

MODULE

11

IP Valuation

MODULE 11. IP Valuation

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LEARNING OBJECTIVES

1. You will understand what is meant by assets, IP assets, value and IP valuation.
2. You will learn the reasons or the circumstances that call for the conducting of an IP valuation.
3. You will understand the essence of and the differences between the three commonly used valuation methods such as cost, market and income methods, including the real option method.
4. You will go through each step of the discounted cash flow method (DCF).

LEARNING POINT 1: What is IP Valuation

1. Definition of an asset

An asset is a resource that is controlled by an entity (such as a company or a business) as a result of past events (for example, purchase or self-creation) and from which future economic benefits (inflows of cash or other assets; or reduction in costs) are expected.

Basically, the wealth of a business comprises of the following types of assets

Wealth = Working Capital + Fixed Asset + Intangible Assets

Working Capital : Working capital refers to the excess of current assets (cash, short-term investments, accounts receivable, inventories, prepaid expenses, etc.) over its current liabilities (trade accounts payable, current portion of long-term debt, income taxes, withholding taxes, accrued liabilities, etc.). It is also known as net current assets.

Fixed Asset : Fixed assets which include plant, machinery and equipment, land and buildings, office furniture and equipment, computers, vehicles and other tangible property used by a business but not converted into cash in day-to-day business. Traditionally, fixed assets were considered to be the brick and mortar of a business and were seen as the main contributors to its wealth/value.

Intangible Assets : Intangible assets are the non-physical property of a business. Traditionally, they were considered to be the 'Goodwill' of a business, that is, the amount paid for a business in excess of the fair value of its identifiable net assets. A wide range of intangible assets, such as customer's loyalty, well respected business name/strong reputation, calibre and morale of employees, IP assets, etc, were clubbed under 'Goodwill.'

Intellectual property (IP) assets?

IP assets are a sub-set of intangible assets and distinguished from other intangible assets by the fact that these are created by law. As such, IP assets are legally protected and can be legally enforced. These can be independently identified, are transferable and have an economic life (in contrast to their legal life, which is generally longer than their economic life).

IP assets include patents, industrial designs, trademarks, copyright and trade secrets.

Legal perspective: An IP asset can be defined in terms of particular qualitative characteristics or standards (such as that of novelty, originality).

Economic perspective: An IP asset can be defined in terms of the economic benefit linked to the IP asset.

For example, a patent that has not contributed to the production or protection of income, has no economic value, even though it has legal existence.

2. Value of an asset

The value of an asset is **the value of the future economic benefits** it brings. The value of an asset, whether tangible or intangible, can be estimated. Some assets are easier to value than others, and some valuations are more precise than others. Monetary or financial valuation is the process of determining or measuring reliably the value or worth of an asset in certain circumstances, the cost or price of an asset may be a good indicator of its value.

(1) Value of an IP asset?

The value of an IP asset derives, in essence, from **its ability to exclude competitors from a particular market**. Whilst the legal right grants exclusivity or the right to exclude, the economic right is based on exclusivity of use, that is, the ability to control the use of the IP asset.

For an IP asset to have a quantifiable value, it should:

- generate measurable amount of economic benefit to its owner/user.
- enhance the value of other assets with which it is associated.

(2) How to derive value from an IP asset

- a. Direct exploitation of the IP
- b. Through sale or licensing of the IP
- c. Even by not exploiting an IP asset (i.e., by merely owning it), it may be possible to add value, for example, by:
 - minimizing the negotiating power of customers,
 - offsetting supplier power,
 - mitigating rivalry,
 - raising barriers to entry by competitors,
 - reducing the threat of substitutes.

Learn More: Price and Value

Price

The price of an IP asset represents the amount of money for which the ownership of that IP asset would be exchanged between a willing buyer and a willing seller.

Price is the monetary amount at which an asset trades in the market.

It is typically defined as what a buyer is willing to pay, in an arm's-length transaction, based on his perceived value of the asset.

The determination of price may be influenced by many factors, which include time, demand, reasons for selling, synergies for buyer, negotiation skills of the parties involved, etc.

Value

The value of an IP asset represents the potential future economic benefits to the IP owner or authorized user.

For example, for a purchased patent, presumably, the benefits (value) to the buyer exceed not only the price paid but also many other costs that may be incurred by the buyer in the process of buying (such as time costs and transaction costs) or in exercising the option of buying the patent (such as opportunity costs : not being able to do or buy something else if the patent is purchased).

3. Definition of IP valuation

IP valuation is a process to determine the monetary value of subject IP.

(1) Prerequisites for Undertaking IP Valuation

To be able to do the valuation of an IP asset, it must be separately identifiable.

- a. The IP asset must be subject to specific identification and a recognizable description.
- b. There should be some tangible evidence or manifestation of the existence of the IP asset (e.g., a contract, a license, a registration document, a computer diskette, a set of procedural documentation, a listing of customers, recorded on a set of financial statements, etc.)
- c. It should have been created or have come into existence at an identifiable time (or time period) or as the result of an identifiable event.
- d. It should be capable of being legally enforced and legally transferred.
- e. It should be capable of having its income stream separately identifiable and isolated from the contribution of other assets employed in the business.
- f. It should be capable of being sold, without selling the other business assets of the enterprise to the same buyer.
- g. It should be subject to being destroyed or to a termination of existence at an identifiable time (or time period) or as the result of an identifiable event.

(2) Factors influencing IP Valuation

- a. Premise of value : The value of an IP asset would depend on the context or circumstances in which it is being valued.
For example, is it being valued in the context of a 'going concern' where it is 'alive and well' and performing its job, or is it being valued in a context of a going concern but where it is not being used? Similarly, in the case of liquidation, is it a forced liquidation or an orderly disposition of assets? The value will be different in each of these four situations.
- b. Standard of value: Learn More
- c. Reasons for, or purpose of, the valuation
- d. Time or date of valuation
- e. Access to and reliability of relevant data and information
- f. Valuation method(s) applied and assumptions made while applying a

particular valuation method

- g. Legal, tax, financial, or other business circumstances
- h. Nature, scope and strength/validity of the underlying IP asset
- i. infringement or freedom to operate issues

Learn More: Standard of value

Understanding the concepts of fair market value and fair value, the most commonly used standards of value, is important when undertaking an IP valuation exercise.

Fair market value (Market value)

Fair market value can be defined as the price at which an asset or service passes from a willing seller to a willing buyer.

- Premise of value : Exchange

It is assumed that both buyer and seller are rational and have a reasonable knowledge of relevant facts.

Fair value (Fair price)

Fair value is seen as appropriate for use in post transaction purchase price allocation.

- Premise of value : Use

Fair value is based on the assumptions that market participants would use when pricing the asset.

Whereas fair market value is seems to be more appropriate when used in the premise of value in exchange, fair value is often based on premise of value in-use. In common situation, IP valuation is a process to value the fair market value of an IP asset.

4. IP valuation triggers

There are numerous individual reasons or motivations for conducting an IP valuation. The valuation triggers refers to the reason or purpose of the valuation.

These include the following:

Classification	Valuation trigger
Transaction	Licensing of IP assets; franchising
	Sale or purchase of IP assets
	M&A; divestures, spin-offs
	Joint venture or strategic alliance
	Donation of IP assets
Enforcement of IP rights	Calculation of damages when IP right is infringed
Internal use	Investment in R&D
	Internal management of IP assets
	Strategic financing and/or raising equity/capital
	Investor relations
Other purposes	Financial reporting
	Bankruptcy/liquidation
	Optimizing taxation
	Insurance of IP assets

More References 1-1: IP Valuation Trigger

1. Transaction

1) Licensing of IP assets; franchising

Before conducting negotiations for licensing-in or licensing-out of IP, a thorough understanding of the value of the IP assets ensures more informed negotiation and decision-making concerning the terms and conditions of the proposed license, especially in determining fair and robust royalty rates for optimal exploitation of the IP asset. In franchising too, both the franchisor and the franchisee require a thorough understanding of the value of the IP assets, notably trademark(s) and trade secrets or know how.

2) Sale or purchase of IP assets

Before selling or buying IP assets, proprietary technology or a company, one needs to know the value of the relevant IP assets to decide whether to proceed with the sale or purchase and, if so, at what price.

3) Merger & Acquisition (M & A); divestures, spin-offs

Often, the primary reason for considering an M & A transaction is the value of the IP assets of the target company. In such a case, one should consider whether the stand-alone purchase or licensing-in of the relevant IP assets would suffice. If not, then only one should proceed to consider an M & A transaction. In both cases, IP valuation is crucial to making an informed decision. Valuation of the IP assets of the target company often identifies additional value that significantly enhances the final sale or purchase price. Doing so also ensures that deals are priced and structured by keeping IP risks and value realization opportunities in mind. Further, IP valuation enables the parties to take an informed decision on the acceptable cost of capital or deciding on financial leverage strategy to be followed. Understanding fully the strategic fit and value extraction opportunities of the target's core and non-core IP assets facilitates post-deal IP integration and maximization of the returns from the acquisition. It also influences positively the resulting company's value and share price.

4) Joint Venture or Strategic Alliance

Before contemplating entering into a joint venture or other types of strategic alliances one should make a comparative analysis of the value of IP assets involved in the various options under consideration. In structuring a joint venture deal, the parties involved should understand as to how much value IP assets contribute to it. The same is true of a strategic alliance, as both parties would be well placed to take advantage of the deal if they are not only aware of the technological contribution of the IP assets but also of their monetary value.

5) Donation of IP Assets

When an enterprise owning IP assets is not using the IP assets in its core business or is not usefully licensing-out, whether the IP assets are core or non-core to its business, it should consider donating such IP assets, as donation of IP assets may attract significant tax benefits in some countries. For calculating the tax benefit, it is important to value such IP assets. Tax authorities would not be interested in understanding how the value of any donated IP asset was calculated but may also prescribe rules as to how the value of an IP asset should be calculated.

2. Enforcement of IP rights; Calculation of Damages

Knowledge of the value of an IP asset influences the decision about the strategy to be used when it is infringed. IP valuation enables an entity to decide whether to pursue the infringement through a court action (by filing a suit for infringement), take recourse to alternative dispute resolution mechanisms, such as mediation or arbitration, or consider licensing of the IP asset to the infringer. In the event of a successful infringement prosecution IP valuation plays an important role in calculating damages, whether those

damages are based on an assessment of the infringer's profits or a reasonable royalty.

3. Internal Use

1) Investment in Research and Development (R&D)

While considering whether to invest in R & D, the value of potential IP assets may be a key factor in taking a decision.

2) Internal Management of IP Assets

IP valuation helps in budgeting and resource allocation decisions. For example, if a company is spending a significant amount of money on internal R&D but is losing ground to competitors due to slow or late product introductions, it may need to rethink its R&D strategy and processes. In today's knowledge economy, more companies are turning to an open innovation model of actively buying and licensing innovations from other entities to supplement or even replace internal R&D. During an IP audit, the review of an IP portfolio provides an opportunity to identify IP assets whose value, for example, has become insignificant or markedly decreased. If such IP assets are used only in a non-core business activity or their strategic importance has become insignificant, it may be decided as to whether to continue maintaining such IP assets, license them, sell them or let these IP assets lapse. Thus, an informed decision to discontinue payment of maintenance fees may lead to substantial cost savings. IP valuation also provides strategic guidance for new product development, brand-extensions, line-extensions, managing foreign filing and prosecution costs, etc.

3) Strategic Financing and/or Raising Equity/Capital

Despite challenges in perfecting a security interest in IP assets, some banks are relying on IP assets to secure debt financing. In the past, for monetizing an IP asset, meant taking steps to create a product or secure a royalty stream. With an emerging secondary market for IP assets, new ways to monetize IP assets are being devised. For example, in the recent past, revenue streams linked to a portfolio of copyright or patent assets have provided the basis for creating IP asset backed securities. For such IP asset-backed securitization, the valuation of an entity's IP assets is crucial. As a result, in recent years, IP financing deals have been completed through a number of financial vehicles – securitization, bank debt, hedge funds and private equity.

Venture capitalists are beginning to look at patent strategies and patent portfolios. Usually, they do not engage in quantitative valuation of IP assets or of portfolios of IP assets. Rather venture capitalists prefer to value the company as a whole and consider the role of IP in that process.

Asset-backed securitisation is the process of pooling homogeneous financial

assets and issuing securities backed by the financial assets into the capital markets.

It relies on the structured financing and characteristics of collateral to achieve creditworthiness. Pools of assets are transferred into a special purpose vehicle (SPV). Securities are rated on the strength of the legal structure and level of credit enhancement, based on historical performance.

4) Investor Relation

In the case of a listed company, an IP valuation helps to communicate the value of its IP assets to capital markets, supports its share prices, and helps to obtain funding from investors. Valuation of IP assets is also required for initial public offering (IPO) documents.

4. Other Purposes

1) Financial Reporting

The recognition of the increasing share of IP assets in the total market value of enterprises has contributed to the change in the way the accounting community has begun to treat IP assets in financial reporting. Historically, accounting practice did not recognize the separability of IP assets from other forms of intangible assets and, hence, IP assets were not included in the balance sheets of a company. However, the international accounting standards board (IASB) now recognizes acquired and identifiable intangible assets (i.e., IP assets) and requires all acquired IP assets to be recognised as assets, separately from goodwill, on the balance sheet of the business acquiring the IP assets.

The value of internally generated IP assets continues to be left out of the balance sheets of companies. The reason for excluding internally generated IP assets is that any value reported on the balance sheet has to be objective, reliable, and verifiable/auditable. Any asset whose value is calculated on the basis of predictions of future cash flows and on the basis of estimation of an "appropriate" discount rate is considered to be too subjective for financial reporting purposes.

In many countries, acquired intangible (including IP) assets are amortizable provided their useful life to business, or income generation, is of a limited duration, and provided the useful life can be accurately estimated. IP assets, such as trademarks, with an indefinite useful life must undergo an annual impairment test. When a brand is acquired, IP valuation is done for the initial valuation as well as the periodical impairment tests for the derived values to be included in the balance sheet.

2) Bankruptcy/Liquidation

In a bankruptcy, the IP assets of the bankrupt company have to be valued, as also its physical assets, in determining how those assets are to be

distributed.

3) Optimizing Taxation

In devising ways to optimize the tax to be paid by a company, its assets, including its IP assets, require to be valued. IP assets create numerous opportunities for tax planning in both third party transactions as well as internal strategies such as cross-border transfer pricing and centralizing the ownership of IP assets in IP holding companies.

The internal revenue service or other tax authorities would like to know as much as possible about the basis for any value determination used when allocating portions of the purchase price associated with the acquisition of a company.

In the past, many companies had allowed their affiliates to use their trademarks for little or no charge, but as the realization has grown of the profit generating powers of trademarks, companies have increasingly taken to charging royalties for their use. This has alerted tax authorities around the world, with many now asking companies to charge their subsidiary operations for the use of their trademarks. Valuation of IP assets helps in assessing fair transfer prices for the use of IP assets, including brands, to subsidiary companies.

4) Insurance of IP assets

A new market is opening up for the insurance of IP assets with a number of major insurers in the developed countries creating products tied to the capital value of IP assets, especially trademarks/brands.

LEARNING POINT 2: IP Valuation methods

1. Cost Method

(1) Main concept

Cost method is based on the intention of establishing the value of an IP asset by calculating the cost of developing a similar (or exact) IP asset either internally or externally.

It seeks to determine the value of an IP asset at a particular point of time by aggregating the direct expenditures and opportunity costs involved in its development and considering obsolescence of an IP asset.

For example, if the IP owner has data pertaining to the cost it incurred for the preceding five years and wants today's value of that IP, the cost incurred in its development, adjusted to inflation, will provide a current value which, in turn, will be further adjusted for obsolescence to arrive at a final opinion of its value.

Obsolescence

Obsolescence includes physical deterioration, and functional, technological and economic obsolescence, however, physical deterioration generally does not apply to IP because IP is intangible. Functional, technological, and economic obsolescence do affect the value of IP.

- Functional obsolescence: It occurs when the IP user must incur excess operational costs to use the IP versus current alternatives, which may be state of the art.
- Technological obsolescence: It occurs when technological forces render the IP worthless. For example, patents for a next generation computer floppy disk drive are likely to be worthless because there are better technological options already on the market.
- Economic obsolescence: It occurs when the use of the IP in its highest and best form cannot provide an adequate return on investment. This can occur in IP easily because IP is generally unique and may have little use outside of a particular function.

The cost method is generally the least used method as, in most cases, it is considered suitable only as a supplement to the income method (if the valuation is not for bookkeeping purposes). The method is normally used in situations where the subject IP is currently not generating any income.

(2) Reproduction cost method vs. Replacement cost method - ①

There are two variants of the cost method: the reproduction cost method and the replacement cost method.

Reproduction cost method	Replacement cost method
<p>Reproduction cost contemplates the construction of an exact replica of the subject IP.</p> <ul style="list-style-type: none"> - It is the total cost, at current prices, to develop an exact duplicate or replica of the subject IP. - This duplicate asset would be created using the same or similar materials, standards, design, layout, and quality used to create the original IP asset. - The reproduction cost method does not account for changes in technology, higher utility from other materials, and other factors. 	<p>Replacement cost contemplates the cost to recreate the functionality or utility of the subject IP, but in a form or appearance that may be quite different from the subject IP.</p> <ul style="list-style-type: none"> - It is the total cost, at current prices, to create an asset having equal functionality or equal utility to the subject IP. - However, the replacement IP may have greater functionality and/or utility than the subject IP. - The replacement IP asset would be created with modern methods and developed according to current standards, state-of-the-art design and layout, new technology and the highest possible quality. - If the replacement IP asset is better in some way than the subject IP asset, it may yield more satisfaction than the subject IP asset. This fact must be reckoned with while making an estimate of obsolescence.

An important requirement for both these methods is that the costs be determined as of the valuation date (whether that be today's date or another date) and not the historical expenditures that actually took place.

For example, many factors relevant to the asset's development may have once been proprietary, but are now in the public domain, and could therefore be acquired at a much lower cost than was actually included initially. Also, research methods may have improved in the interim, to the point where only half of the historical research time is needed to accomplish the same achievements, and this also would affect the value of the asset.

(2) Reproduction cost method vs. Replacement cost method - ②

a. The cost method could be summarized as follows:

First, calculate the replacement cost through the formula:

$$\frac{\text{Reproduction Cost} - \text{Curable functional and technological obsolescence}}{\text{Replacement cost}}$$

An IP's deficiencies are considered curable when the prospective economic benefit of enhancing, or modifying the IP, exceeds the current cost of the material, labor and time needed to change it.

Next, use the replacement cost to estimate the IP's value.

$$\frac{\text{Replacement Cost} - \text{Economic obsolescence} - \text{Incurable functional and technological obsolescence}}{\text{Value}}$$

An IP's deficiencies are considered incurable when the current costs of enhancing or modifying the asset (in terms of materials, labor and time) exceed the expected future economic benefits of improving it.

b. Situations where the reproduction cost method is used include:

- litigation purposes
- measuring return on investment (ROI)
- tax reporting purposes (for embedded computer software)

c. Situations where the replacement cost method is used include:

- estimating a target price prior to negotiations for purchasing an IP asset
- calculating a basis for suitable royalty rates
- determining a transfer price.
- establishment of a consumer brand from 20 years ago in today's market, which contains many new
- direct-to-consumer options such as the Internet and Podcasting.

The decision on which variant should be used will be determined by (1) the

type of IP asset to be valued, (2) the date on which the valuation is to take place, and (3) the context in which the valuation is made.

(3) Advantages and Disadvantages of cost method

Advantages	Disadvantages
<p>Cost method is a useful method when:</p> <ul style="list-style-type: none"> - Subject IP assets can be easily reproduced, for example, software - the income stream or other economic benefits associated with the asset being valued cannot be reasonably and/or accurately quantified - there is no economic activity to review, such as early-stage technology that is not yet producing revenue - there is no direct cash flow being generated from use of the subject IP assets - the IP forms part of a larger group of assets when other valuation methods are not appropriate; - calculating a floor or minimum value/price for an IP asset however, the floor so calculated may be inaccurate when the cost includes elements that do not add value to the IP asset - establishing a maximum price for buying an IP asset when many candidates for substitution are available. 	<ul style="list-style-type: none"> - Cost method does not account for wasted costs- often vast amounts sums spent on pharmaceutical research projects result in no benefit. - It does not consider the unique and novel characteristics of IP. Therefore, it usually does not incorporate the expected economic benefits or the income generating potential of the IP asset. - It does not take into account the factors of risk and uncertainty associated with realizing the economic benefits associated with the IP asset. - It does not directly incorporate the trend in benefits associated with the IP. An IP asset that provides economic benefits with an increasing growth rate can be far more valuable than which displays a downward trend. - The duration over which the economic benefits will be enjoyed is yet another element not considered in this method, as the Remaining Economic or Useful Life (RUL) of the IP is a vital component in valuation. - It may not provide an indication of

	<p>the "highest price obtainable" in the open market, in the context of the "fair market value" standard.</p> <ul style="list-style-type: none">- This is because potential purchasers, may be willing to pay a premium over the cost they would incur in attempting to replicate the property, to become the proprietor of a novel product on a timely basis.
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2. Market Methods

(1) Main concept

The market method is based on comparison with the actual price paid for a similar IP asset under comparable circumstances.

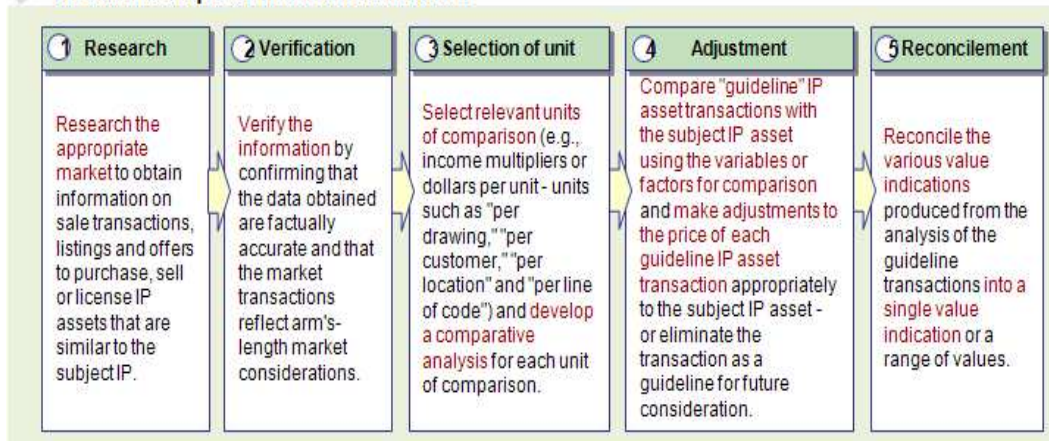
To do a valuation with this method, one needs to have:

- An active market (price information, arm's length)
- An exchange of an identical IP asset, or a group of comparable or similar IP assets
- If the IP assets are not perfectly comparable, variables to control for the differences

The more information available on the nature and extent of rights transferred, including the detailed terms and conditions, the circumstances of the transaction (e.g., cross-licence, licence agreed in settlement of litigation), the more accurate the valuation will be.

This method is much more likely to reflect market perceptions and moods than a valuation based on the income method.

The basic steps of the market method



Learn more: Analysis of comparability: Type of variables or factors to be considered

- Timing
- Nature of IP asset (e. g., patent. or trademark)
- Scope and status of legal protection
- Strength of the IP rights; uncertainty re validity of IP rights
- Duration
- Exclusivity
- Territory
- Geographical coverage of the IP asset
- Extent to which the IP asset contributes to market demand for the final product
- Availability of substitutes
- Licensor's anticipated profitability from use of the IP
- State of development of the IP asset
- Circumstances in which a previous licence was agreed can be significant
- Product of willing negotiations or a court-imposed solution
- Cross-licensing
- Profitability
- Risks
- Industry
- Market size and characteristics
- Growth outlook for relevant products
- Channels of distribution
- Other barriers to entry and exit
- Company structure
- Management matters (transparency; bounded rationality)

Sources of Comparables and "Industry Standard" Data

Statutory/Official filings (SEC filings)
Surveys
Licensing publications, valuation books
Published court cases
Shopped term sheets
Published agreements
Proprietary databases (Royalty Source, ReCap)
Consultants

(2) Advantages and Disadvantages of market method

Advantages	Disadvantages
<ul style="list-style-type: none">- Simplicity- Use of market based information- Can be very useful if exact comparables are available (e.g., license agreements related to the same technology)- Often used to establish "ballpark" values, especially for royalty rates- Favored by tax authorities for deals with affiliates- Best for deriving inputs for the Income method	<ul style="list-style-type: none">- By definition, an IP asset is unique. It is not possible to find an exactly alike or even a similar or comparable IP asset. Even if that were possible, it is generally not possible to have readily available information, which could be used for valuing the subject IP asset.- Market method ends up comparing the general information available in the market; it is unable to consider specific factors leading to a specific transaction.- The time factor may affect the usefulness of historical databases.- It is a difficult method to use for comparing deals with multiple forms of compensations (e.g., equity, milestone payments, running <div data-bbox="740 1223 1222 1509" style="border: 1px solid black; padding: 5px; margin: 10px 0;"><p>Due to the depth of the required information to ensure comparability, often the only good transactional data is from a transaction where there is complete access to the legal agreement. Generally, however, such IP transactional data is highly confidential.</p></div>

	royalties) <ul style="list-style-type: none"> - Many "hidden" deal factors (e.g., strategic buyer "premiums") cannot be considered. - Outside influences that affect royalty rates of IP assets, (e.g., fame, when celebrities use their images/names as trademarks), cannot be considered.
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3. Income method

(1) Main concept

The income method values the IP asset on the basis of the amount of economic income that the IP asset is expected to generate, adjusted to its present day value. This method is the most commonly used method for IP valuation.

How to determine economic income

- a. Project the revenue flow (or cost savings) generated by the IP asset over the remaining useful life(RUL) of the asset.
- b. Offset those revenues/savings by costs related directly to the IP asset.
Costs: labor, and materials, required capital investment, and any appropriate economic rents or capital charges
- c. Take account of the risk to discount the amount of income to a present day value by using the discount rate or the capitalization rate

Different measures of economic income may be relevant to the various income methods. Some of these measures include the following:

- Gross or net revenues;
- Gross profit;
- Net operating income;
- Pretax income;

- Net income (after tax);
- Operating cash flow;
- Net cash flow;
- Incremental income;
- Cost savings.

Given the different measures of economic income that may be used in the income approach, an essential element in the application of the income method is to ensure that the discount rate or the capitalization rate used is derived on a basis consistent with the measure of economic income used.

(2) Direct capitalization vs. Discounted Cash Flow

The various income methods may be grouped into the following two analytical categories:

Direct capitalization

The valuer estimates the appropriate measure of economic income for one period (i.e., one period future to the valuation date) and divides that measure by an appropriate investment rate of return (Capitalization rate).

The capitalization rate may be derived for a perpetual period of time or a specified finite period of time, depending upon the valuer's expectations of the duration of the economic income stream.

Discounted cash flow (DCF)

(Discounted future economic benefits)

The valuer projects the appropriate measure of economic income (cash flows) for several discrete time periods into the future.

This projection of prospective economic income (cash flows) is converted into a present value by the use of a present value discount rate.

The present value discount rate is the investor's required rate of return over the expected term of the economic income projection period.

(3) Advantages and Disadvantages of income method, especially DCF

Since DCF method is the most frequently used, let's look over the advantages and disadvantages of DCF method as follows:

Advantages

The DCF method is easiest to use for IP assets whose

- cash flows are currently positive, and
- can be estimated with some reliability for future periods, and
- where a proxy for risk that can be used to obtain discount rates is available.

It best captures the value of IP assets that generate relatively stable or predictable cash flows.

It forces you to think about the underlying characteristics of the firm, and understand its business. If nothing else, it brings you face to face with the assumptions you are making when you pay a given price for an asset.

Disadvantages

The DCF method does not explicitly account for the total riskiness of these cash flows but only for the systematic component of that risk in the form of market determined discount rate.

It assumes that the investment in the IP asset is irreversible, irrespective of the circumstances in the future. In brief, the DCF method does not accommodate the option like nature of certain corporate investments and ignores managerial flexibility.

It does not capture the unique independent risks associated with an IP

asset such as patent. All risks are lumped together and are assumed to be appropriately adjusted for in the discount rate and the probability of success, rather than being broken out and dealt with individually (i.e., such as legal risk, technological risk, infringement, etc.)

It fails to consider dependencies on patents owned by others.

LEARNING POINT 3: Preparing for IP valuation

1. IP audit in IP valuation

The valuation process necessitates gathering much information about the IP assets as well as in-depth understanding of economy, industry, and specific business that directly affect the value of the IP.

This information can be obtained by conducting ('even driven') IP audit and background research as well.

Necessary information for IP valuation

a. IP related information

- What IP assets are owned by the business?
- Are IP assets owned by others used (with or without permission) by the business?
- Are the IP assets owned or used by the business, which should or could be registered, duly registered in all the relevant jurisdictions? If not, what steps/measures should be taken to ensure these IP assets are duly protected in all relevant jurisdictions?
- Who owns the existing IP assets: Is it the company or one or more employees, consultants, or its business partners?
- Are there any factors which would affect the value of IP, e.g., is the remaining legal life too short or is there a substitute product or an

alternative patented technology?

- What is the likelihood of a third party claiming ownership of the IP asset of the enterprise?
- Is there Freedom to Operate? That is, are there any existing IP assets owned by a third party that could block the development or effective use of the IP asset of the enterprise?
- For a patent, claim construction is a paramount issue that affects the valuation of IP from three perspectives, i.e., whether
 - : the claims define the subject matter in terms that create commercial value;
 - : the claims are valid and enforceable; and
 - : the owner of the IP should have Freedom to Operate within the scope of the claims.
- Is the strength of the IP asset supported by other IP assets without which it significantly loses its strength, e.g., a patent supported by trademark, patent supported by industrial designs, trade secret supported by a trademark, etc?

b. Market related information

- What is the market strength of the IP asset? An established trademark, for example, would have a higher value than a newly created trademark. If the underlying IP asset is a patent, its remaining economic life and the possibility of it being challenged as infringing other existing patent(s) will influence its value.
- What is the level of competitiveness of the IP asset in the marketplace, i.e., are there other strong trademarks, patent or trade secret-based products which are similar or can be considered as alternative/substitute products?
- Is the strength of the IP asset maintained by aggressive marketing strategies or conventional marketing strategies?
- In most cases, an IP asset that has wider (regional or international) coverage is more valuable than one which is protected in only one country.

Normally, broader geographical scope of protection is viewed as bigger market potential, i.e., potential for market expansion.

- Coverage may also include the number of products that the subject IP asset covers, e.g., whether a trademark covers several products or is used for a single product. For a patent, the coverage consideration would include whether the patent is a basic patent (i.e., used by other patents), a dependent patent (i.e., it is based on another basic patent; in other words, the invention covered by the subject patent is incremental), or an independent patent (i.e., it does not depend on any other existing patent which is in force).
- What is the likely ability of the business to exclude competitors from a certain market?

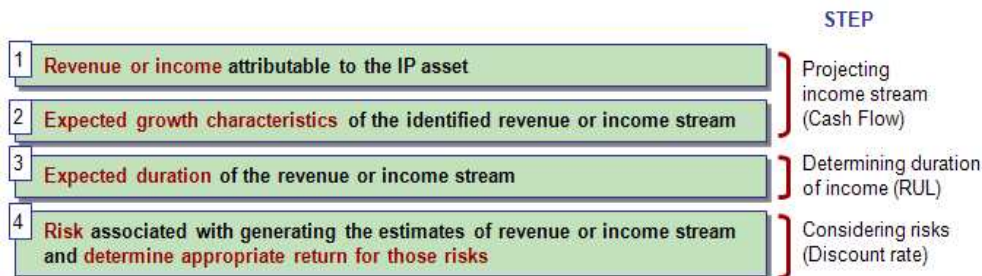
c. Other practical information

- What is the return on investment in the IP? (e.g., brand investment)
- Should co-branding or a brand extension be considered? Would this add value?
- Should the business continue developing a particular piece of technology or not?
- Does the business own core or non-core IP that it could out-license?
- Could the business get more out of its core or non-core IP?
- Are the IP assets adequately insured?

LEARNING POINT 4: How to value IP assets using DCF method: Step by step

1. Main concept

When using the DCF method, particular attention should be paid to the following parameters that impact value:



Necessary information for IP valuation

$$PV = \sum_{t=1}^n CF_t / (1 + r)^t$$

PV = present value
 CF = (expected) cash flow
 t = time representing years of IP asset economic life
 n = time that economic life is expected to end
 r = annual rate of discount (representing the risk factor) or time value of money and assumed

Example

Company X is negotiating to license the use of its trademark whose current market value is estimated to be US \$ 2 million. Company X estimates that the royalty rate would lead to an annual stream of US \$ 10,000 in five years (the economic life of the trademark). The risk-adjusted discount rate has been estimated to be 8%.

Therefore, other things being equal, the net present value of the Trademark will be

$$PV = 10,000/(1+0.08)^1 + 10,000/(1+0.08)^2 + 10,000/(1+0.08)^3 + 10,000/(1+0.08)^4 + 10,000/(1+0.08)^5$$

$$= 9259.26 + 8573.38 + 7938.39 + 7350.23 + 6805.96 = 39,927.22$$

i.e. Company X would expect to receive, at present, least US \$ 39927.22 if it is to license its Trademark for five years.

2. Projecting income stream (Cash Flow)

Project Income stream (Cash Flow : CF in the formula) is a fundamental requirement in DCF and covers the first two parameters, revenue or income attributable to the IP asset and expected growth characteristics of the identified revenue(s) or income stream(s).

First is to create an income statement

Revenue - Cost of goods sold - All appropriate overhead (including Sales, general and administrative cost and R&D cost) - Proper tax payments

= 'Earnings after tax' (EAT) is obtained.

Since income statement does not directly reflect cash generated or consumed, several adjustments to create a proper cash flow statement.

Earning after tax + All depreciation expenses - The increase in working capital

- All the other investment required = Cash flow is obtained.

3. Determining the Remaining Economic or Useful Life (RUL) of the IP asset for estimating the duration of income

The RUL will vary depending on the type of subject IP asset.

An IP asset with a long RUL will be worth more than an IP asset with a shorter RUL.

- Patents lose their useful life 20 years after the filing date-the point at which the legal protection comes to an end. No company would pay royalties in the 21st year, because it can copy the invention that was earlier protected by the patent, that is, copy without any fear of legal retaliation.
- Copyright may have a long useful life well after an author's death.
- A trade secret may have an indefinite useful life if it remains confidential and continues to be of competitive value to its owner.

Many other factors are considered in determining the RUL of an IP asset, including:

- the expected usage of the IP asset by the entity and whether the IP asset could be managed efficiently by another management team;
- typical product life cycles for the IP asset and public information on estimates of useful lives of similar IP assets that are used in a similar way;
- technical, technological, commercial or other types of obsolescence
- the stability of the industry in which the IP asset operates and changes in the market demand for the products or services output from the IP asset;
- expected actions by competitors or potential competitors;

- the level of maintenance expenditure required to obtain the expected future economic benefits from the asset and the entity's ability and intention to reach such a level;
- the period of control over the IP asset and legal or similar limits on the use of the IP asset, such as the expiry dates of related licenses; and
- whether the useful life of the asset is dependent on the useful life of other IP assets of the entity.

Learn more: Residual value

Even after the RUL is over, there may be some terminal or residual value to the IP asset because of market factors.

For example, a bankrupt company's trademark may have value even though the company is no longer in operation.

The residual value of an IP asset with a finite useful life is assumed to be zero unless:

- there is a commitment by a third party to purchase the IP asset at the end of its useful life; or
- there is an active market for the asset and:
 - : residual value can be determined by Reference to that market; and
 - : it is probable that such a market will exist at the end of the asset's useful life.

4. Considering risks (Discount rate)

The discount rate used must take into account all the risks that have an impact on the generation of the future revenue or income stream the higher the risk, the higher the discount rate.

The risks include:

- the overall market risk,
- the specific industry risk, and
- the risks associated with specific IP assets and operations being considered.

Several methods are used to calculate the discount rate.

- 'Capital Asset Pricing Model'(CAPM)
- 'Weighted Average Cost of Capital'(WACC)
- 'Arbitrage Pricing Theory'(APT) model.

QUIZ

Q1. Identify the incorrect statement:

- 1) You can add value to an IP asset even by not exploiting that IP asset
- 2) The value of an IP asset would be different depending on whether it is being valued in the context of a 'going concern', or in the context of a forced liquidation or an orderly disposition of assets
- 3) A valuation is only undertaken in the context of licensing, franchising or sale of an IP asset
- 4) Sometimes, the cost or price of an asset can be a good indicator of its value

Answer: 3)

Valuation is undertaken under a wide variety of different circumstances including licensing, franchising or sale of IP assets but are not confined to those circumstances. Other circumstances include M&A; divestures, spin-offs, joint venture or strategic alliance, donation of IP assets, calculation of damages, investment in R&D etc..

Q2. Identify the incorrect statement:

- 1) Cost method establishes the value of an IP asset by calculating how much was spent in its development
- 2) The Reproduction cost method contemplates the construction of an exact replica of the subject IP.
- 3) The Market method is the best method to use as it is based on comparing other similar transactions, similar to what you would do when buying a car or a house.
- 4) The income method values the IP asset on the basis of the amount of economic income that the IP asset is expected to generate, adjusted to its present day value

Answer : 3)

The market method is of limited use because it is difficult to find similar or comparable IP asset transaction. Even if that were possible, the information pertaining to such a transaction is not readily available, as they are usually

confidential.

Q3. Identify the incorrect statement:

- 1) Obsolescence generally does not apply to IP because IP is intangible
- 2) Projecting the income stream is a fundamental requirement in the Discounted Cash Flow (DCF) method covering income attributable to the IP asset and its expected growth
- 3) Even after the Remaining Useful Life of an IP is over, there may be some terminal or residual value to the IP asset because of market factors.
- 4) The discount rate used must take into account all the risks that have an impact on the generation of the future revenue or income stream; the higher the risk, the higher the discount rate.

Answer: 1)

While IP does not physically deteriorate it can become functionally, technologically or economically obsolete.