer
 - Short bio(s).
 - Credentials and references.

Appendices and exhibits

13. Country specifics

13.1 Indonesia

- **Indonesian Appraisal Standards (SPI)** (Indonesian Appraisal Professional Society (MAPPI)) (Only in printed format. It can be purchased at the association website www.mappi.or.id); and
- **[Guidelines For Intangible Asset Valuation and Valuation Report Presentation for the Capital Market](#)** (Indonesian Financial Services Authority (OJK)).

13.2 Malaysia

As for Malaysia, in addition to the international standards and guidelines recommended, the following guidelines can be used by IP valuers:

- **MyIPO IP Valuation Model** (2013, Intellectual Property Corporation of Malaysia (MyIPO)) (Only available in printed format); and
- **[Intangible Asset Valuation Guidance Notes Edition](#)** (2017, Royal Institution of Surveyors Malaysia (RISM)) (Only available in printed format).

13.3 Philippines

- **[Administrative Order for Providing the Framework and Support System for the Ownership, Management, Use and Commercialization of Intellectual Property Generated from Research and Development Funded by Government and for Other Purposes](#)** (the Department of Science and Technology (DOST), the Department of Trade and Industry (DTI), and the Intellectual Property Office of the Philippines (IPOPHL))
It provides for the details that an IP valuation report must contain; defines the difference between value and price; and sets out the generally accepted methods of IP valuation, which are the cost, income and market approaches.
- **[IP Valuation Manual](#)** (2020, The Technology Application and Promotion Institute (DOST-TAPI))
The Manual is used as reference document by government grant-funding agencies and research and developments institutions.
- **[Philippine Valuation Standard](#)** (second edition, 2018, Department of Finance (DOF))

It adopts the IVSC Valuation Standards in a Philippines setting. It is implemented by all local government assessors and other DOF agencies undertaking property valuation.

- [Personal Property Security Act \(2018\)](#)

Republic Act No. 11057, or the Personal Property Security Act (PPSA), was signed into law with the aim of promoting economic activity by increasing access to least-cost credit – particularly for micro, small, and medium enterprises (MSMEs) – via the establishment of a unified and modern legal framework for securing obligations with personal property, including IP. It also mandates the establishment of an electronic registry with the Land Registration Authority that will contain information on personal properties that are registered as collateral. The registry will be available to banks and could help hasten the loan-application process. Nontraditional collateral such as intellectual property, inventories, crops and livestock, accounts receivable, and machinery are accepted as collateral. This program would certainly require valuation of IP and other intangible assets.

13.4 Singapore

Standards and values:

- Section 19B of [Income Tax Act for Singapore](#)
- Open market price, which is defined as “arm’s length price at which an asset would change hands, on the date of valuation, between a willing buyer and willing seller.”

Valuation process:

- In accordance with practice note PN-001 issued by the Institute of Valuers and Appraisers Singapore (“IVAS”), consideration is given to credibility and reliability of information. Significant input provided are considered, investigated and corroborated. In cases where credibility or reliability cannot be supported, consideration is given to whether or how such information is used.

Valuation report (Reference: Practice note PN-001, issued by IVAS)

- Introduction
 - Purpose of valuation.
 - Intended use and users.
 - Disclaimers and restrictions on use, distribution or publication of report.
 - Valuation date and currency.
 - Subject asset & type of IA/IP being valued.
 - Basis of value.
 - Background of company's business and value drivers.
 - Terms of engagement (sometimes).
 - If a valuation is not conducted in accordance with the requirements of IVS, valuation report to disclose that it is out-of-scope.
- Process followed
 - Extent of work performed.
 - Project steps and timeline, and project management is generally not included as it is not required by IVS or the practice note.
- Origin of data
 - Nature and source of information relied upon, considering the credibility and reliability of information provided.
 - Extent of verification undertaken.
- Valuation method(s)
 - Typically, only the approach/method selected is justified, without justification of the methods rejected, as there is no requirement in the IVS or the practice note to justify these latter.
- Assumptions and limitations
 - Significant and special assumptions.
 - Limitations on inspection, inquiry and/or analysis in the valuation assignment.
 - Description of material risks and uncertainties.
- Valuation conclusion and reasons for the conclusion reached. The analysis and reconciliation of differing values from different approaches is also described in the report.
- Presentation of the valuer
 - Valuation report will include a statement that the valuer is in a position to provide an objective and unbiased valuation and has the requisite knowledge and experience to undertake the valuation.
 - If the valuer seeks assistance from others in any aspect of the assignment, the nature of assistance and extent of reliance is made clear.
 - The valuation report is typically signed off by the valuer in his/her name. If signed off in the firm's name, the valuation report includes the name of the valuer.

13.5 Thailand

The IP Valuation Standard and Guidelines for Thai practitioners are as follows:

- [Intellectual Property Valuation Study Report \(Department of Intellectual Property\)](#) (DIP), 2017); and
- [Intellectual Property Manual](#) (Department of Intellectual Property (DIP), 2017).

13.6 Viet Nam

- [Valuation Standard No. 13](#) (The Ministry of Finance)

The valuation of intangible assets is governed by Valuation Standard No. 13.

- [Circular 39/2014/TTLT-BKH-CN-BTC \(Vietnamese version\)](#) (The Ministry of Finance and the Ministry of Science and Technology)

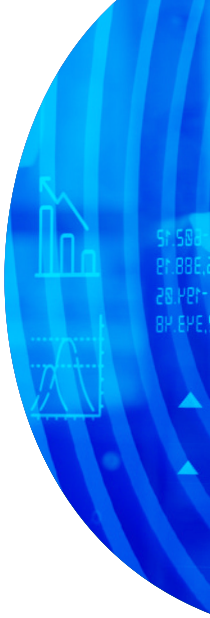
This refers to the valuation of scientific research and technological development results and IP using the state budget.

Glossary

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| Accounting | The process of documenting and consolidating business and financial transactions, as well as examining, confirming and communicating the outcomes. |
| Accounts receivable | The amount a company is expecting to recoup for goods or services already rendered. |
| Acid test | The acid-test ratio, or quick ratio, assesses a company's liquidity by gauging the adequacy of its short-term assets to meet its current liabilities, essentially indicating the company's ability to fulfill immediate financial obligations. |
| Amortization | The process of spreading the total cost to smaller amounts across a time period. |
| Base case | The baseline scenario represents the anticipated outcome of the model, based on the assumptions deemed most likely. Financial outcomes in the base case are more favorable than in conservative scenarios but less favorable than in optimistic scenarios. |
| Bases of value | Also known as standard of value, it sets out the fundamental premises in a valuation process, outlining the core assumptions |
| Citations analysis | Citation analysis is characterized as the assessment and interpretation of the received citations. |
| Collateral | A valuable asset, or group of assets, that a borrower offers and a lender accepts as security for a loan. The value of the secured loan will be directly related to the value of the collateral. In the event of a loan default, the lender can seize the collateral and use it to offset any losses. |
| Commercialization | The process of making a product or service accessible for purchase. |
| Competition analysis | The act of scrutinizing comparable brands or products within the industry to acquire insights into their product offerings, branding strategies, sales tactics and marketing schemes. |
| Complementary assets | Assets that add value and support the business' core assets. |
| Constringent | A potential obligation or prospective loss that could materialize in the future, contingent upon the result of a particular event. |
| Corporate finance | An area involving the financial framework of a company, encompassing its funding and managerial strategies aimed to enhance a company's value. It also encompasses tools, analysis and methodologies on allocation of financial resources. |
| Depreciation | A term describing the reduction in the value of an asset over time, typically (in the case of physical assets) due to "wear and tear". |
| Discount rate | The rate of return employed to discount future cash flows, bringing them back to their present value. |

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| Financial statements | Records that communicate the financial health and standing of a company. |
| Freedom to operate | The capability to utilize or market a product or process without violating the legitimate IP rights of another party, typically pertaining to patents. |
| Intangible assets | Assets that, while lacking physical characteristics, are anticipated to yield economic benefits for the company in the future. |
| Due diligence | A common term to describe the process of confirming facts or details prior to entering into a binding agreement. It usually involves some form of structured investigation or audit. |
| Liability | A current commitment of a company which is expected to result to an external flow resource in the future. |
| Licensing | A contract in which a licensor rents the rights to a legally protected IP to be used in the delivery of a product or service. |
| Liquidity | The ease with which assets can be easily converted into cash – a signifier of a company’s ability to meet immediate liabilities. |
| Monte Carlo simulation | Employing iterative random sampling, it is a computational algorithm used to determine the probability of various outcomes occurring within a range of probabilities. |
| Organizational capital | Information embedded in organizational philosophy and operations such as processes and databases, documented in files and manuals. |
| Profitability | The extent through which value is created; it is represented as the difference from the revenue secured and costs accrued. |
| Proprietary technology | Any innovation, system, or particular tool that is solely owned by an organization. |
| Relational capital | Connections with both internal and external stakeholders of the company, which encompass interactions with customers and is expected to contribute to the generation of income. |
| Remuneration system | The framework or procedure in which individuals receive compensation or payment for their services, work, or contributions within an organization. |
| Residual profit | Profit accrued after deducting all expenses, including taxes, from the total revenue. |
| Return on capital | A financial metric that assesses the profitability of capital investments, calculated as the ratio of net profit to the capital employed. |
| Right of disposal | The authority or legal right to have control and manage an asset. |
| Risk | The probability and extent of divergence from expected outcomes |
| Risk analysis | The process of analyzing and assessing probable risks and potential risks, and of understanding their likely impact on the completion of target results. |
| Risk premiums | Amount paid in exchange for internalizing a certain form and amount of risks. The riskier the transaction, the higher the risk premium. |
| Royalty | Compensation paid in exchange for the use of the IP, outlined specifically in a contract at an agreed amount. |

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| Royalty rate | The proportion of profit attributed to royalty payments for the use of IP. |
| Royalty-relief method | Valuation methodology approximating the value of IP using simulated and hypothetical royalty payments from probable and likely licensing arrangements. |
| Sensitivity analysis | A process of examining the volatility of results to changes in variables or assumptions, often used to indicate the strength of the model to fully capture the scenario. |
| Supply chain | Processes involved in the complete delivery of products from raw inputs to the end consumer. |
| Synergistic value | Added value rooted from the convergence or combination of entities, exceeding even the total of their individual worth. |
| Technical application field | Specific industry where the utilization of a product or technology is envisioned. |
| Technical substitution | Presence of another technology or component which can fulfill or even surpass the performance of what is currently utilized. |
| Technology lifecycle | Stages of development that a technology goes through over time. (Understanding this is critical in IP valuation.) |
| Transfer pricing | Movement of attribution of costs and pricing of goods, services, or IP among different entities or geographical location within the same organization, often used as a method of tax avoidance. |
| Useful life assessment | Approximating the expected timeline that an asset will be economically viable. |



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