

# EXHIBIT O

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# INTELLECTUAL PROPERTY

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VALUATION,  
EXPLOITATION,  
AND  
INFRINGEMENT  
DAMAGES

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Gordon V. Smith

Russell L. Parr

Although most managers would prefer not to admit it, capital recovery rates are sometimes changed to “manage” earnings per share. Therefore it is unlikely that “accounting” depreciation matches the decline in value over time. Even if the original cost starting point was representative of value at some previous moment, depreciated original cost is not likely to equal current value.

Net book value does have relevance to the appraiser in the valuation of utility property under traditional regulation, in that earnings permitted by a regulatory commission are a function of book cost.

Book cost is, except for the regulated environment, useful only as a very rough benchmark suitable for “order of magnitude” comparisons. We occasionally use a permutation of book value as a surrogate for market value, but the caveats above should be borne in mind.

(i) **TAX BASIS.** Tax basis is similar to book value as described above except that the calculation of capital recovery is in accordance with tax requirements. Capital recovery usually is calculated by some form of accelerated method, and the life is the result of some legislation rather than a value based on actual service life.

Tax depreciation methods and lives have been changed so often and so significantly over the years that tax basis is of no use as a measure of any form of value.

## 7.2 VALUATION METHODS

There are three accepted valuation methodologies that utilize the cost, market, and income techniques. One can find other methods named and described in articles and texts, but analysis will reveal that these are really forms of the basic three. In many instances, “new” valuation methods are based on alternative techniques for analyzing or obtaining ingredient inputs to the core methods named above.

(a) **COST APPROACH.** The cost approach seeks to measure the future benefits of ownership by quantifying the amount of money that would be required to replace the future service capability of the subject property. This was defined above as cost of replacement. The assumption underlying this approach is that the price of new property is commensurate with the present economic value of the service that the property can provide during its life. The marketplace is the test of this equation. If, for example, the price of a new machine were set at a level far above the present value of the future economic benefits of owning the machine, then none would be sold. If the opposite were true, then demand would outstrip supply, and presumably the price would rise. The price of a new machine, absent some market aberration, is therefore equal to its market value.

(i) **Depreciation.** One is rarely called upon to render an opinion of value on new property, however, and therefore the use of the cost approach nearly always brings with it the complexity of quantifying the reduction from (new) value due to the action of depreciation. Appraisal depreciation is the result of physical deterioration, functional obsolescence, and economic obsolescence. The proper reflection of all three is essential to estimating market value by the cost approach. These factors are discussed in detail in Chapter 8.

(b) **MARKET APPROACH.** The market approach is the most direct and the most easily understood appraisal technique. It measures the present value of future benefits by obtaining a consensus of what others in the marketplace have judged it to be. There are two primary requisites: an active, public market and an exchange of comparable properties contemporaneous to the valuation date.

In essence, we are seeking a population of transactions from which we can select those that best match the description of the virtual transaction we are constructing.

The residential real estate market is a good example of a market where these conditions are usually present. There is generally some activity in this market in a given area, and selling, asking, and exchange prices are public. Of course not all residential properties are similar, but given enough activity, reasonable comparisons can be made. Where these optimal market conditions do not exist, using this approach involves more judgment, and it may become a less reliable measure of value. As we will discuss in Chapter 9, this technique is not often used for the valuation of intangible assets and intellectual property, largely because of the absence of the conditions noted below.

**(i) Active Market.** The ideal situation is to have a number of property exchanges to use in this analysis. One sale does not make a market. There are, for example, publicly traded common stocks in which only a few shares are traded in a year. Their exchange price has much less validity as a measure of their value than, for instance, that of General Motors stock, in which thousands of shares are traded each day, though all the other requisites except activity are present.

**(ii) Public Market.** To be useful, the exchange consideration must be known or discoverable. The prices of common stock in the primary exchanges are precisely known. For other types of property, it becomes more and more difficult to discover the exchange price. Even with real estate, the published price may be misleading due to financing arrangements between buyer and seller that are not made public. Transactions between businesses, such as the sale of a plant, product line, or subsidiary, may be very difficult or impossible to evaluate because competitive pressure motivates the participants to keep the details confidential.

**(iii) Adjustments for Comparability.** The best of all worlds for a real estate appraiser is to find, for a subject property, an arm's-length sale of an exact replica property, across the street, the day before the appraisal. Unfortunately, this does not happen with enough regularity to eliminate the need to make adjustments when the "comparable sales" are not exactly comparable. Real estate appraisers continually grapple with the problem of quantifying differences in property, so that the location, amenities, zoning, size, shape, and topography of comparable sales can be equated to the subject's and thus provide an indication of value. Analysts using this approach for other types of property have the same challenge, but comparability tends to be more obvious—one either has it or not—and there are fewer nuances.

**(iv) Adjustments for Time.** Sometimes it is necessary to utilize sale information that is not contemporaneous with the appraisal. In this case, the appraiser must adjust for price changes over time. This may necessitate a separate study of changes in property value in the subject area during a recent period of time so as to develop some specialized indices to use in the adjustment process.

**(v) Summary.** With this background, the reader can gain a picture of the strengths and weaknesses of the market approach. Where there is a good base of information about the sales of properties that are similar to the subject, the market approach can be the strongest indicator of value. As the number of comparable sales or the information about them

dwindles, or when the lack of comparability makes adjustment speculative, then this approach ceases to be useful. The market approach is then most effective for:

- Real estate
- Machinery and equipment in general use
- Vehicles
- General-purpose computer software
- Computer hardware
- Liquor licenses
- Franchises

The market approach is very often useful in the valuation of capital stock, other types of securities, or an entire business enterprise.

The market approach is typically least effective for:

- Special-purpose machinery and equipment
- Most intangible assets and intellectual property
- Properties highly restricted by zoning, environmental restrictions, or other forms of regulation

The market approach takes the analyst right to the bottom line of market value. The assumption is that other buyers of comparable property were willing, had knowledge of all relevant facts, and struck a deal that was fair and, therefore, their transactions represented market value at that time and for that property. It is assumed that the market measures and adjusts for all forms of appraisal depreciation: physical, functional, and economic.

(c) **INCOME APPROACH.** The income approach focuses on a consideration of the income-producing capability of the property. This book is about the valuation of business property whose *raison d'être* is to provide a return on and return of the investment required to create it. As when buying common stock, our puzzle is to estimate the price a virtual buyer would be willing to pay for the anticipated returns from the property.

So the underlying theory is that the value of property can be measured by the present value of the net economic benefit (cash receipts less cash outlays) to be received over its life. This concept was nicely described by Campbell and Taylor:

It has often been stated, but bears repeating, that assets (whether bricks and mortar, land, equipment or corporate shares) are only worth in the open market what they can earn, and the true measure of worth is the assets' earnings when related to the risk inherent in the business situation.<sup>5</sup>

(i) **Present Value Concept.** Some background is provided here for the reader who may not be familiar with the concept of the "time value of money"—that a dollar to be received in the future is worth less today than a dollar to be received immediately. To assist to explain this concept, we provide the following example:

Let us make the pleasant assumption that, as a result of some clever basement tinkering, we have designed a putter that unerringly propels a golf ball into the hole. . . . we have carefully guarded our design and have been awarded a patent. Let us further assume that our decision is to

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5. Ian R. Campbell and John D. Taylor, "Valuation of Elusive Intangibles," *Canadian Chartered Accountant* (May 1972), p. 41.

exploit this intellectual property by selling it. We have approached the golf equipment companies, and two of them have made offers. Zing Golf Corporation has offered a cash payment of \$550,000. Cougar Club Company has offered \$300,000 cash and \$300,000 a year from now.

The choice would be clear if the two offers were an immediate payment of cash. The proposed delay in Cougar's second payment complicates the decision. The additional fifty thousand dollars is certainly attractive, but we must consider all the uncertainties surrounding the second offer. Will Cougar Co. still be in business a year from now? Will it have the money to make the payment? What if the putter design does not turn out to be the answer to every duffer's prayer, and Cougar is unhappy with the deal? What if the design turns out to be very expensive to manufacture, and the market won't accept the high price? We must find a way to put the two offers on the same basis so they can be compared.

What is the essential difference between the offers of Cougar and Zing? This example presents the concept of the time value of money as measured by its "present value." The present value of a cash offer is obvious, and the comparison of two different cash offers can be made without difficulty. When we introduce the element of time, the complication begins. What is the present value of \$300,000 to be received in one year? And what do we need to know about the situation in order to calculate it? The first consideration we must address is how confident we feel that the payment will be made, in full and on time. If we feel really confident about the buyer's integrity and ability to pay, our reasoning could be as follows:

1. If I had the \$300,000 today instead of in one year, I could put it in my money market fund and earn 2%. At that rate, the \$300,000 would be worth \$306,055 (compounded monthly). This calculation uses the basic formula that we learned in early mathematics schooling,  $I = Prt$  (Interest equals Principal multiplied by Rate multiplied by Time). To calculate the future amount directly, the formula is transformed to:

$$\text{Amount} = P(1 + rt)$$

2. Looking at the other side of the coin, we ask ourselves, how much would I have to put into my money market fund today in order to have \$300,000 in one year? The answer is \$294,118. This calculation uses another permutation of the basic interest formula:

$$\text{Present Value} = \text{Future Value} / (1 + rt)$$

3. Therefore, the present value of the right to receive 300,000 in one year is \$294,118 at an interest rate of 2%.

If I feel that Cougar Club Company is as financially reliable as the holder of my money market fund, then my analysis is complete. If, on the other hand, I am not so confident about receiving the \$300,000 payment on time (or at all!), I would want a greater return for accepting that additional risk. The interest rate in the calculation is the measure of my perceived risk. The present value of \$300,000 to be received in one year at an interest rate of 15% is \$260,870. At a rate of 25%, it is only \$240,000. A comparison of the prospective sales is shown in Exhibit 7.2.

Armed with this calculation we can see that, depending on the level of confidence we have in Cougar honoring its commitment to pay the remaining \$300,000 in a year, their offer could either be better or worse than that of Zing. What do we require in order to make these calculations? We need to know the amount of the delayed payment, when it is to be made, and how much risk is associated with receiving it.

(ii) **Amount of Income.** In the example above, the amount of the payments to be received is clear (\$300,000 now, \$300,000 in one year). In the real world, the "amount" portion of the equation can be much more obscure, and can comprise payments to be received, as well as expenses to be borne.

ZING'S OFFER		\$550,000		\$550,000		\$ 550,000
COUGAR'S OFFER						
Cash upfront		\$300,000		\$300,000		\$ 300,000
Cash in 1 year	@2%	<u>294,118</u>	@15%	<u>260,870</u>	@25%	<u>240,000</u>
Total		\$594,118		\$560,870		\$ 540,000
Cougar advantage		\$ 44,118		\$ 10,870		\$ (10,000)

EXHIBIT 7.2 PRESENT VALUE COMPARISON

(iii) **When the Income Is to Be Received.** Sometimes the “when” of receipts or obligations is clear (as when they are to be made according to a prearranged schedule), but more often it is dependent on other events. . . . The “when” is a very important element in a present value calculation. The present value of the \$300,000 payment to be received at different times in the future can vary as shown in Exhibit 7.3.

As illustrated in Exhibit 7.3, the relative effect of “when” is also greatly altered by the rate of interest assumed. At high interest rates, the deterioration in value is accelerated as receipt is delayed. The present value concept is applicable to any pattern of cash flow as well. At a rate of 15% compounded monthly, both of the following payment schemes have a present value of \$300,000:

12 monthly payments of \$27,077

\$100,000 in cash plus 12 monthly payments of \$18,052

(iv) **Risk of Achieving the Income.** A difficult ingredient is the quantification of risk, as measured by the rate of interest, or discount rate. We will use the term “discount rate” henceforth, because expressing the receipt of future benefits in current terms is a process of discounting. There are a number of methods used to estimate an appropriate discount rate and many of these are discussed in Appendix A. The essence of these, however, is a consensus of returns required by investors on investments of different types in the marketplace.

As an example, investors in U.S. government securities typically accept rates of return at the lowest end of the range of possible investment returns, currently around 4%. At the other end of the range, investors in the common stock of a start-up, high-technology enterprise may require a rate of return of 30%, 40%, or 50%.

Discount Rate	1 Year	2 Years	5 Years	10 Years
2%	\$294,118	\$288,462	\$272,727	\$250,000
15%	\$260,870	\$230,769	\$171,429	\$120,000
25%	\$240,000	\$200,000	\$133,333	\$85,714

EXHIBIT 7.3 EFFECT OF TIME AND RATE ON PRESENT VALUE

(v) **Discounted Cash Flow Example.** A calculation of the present value of future income is often referred to as a discounted cash flow (DCF) model. That is, one “discounts” the amount of future income to reflect its loss in value due to the delay in receiving it. The classic illustration of this technique is the purchase of a security, such as a share of common stock. Assume the following:

1. Today’s market price of one share of the stock is \$45.00.
2. The company currently pays a quarterly dividend of \$.56 per share.
3. Earnings of the company are currently \$3.75 per share, and are expected to grow at 8% annually.
4. We expect to hold the stock for 3 years.

Under these conditions, we could expect that the dividends paid by the company will grow at 8% per year and, if no market aberrations are expected, the price of the stock will also grow at that rate. If we purchase a share of this stock, the transaction will produce a series of positive and negative cash flows. First, there will be a negative cash flow when we reduce our savings and pay out the \$45.00. Then, there will be a series of positive quarterly cash flows starting at \$.56 and growing. Finally, when we sell the share of stock in 3 years, there will be a positive cash flow of \$56.69 (\$45.00 grown at an 8% annual compound rate for 3 years).

If all this were to go according to plan, what rate of return would we have achieved on this investment? To calculate this, we need to calculate the summation of the present values of the negative and positive cash flows, using different discount rates until they net to zero. Some refer to this as a calculation of the internal rate of return (IRR). This is a trial-and-error process best left to a computer or financial calculator. The result of this is the rate of return we would achieve if we entered into this transaction and if the dividends and future stock price were as expected. In this example, the discount rate is 12.37%. As an investor, we must decide whether that rate of return is appropriate relative to what we perceive as the risk of the investment. If it is, we purchase the stock. If it is higher than we require, we purchase it eagerly. If lower, we wait for the price to come down or look for an alternative investment.

If we apply these principles to the valuation of intangible assets or intellectual property, we can observe that the three essential ingredients of the income approach are:

1. The economic benefit that can be reasonably expected from the exploitation of the property
2. The pattern by which that economic benefit will be received
3. An assumption as to the risk associated with realizing the amount of economic benefit in the expected pattern.

These elements can be related to one another by means of a simple formula,  $V = I/r$ , where:

- $V$  = Present value of the economic benefit attributable to the property
- $I$  = Economic benefit derived from employment of the property, representing the net of cash inflows and outflows
- $r$  = Capitalization rate reflecting all the business, economic, and regulatory conditions affecting the risk associated with employing the property and achieving the prospective earnings



For example, if an income of \$100 will be received in perpetuity, and the appropriate rate of capitalization is 10%, then the value of that income is:

$$\frac{\$100}{.10} = \$1000$$

This is obviously the simplest of examples and one that never occurs in real life. Property ownership is rarely expected to produce income perpetually. Therefore, the calculation is always more complex, and the determination of an appropriate capitalization rate is more complex as well. Because business property is owned for the express purpose of earning a return on investment, the income approach is the strongest indicator of value for this type of property.

A number of methods can assist analysts in estimating the amount of income that can be realized from the ownership of an asset and an appropriate discount rate (risk factor). These are discussed at length in Chapter 10 and in Appendix A. As to the expected duration of income, one may be again relying on a consideration of the three forms of depreciation. That is, the assets that are the source of the income may be subject to a decline in both value and earning power. The income that they are capable of producing may decline proportionately, and this decline would become part of the calculation by the income approach.

The income approach is best suited for the appraisal of the following:

- Contracts
- Licenses and royalty agreements
- Patents, trademarks, and copyrights
- Franchises
- Securities
- Business enterprises

The income approach indicates fair market value directly and without intermediate calculations involving the three forms of appraisal depreciation.

**(d) CORRELATION.** Valuation practice suggests that all three methods be employed when possible and appropriate. At the very least they should each be considered. Circumstances are often such that one or more of the methods is obviously inappropriate and should not be pursued, but it is not unlikely that an appraiser will have to reconcile two or three indications of value. Even more indications of value may be present if multiple assumptions were employed in the use of one method or another. This process is often referred to as "correlation."

In this process, the appraiser considers such factors as:

- The appropriateness of the method used
- The quantity and quality of information available as input to each method
- The extent to which judgment or alternative assumptions were employed
- The sensitivity of the value indication to various inputs and their relative reliability
- Whether the results of a single method should be relied upon or whether some weighting of results is appropriate

### 7.3 SUMMARY

The cost, market, and income approaches are the tools of valuation. Virtually any type of property can be valued using them. In the next chapters we discuss these three methods in more depth and illustrate the analysis tools that are available to develop the inputs that are necessary for their employment. The analyst should consider using all three for every property because a comparison of their values may confirm the conclusions or highlight inconsistencies that should be investigated.

## MARKET APPROACH

The market approach provides an indication of value by observing what others have agreed upon as a fair price in arm's-length, open-market transactions involving property similar to the subject. That is, the virtual transaction is compared with actual transactions judged to be comparable. Like the cost approach, the market approach is based on the principle of substitution that instructs us that a prudent buyer would not pay more for property than it would cost to purchase a comparable substitute. To employ this approach, one looks for transactions that:

- Involve property similar to the subject
- Are part of an active, public market, and for which the price and terms are known
- Are contemporaneous with the virtual transaction
- Are between parties dealing at arm's length

Since one never discovers an actual transaction that perfectly matches the virtual one, a valuer is always faced with decisions concerning the reasonableness of the comparability and whether some adjustment to the elements of the actual transaction are warranted in order to enhance the similarity.

### 9.1 MARKET TRANSACTIONS OF INTELLECTUAL PROPERTY INDICATE VALUE

The exchange of intellectual property in the marketplace typically is completed as part of the exchange of an entire company or division. Rarely do we see a specific patent or trademark exchanged as stand-alone property.<sup>1</sup> Usually the exchange includes the portion of the enterprise with which the intellectual property is associated. The price paid often includes an amount for working capital, fixed assets, the assembled workforce, and various types of intangible assets and intellectual property. Even when specific intellectual properties are exchanged separately, the price is rarely disclosed.

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1. This is even more true for trademarks than for technology. When trademark rights are transferred (assigned), they must be accompanied by "the goodwill of the business." This requirement ensures that the new owner has the capability to produce products or services bearing the mark that are indistinguishable from those of the previous owner, so that consumers will not be deceived or confused. This has been interpreted to mean that the trademark assignment should be accompanied by tangible assets, formulas, customer lists, and whatever other assets are necessary to ensure the new owner's capability. If the mark is separated from its goodwill it can be lost. See 15 U.S.C. § 1060.

through advertising, establishment of customer loyalty, or the development of highly efficient production facilities. Consequently, intellectual property within a market that also presents high entry barriers is possibly more valuable than similar property that operates in a more open industry.

Growth prospects are directly related to value. This relationship exists because a growing income stream is more valuable than a flat or declining income stream. The intellectual property that the income stream flows from is valued according to the growth prospects of the income. Generally, higher growth can be associated with higher value, assuming that investment risks are the same. Comparable market transactions are not useful as value indicators if the properties being compared have decidedly different prospects for future income growth.

Intellectual property values are derived from the legal protection that excludes others from making use of the property. When there is a question about the strength of this protection, the value of intellectual property is weakened. This is especially true for patents. A basic patented technology covering the activities for an entire industry is far more valuable than a patent covering a small aspect of an industry. If a patented technology can be "designed around," the underlying value of the patent is weak. Dramatic assurance of strong legal protection is associated with patents that have withstood the examination of infringement proceedings. Once validity is reaffirmed and acknowledged, usually in the form of a substantial damages award for the plaintiff, the patented technology is highly valuable. Evidence of the reaffirmed value usually can be detected in the number of industry participants lining up to take licenses at royalties that leave little room for negotiation.

Remaining life also must be considered in the valuation of intellectual property and intangible assets. Just like the old house that will require complete refurbishment in a short time, intangible assets having dissimilar years of remaining utility are not good comparisons. Two patents with many similar characteristics of industry application, growth potential, profits, and market share still may not be reasonable comparisons if one has only a few years until expiration.

When there are market transactions of specific intellectual property that has similar characteristics to the property under study, direct application of the market approach is possible. When intellectual property has been exchanged as part of a package of assets (usually as part of a business enterprise), then an allocation of the purchase price among the assets is required, in order to identify the amount that is specifically attributable to the intellectual property.

#### 9.4 ANALYZING THE BUSINESS ENTERPRISE TO INDICATE VALUE

The market approach can indicate the value of intellectual property and intangible assets by determining the value of the entire business enterprise within which the property resides. Once this value is established, allocation of the value among all of the other asset categories leaves a residual amount that often can be ascribed to intellectual property, such as strong trademarks, copyrights, distribution networks, or proprietary technology. The valuation of intellectual property within the framework of a business enterprise is an important and recurring theme in our analysis. Value for intellectual property is dependent on successful commercialization that is embedded in the value of the business enterprise in which it resides.

In Chapter 4 we described the basic elements that constitute a business enterprise as shown on Exhibit 9.1.

# CHAPTER 10

## INCOME APPROACH—QUANTIFYING THE ECONOMIC BENEFIT

### 10.1 MARKET VALUE EQUALS THE PRESENT VALUE OF THE FUTURE ECONOMIC BENEFITS OF OWNERSHIP

From Chapter 7 the reader will recall that the focus of this book is the estimation of market value. Chapters 8 and 9 discussed how to develop indications of market value by the cost and market approaches. **This important chapter presents the income approach to estimating market value, which has been defined as “the present value of the future economic benefits of ownership.”** This definition itself indicates the direction of this discussion. The reader will recall the discussion of investment principles in Chapter 2 and the present value calculations that are the core of that subject. A calculation of the present value of future economic benefits therefore requires us to develop three primary inputs:

- The economic benefit that can reasonably be expected from the exploitation of the property
- The pattern by which that economic benefit will be received
- An assumption as to the risk associated with realizing the estimated amount of economic benefit in the expected pattern.

If we have these three pieces of information, we can calculate present value. If this information comes from an analysis of the real marketplace, that present value equals market value. The arithmetic (calculating present value) is straightforward; the analysis necessary to develop the inputs (amount of benefit, pattern of income, and risk factors) can be extremely complex. The remaining sections of this chapter explore analysis techniques.

### 10.2 QUANTIFYING THE ECONOMIC BENEFIT

Estimating the economic benefits that can flow from the exploitation of intangible assets and/or intellectual property is one of the most difficult challenges in the application of the income approach.

In the discussions that follow, we often use the term “earnings” to represent the quantification of the economic benefit. It is therefore appropriate to preface the examples with our thoughts about the use of earnings as this measurement.

The mere existence of profit is not enough to justify company investments in intellectual property. Before creating, buying, or licensing intellectual property, a company must determine its contribution to the overall earnings of the enterprise in which it will be used. Earnings derived from operations must be of an amount, on a consistent basis, to

## WHEN THEORY MEETS PRACTICE

In Chapters 8 through 12 we presented extensive discussions of the methods available for valuing intangible assets and intellectual property. We discussed the cost, market, and income approaches and the information ingredients required for their application. In this chapter we highlight some of the challenges that arise when these theories are applied in the real world. We examine some of the more difficult problems, point out common valuation errors, and suggest some possible solutions.

### 13.1 VALUATION CHALLENGES

(a) **REFINING THE ALLOCATION OF ECONOMIC CONTRIBUTION.** Allocation of total business enterprise return among the asset groups composing a business ensures that many important factors are addressed as part of the valuation. The allocation process presented earlier in this book ensures that the valuation of a specific intellectual property or intangible asset credits complementary assets for their contribution to enterprise profits. The allocation process also accounts for variations of investment risk among the assets composing an enterprise. The process previously discussed allocates economic contributions to monetary and tangible assets, intangible assets, and intellectual property. When the analysis is conducted for a product line, the economic contribution attributed to the intellectual property of the product line can be associated with the defining characteristic of the product line. In some cases, the defining intellectual property is a patented feature or patented manufacturing process. In other cases, a trademark is the defining feature. What happens when the product line is defined by a combination of different intellectual properties?

Sometimes a product line is defined by both a trademark and a patent. In these cases, the economic contribution attributed to the intellectual property asset category must be subdivided. Suppose, for example, the following economic contribution analysis was accomplished for a new product line of One Product Company, Inc., using the weighted average cost of capital allocation process presented in Chapter 4.

Exhibit 13.1 shows that the intellectual property of Advanced Product Line contributes earnings at 7.5% of sales. Suppose the defining characteristics of the product line are a combination of patented features and a well-regarded trademark. How should the 7.5% of sales be divided between the trademark and the patents?

One solution is to subtract a royalty rate considered appropriate for association with the patents or trademarks. Suppose that similar trademarks are licensed for 3% of sales (recalling our previously mentioned caveats about using industry norms and rules of thumb). Then 4.5% of sales would be attributed to the patents of Advanced Product Line. The problem with this method is that the 3% royalty rate likely does not fully reflect the total economic contribution enjoyed by One Product Company from the trademark.

Product Line Asset Category	Weighted Earnings Contribution	Contribution As % of Revenue
Monetary Assets	\$ 100	0.750%
Tangible Assets	750	5.625%
Intangible Assets	150	1.125%
Intellectual Property	<u>1,000</u>	<u>7.500%</u>
Total Economic Benefit	\$2,000	15.000%

EXHIBIT 13.1 ONE PRODUCT COMPANY, INC.—ADVANCED PRODUCT LINE

Remember, royalty rates represent a splitting of the economic benefits of licensed intellectual property between the licensee and the licensor. The 3% royalty rate is only part of the total economic benefit derived from the trademark, so following this methodology probably overstates the contribution of the patents.

A better way to divide the 7.5% of sales between the trademark and the patents is to find one or more companies similar to the subject business enterprise but lacking either patents or trademarks. Then allocate the total economic benefits for each of the peer group companies among their monetary, tangible, and intangible assets and intellectual property. If the peer group companies possess trademarks but not patents, then the amount of economic benefit allocated to the intellectual property of the peer group companies provides an indication of the trademark contribution. If such an analysis attributes 5% of sales to the trademark intellectual property of the peer group companies, this can serve as a proxy for the trademark economic contribution of Advanced Product Line of One Product Company. The economic contribution from the patents of the product line then would be 2.5% of sales.

This method more fully captures the economic contribution and value of each element of the trademark and patents. It requires that similar companies be identified and that their intellectual property be limited to either patents or trademarks. This method also requires that the limited intellectual property of the peer group be similar to that of the subject company.

**(b) CORRELATING VALUE INDICATIONS.** Only rarely are indications of market value for an intangible asset nearly the same when they are arrived at by application of cost, market, and income approaches. It is equally rare to have the market values of underlying assets fit nicely into the business enterprise value. Therefore, we are nearly always faced with reconciling indications of market value in order to reach a conclusion, and this is why the results of valuation calculations prior to this effort are called “indications” of value. The principles of the real estate appraisal world again apply:

In actual practice, the assembly, analysis, and interpretation of data within the approaches seldom lead to this ideal situation [wherein all indicators yield the same result]. Consequently, a critical step in the appraisal process is a reconciliation of all value indications. This step brings together the facts and fits them into cause-and-effect relationships leading to a final conclusion of the defined value.

Consideration of the relative merit of each value indication involves the appraiser in a review of each approach in respect to:

1. The reliability of data used
2. The applicability of the approach to the type of property being appraised
3. The applicability of the approach in the light of the definition of value sought