

Willamette Management Associates

Insights

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**THOUGHT LEADERSHIP IN PROFESSIONAL PRACTICES AND LICENSES
VALUATION, DAMAGES, AND TRANSFER PRICE ANALYSES**



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Insights

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We welcome reader comments, suggestions, and questions. We welcome reader recommendations with regard to thought leadership topics for future *Insights* issues. In particular, we welcome unsolicited manuscripts from legal counsel, accountants, bankers, and other thought leaders involved in the valuation and forensic services community. Please address your comments or suggestions to the editor.

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THOUGHT LEADERSHIP IN PROFESSIONAL PRACTICES AND LICENSES VALUATION, DAMAGES, AND TRANSFER PRICE ANALYSES

EDITOR FOR THIS ISSUE: SAMUEL S. NICHOLLS

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Forethoughts

This *Insights* issue presents thought leadership discussions with regard to professional practices, professional services companies, and professional practitioners' practice licenses. Specifically, this *Insights* issue presents thought leadership discussions related to the development of valuation analyses, damages analyses, and transfer price analyses with respect to such professional organizations and professional licenses. Such professional practices and professional services entities may be organized as partnerships, limited liability companies, corporations, or other organizational forms. In any event, the thought leadership discussions presented in this *Insights* issue generally apply to professional organizations ranging in size from the smallest proprietorships and partnerships to the largest international professional services firms.

First, this *Insights* issue focuses on valuation, damages, and transfer price analyses related to professional practice intellectual property. Such intellectual property can be owned and operated by the institutional professional services entity—or by the individual practitioner. The next discussion focuses on the identification and valuation of professional licenses and other individual intangible assets. Again, such intangible assets may be owned and operated by the individual practitioner—or they may be a component of the entity

value of the professional practice or professional services company.

Second, this *Insights* issue presents a thought leadership discussion related to a topic that is important to the business valuation of most professional practices and professional practice ownership interests. Most generally accepted professional practice valuation approaches and methods incorporate data that are extracted from capital markets. These capital market data incorporate the liquidity attributes of publicly traded securities. Of course, most professional practices are private, and the related ownership interests are illiquid. This thought leadership discussion focuses on the measurement of an appropriate adjustment (discount) for lack of marketability related to a professional practice valuation.

Finally, this *Insights* issue presents a thought leadership discussion related to a federal income tax issue. This discussion describes the statutory and judicial criteria for claiming a worthless security income tax deduction.

Willamette Management Associates analysts routinely puts these thought leadership principles and concepts into practice. Our analysts regularly develop valuation, damages, and transfer price analyses related to professional practices, professional services companies, and practitioners' professional licenses.

About the Editor

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Sam Nicholls is a vice president in the firm's Atlanta office. Sam's practice includes (1) the valuation of businesses and business ownership interests for taxation, transaction, financial accounting, and litigation purposes and (2) the damages measurement analysis for controversy purposes.

Sam's practice includes the development of valuation, damages, and transfer price analyses. These analyses are developed for numerous client purposes including financial accounting and fair value measurements; transaction pricing and structuring (including fairness, solvency, adequate consideration and other transaction-related financial opinions); taxation planning and compliance (including gift tax, estate tax, income tax, and property tax issues); and litigation

support and dispute resolution (including forensic analyses and testifying expert services related to breach of contract matters, tort claims, taxation disputes, bankruptcy matters, family law matters, and other controversies).

Sam has developed these valuation, damages, and transfer price analyses with regard to industrial and commercial companies, asset and investment holding companies, professional practices, restricted public securities, nonmarketable equity securities and related ownership interests, debt securities, convertible and synthetic securities, options and warrants, intellectual property rights, and general intangible asset ownership interests.

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Thought Leadership Discussion

Professional Practice Intellectual Property Valuation, Damages, and Transfer Price Analyses

Nicholas J. Henriquez and Robert F. Reilly, CPA

Analysts are often asked to estimate the value of, measure the damages to, or determine the appropriate arm's-length transfer price for an intellectual property owned or operated by either a professional practice or a professional services company. Analysts are also asked to develop valuation, damages, or transfer price analyses related to intellectual property owned or operated directly by an individual professional practitioner. This discussion considers the many reasons for conducting such intellectual property economic analyses. This discussion describes the generally accepted intellectual property valuation approaches and methods.

This discussion illustrates the application of several valuation methods through the development of illustrative examples. And, this discussion presents analyst guidance and analyst caveats with regard to the reporting of these professional-practice-related intellectual property economic analyses.

INTRODUCTION

Valuation analysts are often asked to value the intellectual property owned or operated by a professional practice or professional services company. As discussed below, such intellectual property valuations may be developed for accounting, taxation, financing, transaction, litigation, and many other purposes.

Damages analysts are often asked to measure the damages to an intellectual property suffered by a professional practice or professional services company owner/operator. Such damages measurement analyses often relate to tort claims or to claims of breach of contract.

Transfer price analysts are often asked to determine an intercompany transfer price related to the intellectual property owned or licensed by a profes-

sional practice or professional services company. Such transfer price analyses are typically developed for accounting, taxation, or license negotiation purposes.

In this discussion, valuation analysts, damages analysts, and transfer price analysts are collectively referred to as “analysts.”

First, this discussion summarizes the various types of intellectual property that an analyst may encounter with regard to the professional practice, professional services company, or individual practitioner valuation, damages, or transfer price analysis.

While much of this discussion applies to damages measurements and transfer price determinations, the focus of this discussion relates to professional practice and professional services company intellectual property valuation analyses.

Therefore, second, this discussion considers the many general reasons why an analyst may be asked to value the professional practice, the professional services company, or the individual practitioner intellectual property.

While analysts may encounter many categories of reasons to value a professional practice's intellectual property, one frequent reason relates to family law disputes.

Such disputes typically involve the professional practice or professional services company owners. Accordingly, this discussion considers the specific family-law-related reasons why an analyst may be asked to value professional practice intellectual property.

Third, this discussion describes and illustrates the generally accepted intellectual property valuation approaches and methods. Several illustrative examples of simplified intellectual property valuation analyses are presented.

Fourth, this discussion summarizes the typical analysis data sources and analyst due diligence procedures related to the professional practice or professional services company intellectual property valuation.

And, finally, this discussion presents typical analyst caveats and report writing guidelines for intellectual property valuations performed within the context of a professional practice or a professional services company.

TYPES OF PROFESSIONAL PRACTICE INTELLECTUAL PROPERTY

Whether or not the valuation (or damages or transfer price) analysis relates to a professional practice, professional services company, or individual practitioner, there are only four categories of intellectual property. These four categories follow:

- Patents
- Trademarks
- Copyrights
- Trade secrets

These four types of intellectual property are one subset of the general category of property typically called intangible assets or intangible personal property.

The term "intangible assets" is an accounting term. In contrast, the term "intangible personal property" is a legal term. There are subtle differences between these two terms. However, for purposes

of this discussion, we will consider these two terms to be synonyms.

Patents, trademarks, and copyrights are created under and protected by federal statutes. In contrast, trade secrets are created under and protected by state statutes. However, most states have either completely adopted—or adopted the essence of—the Uniform Trade Secret Act within their state statutes.

For purposes of this professional-practice-related discussion, the professional practice may be either the intellectual property owner (and, particularly, the licensor) or the intellectual property nonowner operator (and, therefore, the licensee). Therefore, in this discussion, the professional practice (or the professional services company or the individual practitioner) is sometimes referred to as "the owner/operator."

As will be described further below, the professional practice could either directly or indirectly own or operate the intellectual property.

In the direct case, the professional practice (or professional services company or practitioner) directly owns or licenses the intellectual property. An example would be a practitioner/inventor who owns (and/or licenses) a patent or a practitioner/author who owns (and/or licenses) a copyright.

In the indirect case, the professional practice (or some other type of private professional services company)—and not the individual practitioner—owns and operates (i.e., derives value from) the intellectual property.

For purposes of this professional-practices-related discussion, the above-listed four intellectual property categories may be expanded slightly to include what are often called associated or contributory intangible assets.

The patents category may include patent applications, the technology and designs encompassed in the patent, and the engineering drawings and other technical documentation that accompanies the patent or patent application.

The trademarks category may include trademarks (both registered and unregistered), trade names, service marks, service names, trade dress, product labeling that includes trademarks, institutional advertising (including signage), and promotional materials that include trademarks.

The copyrights category may include both registered and unregistered copyrights on publications, manuscripts, white papers, musical compositions, plays, manuals, films, computer source code, blueprints, technical drawings, and other forms of documentation.

And, the trade secrets category may include any information or procedures that the owner/operator keeps secret and that provide some economic benefit to the owner/operator.

Such trade secrets include computer software source code, employee manuals and procedures, computer system user manuals and procedures, station or employee operating manuals and procedures, chemical formula, food and beverage recipes, product designs, engineering drawings and technical documentation, plant or process schematics, financial statements, employee files and records, customer files and records, vendor files and records, and contracts and agreements.

It is not atypical for a professional practice, company, or practitioner to own or operate two or more related intellectual properties.

For example, the same product can have a utility patent and a design patent. The same product can have a patent and a trademark. The same software can hold a copyright and be a trade secret. The same employee procedures manual can hold a copyright and be a trade secret. The same set of drawings and schematics can be included within a patent, have a copyright, and be a trade secret.

Because the professional practice, company, or practitioner can own two or more related intellectual properties, the analyst may be asked to develop values for each individual intellectual property. That is, the analyst may also be asked to value an individual intellectual property for income tax accounting, property tax accounting, financial accounting, and many other purposes.

In addition, in disputes related to infringement or breach of contract, it is often possible for two or more intellectual property assets to be damaged by the wrongful action. The analyst may be asked to measure or allocate the damages amount among the affected intellectual property.

Of course, the damages analysis should consider each of the affected intellectual properties. And, the damages analysis should not double count the amount of damages by assigning the same damages measurement to two or more intellectual property assets.

Within multinational or multistate professional practices, different business units in different taxing



jurisdictions can own different intellectual property. For example, a product design could benefit from a utility or design patent in country alpha, the product could be manufactured with a trade secret in country beta, and a trademark could be assigned to the final product in country gamma.

Such multinational or multistate professional practices may analyze the intercompany transfer price considerations of each intellectual property application.

GENERAL REASONS TO VALUE INTELLECTUAL PROPERTY

An analyst may be asked to develop the professional practice intellectual property valuation for many general reasons.

The categories of such general reasons include the following:

1. **Financial accounting:** Fair value measurements for acquisition accounting and intangible asset periodic impairment testing
2. **Income tax accounting:** Valuations for a contribution from an owner to a practice/company/practitioner or of a distribution from a practice/company/practitioner to an owner, a charitable contribution, abandonment deduction, taxpayer solvency or insolvency analysis, or the purchase price allocation in a taxable acquisition
3. **Property tax accounting:** Valuations of the practice or company or practitioner

- intangible property that are either subject to property tax or exempt from property tax
4. **Bankruptcy:** Valuations for post-bankruptcy fresh start accounting, determining value of debt collateral, reasonably equivalent value of assets transferred into or out of the bankruptcy estate, fairness of the price of a bankruptcy estate's asset sale, and debtor practice/company/practitioner solvency or insolvency analysis
 5. **Fairness of transaction price:** Analysis of intellectual property transactions between any two arm's-length parties, between a parent practice/company/practitioner and a less-than-wholly-owned business unit, and between a for-profit entity and a not-for-profit entity
 6. **Forensic analysis:** There are numerous contract-related and tort-related disputes that involve intellectual property valuations or damages measurement analyses, including breach of a development or commercialization contract, eminent domain and expropriation, infringement, tortious interference with business opportunity, and various other tort claims

The preceding list presents many (but not all) of the typical transactional, notational, and controversy reasons to value the professional practice or professional services company intellectual property. The purpose of this listing is to demonstrate that there are numerous commercial reasons to value the professional practice owner/operator's intellectual property.

Related to all of these reasons, the professional practice owners and advisers should be aware that there are professional analysts who apply generally accepted intellectual property valuation approaches, methods, and procedures to the intellectual property valuation process. These analysts comply with promulgated valuation professional organization ("VPO") standards and rely upon a body of knowledge documented in a set of professional literature.

In particular, forensic analysts (including damages measurement analysts) should be familiar with these reasons, approaches, and standards. Parties to intellectual-property-related disputes (and their legal counsel) often claim that intellectual property valuation is some type of litigation-driven exercise.

In fact, intellectual property valuation is not the invention of one or more parties who are trying to gain some sort of an advantage in a dispute. Rather,

intellectual property valuations (developed for litigation or any other purpose) should be based on:

1. generally accepted approaches, methods, and procedures and
2. recognized VPO professional standards and practices.

GENERALLY ACCEPTED INTELLECTUAL PROPERTY VALUATION APPROACHES AND METHODS

All of the generally accepted intangible asset valuation approaches are applicable to the practice/company/practitioner intellectual property. This discussion section introduces the cost approach, market approach, and income approach.

A more fulsome explanation of these intellectual property valuation approaches and methods is presented later in this discussion.

Cost approach valuation methods are particularly applicable to the contributory (or backroom) types of intellectual property. Market approach valuation methods are particularly applicable to intellectual property that is (or could be) licensed. And income approach valuation methods are particularly applicable to intellectual property that produces a measurable amount of operating income for the owner/operator.

The cost approach is often applicable to the valuation of (1) trade secret proprietary information and (2) copyrights on internal use software.

For example, the cost approach may be applied to value the professional practice or professional services company procedure manuals, training manuals, technical documentation and drawings, internal use training films, confidential books and records, confidential customer or supplier files, or the source code for internal use computer software.

For these types of intellectual property, it may be difficult for the analyst (1) to assemble comparable uncontrolled transaction ("CUT") sale or license data or (2) to identify intellectual-property-specific income measures.

The market approach is often applicable to the valuation of patents, trademarks, and certain copyrights. For such intellectual property, it is fairly typical for the owner/developer to license the use of the intellectual property to a third-party asset operator.

The various forms of royalty payments from the licensee to the licensor (for example, royalty as a percent of revenue, as a percent of income, or on

a per unit basis) may be used to estimate the intellectual property value.

The income approach is often applicable to the valuation of patented or unpatented (trade secret) processes or technologies. The income approach is also applicable to the valuation of certain trademarks and copyrights.

For example, it may be applicable if the patented product or process (or the trade secret product formulation in process) allows the practice or company owner to generate increased revenue or experience decreased costs. This income measure may occur when the practice or company owner/operator experiences increased unit sales or increased unit selling prices due to the proprietary feature.

Alternatively, this income measure may occur if the practice or company owner/operator experiences decreased operating expenses or decreased other expenses due to a property process.

The income approach may be applied in the valuation of copyrights related to books, plays, musical compositions, or films and film libraries. This is because the analyst can often identify a measurable stream of income associated with the commercialization of the copyrighted work.

FAMILY LAW INTELLECTUAL PROPERTY VALUATIONS

Disputes related to professional practice or professional services company or practitioner intellectual property are fairly frequent within the context of family law. That is, the individual practitioner may own/operate the intellectual property. Or, the practitioner may own an equity interest in the professional practice or professional services company that owns/operates the intellectual property.

Therefore, the following discussion summarizes several reasons why the analyst may be asked to value professional-practice-related intellectual property within a family law context.

Reason 1: Individual Practitioner Intellectual Property as a Nonmarital Asset

Some jurisdictions consider property that a practitioner spouse brings into a marriage to be nonmarital property. In such an instance, the analyst may be asked to value the intellectual property that was owned by one of the marital parties as of the marriage date.

The analyst may also be asked to value that separate (nonmarital) intellectual property as of a

current (say, separation or dissolution) date. Some jurisdictions consider the appreciation in the value of such an intellectual property to be a nonmarital asset.

Reason 2: Individual Practitioner Intellectual Property as a Marital Asset

When the intellectual property was developed or purchased during the marriage, it is often a marital asset. The analyst may be asked to value the individual intellectual property (or the portfolio of intellectual property assets) as of a current (say, separation or dissolution) date.

The appropriate standard of value is jurisdiction-specific. The value of such a practitioner's intellectual property would be subject to equitable distribution. While the statutory standard of value will vary by jurisdiction, many jurisdictions consider a market-derived standard of value to be appropriate for family law purposes.

Reason 3: Intellectual Property Owned/Operated in the Family-Owned Practice or Company

Often, intellectual property assets are an important value driver in a professional practice or professional services company that is part of the marital estate. In such an instance, the practice or company equity ownership interest is the marital asset.

Often, the analyst may apply income approach or market approach business valuation methods to value the subject equity interest. However, the asset-based approach is also a generally accepted business (professional practices) valuation approach.

In particular, the asset accumulation method (of the asset-based approach) may be used to identify and value an underutilized intellectual property that is owned/operated within the family-owned professional practice or professional services company.

Reason 4: Intellectual Property Highest and Best Use Issues

Typically, all assets of the marital estate should be valued at their highest and best use ("HABU"). This statement is also true of any marital intellectual property—whether the intellectual property is owned (1) directly by the practitioner in the marital estate or (2) indirectly through professional practice ownership interest.

HABU issues often arise with regard to underutilized (or undercommercialized) intellectual

property. This issue arises when the marital estate owns, say, a patent or copyright that is in limited use.

For example, the intellectual property may be used by one company, in one product, and in one geographic territory. However, the HABU of the subject intellectual property may be for numerous licenses to numerous operator/licensees for use in multiple products in multiple geographic territories.

The same HABU concept holds for an intellectual property owned by the family-owned professional practice or professional services company. The subject trademark, technology, or software may be used exclusively by the family-owned professional practice or professional services company.

However, the HABU of those intellectual property assets is to both use them in the family professional practice or professional services company and license them for noncompetitive uses to various licensees.

Whether the intellectual property is owned directly or indirectly by the marital estate, the analyst should consider the HABU of the subject intellectual property.

Reason 5: Intellectual Property as a Nonmarital Asset of a Marital Business

As mentioned above, an analyst often has to value a professional practice or professional services company as part of the marital estate. And, the analyst often has to consider the entity's intellectual property in the valuation of that family-owned professional practice or professional services company.

Occasionally, the analyst encounters a situation where the practice or company is formed after the marriage (and is a marital asset). However, the intellectual property was created before the marriage (and is a nonmarital asset) and was contributed to the family practice or company after the marriage.

For example, let's assume that an inventor spouse creates a proprietary product formula or computer software before the inception of the marriage. The married couple then starts a practice or company, and the inventor contributes his or her intellectual property to the start-up practice or company.

Let's assume that the start-up practice or company flourishes during the term of the marriage. The analyst may be asked to value the portion of the practice or company value that is the nonmarital asset—in other words, that is related to the value contribution of the nonmarital intellectual property.

Reason 6: Measuring Supernormal Practice/Company Appreciation Due to Intellectual Property

Some jurisdictions treat the supernormal appreciation in the value of the family-owned practice or company to be a nonmarital asset. This situation usually occurs when the subject practice or company was owned by one spouse before the marriage.

The normal level of practice or company appreciation during the marital period is usually considered to be a marital asset. Any supernormal amount (above the normally expected amount) of practice or company appreciation during the marital period may be considered a nonmarital asset.

This would be the case if the supernormal practice or company appreciation is due to the extraordinary efforts or talents of the spouse who owned the business interest prior to the marriage. This nonmarital asset issue also occurs when one spouse owned an intellectual property prior to the marriage.

If the extraordinary amount of practice or company appreciation is due to the entity's use of the nonmarital intellectual property, then that extraordinary (above normal) amount of practice or company appreciation may be considered a nonmarital asset.

Reason 7: Analysis of Intellectual Property as an Income-Producing Asset

Sometimes, the analyst is asked to analyze the income-producing capacity of the spouse practitioner's intellectual property. This analysis may consider both:

1. the operating and license income currently generated by the family intellectual property and
2. any additional operating and license income that the family intellectual property could generate at its HABU.

The purpose of this type of income capacity analysis is to prove (or disprove) that the working spouse practitioner will have sufficient cash (from the intellectual property income) to pay alimony, child support, and/or other payments to the non-working spouse.

Reason 8: Intellectual Property Rights as Part of the Marital Estate Distribution

It is often difficult to make an equitable distribution of the marital equity interest in a family-owned practice or company. This situation is particularly the case when there is one working spouse and one nonworking spouse.

In such an instance, the working spouse may not want the nonworking spouse to own (and control) say, 50 percent of the equity in the practice or company. Nonetheless, the nonworking spouse may be entitled to 50 percent of the value of the family business. In addition, the nonworking spouse may not trust the working spouse to manage the value (and distribute the income) of the practice or company.

In order to avoid distributing the actual equity shares of the practice or company, settlement arrangements may be agreed to so that the nonworking spouse receives contractual income interests in the practice or company intellectual property.

Effectively, these marital dissolution settlement agreements become intellectual property licenses. The present value of the expected license income should equal the value of the practice or company equity interest due to the nonworking spouse.

With such an agreement, the working spouse retains control of the subject professional practice or professional services company. And, the nonworking spouse receives a valuable intangible asset and a fairly predictable license income stream.

The analyst may be called on to value the intellectual property and to structure the license agreement terms (including the intellectual property license royalty rate).

DEVELOPING THE INTELLECTUAL PROPERTY VALUATION APPROACHES AND METHODS

This discussion section describes and illustrates the three generally accepted intellectual property valuation approaches, specifically, the cost approach, the market approach, and the income approach. In addition, this discussion section describes the intellectual property valuation synthesis and conclusion process.

The following discussion section summarizes the analyst's typical intellectual property due diligence considerations.

INTELLECTUAL PROPERTY DUE DILIGENCE CONSIDERATIONS

When the valuation analysis relates to any type of professional practice any type of professional services company, or any type of individual practitioner, the analyst should understand the attributes of the subject intellectual property.

The analyst may develop an understanding of the practice or company or practitioner intellectual property attributes by answering the following functional analysis due diligence questions:

1. What are the property rights related to the intellectual property? What are the functional attributes of the intellectual property?
2. What are the operational or economic benefits of the intellectual property to its current practice or company owner/operator? Will those operational or economic benefits be any different if the intellectual property is in the hands of a third-party owner/operator?
3. What is the current utility of the intellectual property? How will this utility change in response to changes in the relevant market conditions? How will this utility change over time? What industry, competitive, economic, or technological factor will cause the intellectual property utility to change over time?
4. Is the intellectual property typically owned or operated as a stand-alone asset? Or is the intellectual property typically owned or operated as (a) part of a bundle with other tangible assets or intangible assets or (b) part of a going-concern practice or company business entity?
5. Does the intellectual property utility (however measured) depend on the operation of tangible assets or other intangible assets or the operation of a practice or company business entity?
6. What is the intellectual property HABU?
7. How does the intellectual property affect the income of the practice or company or practitioner owner/operator? This inquiry may include consideration of all aspects of the owner/operator's revenue, expense, and investments.
8. How does the intellectual property affect the risk (both operational risk and financial risk) of the practice or company or practitioner owner/operator?

9. How does the intellectual property affect the competitive strengths, weaknesses, opportunities, and threats of the practice or company or practitioner owner/operator?
10. Where does the intellectual property fall within its own life cycle, the overall life cycle of the owner/operator, the life cycle of the owner/operator industry, and the life cycle of both competing intellectual property and substitute intellectual property?

These inquiries do not present an exhaustive list of functional analysis due diligence considerations. However, this due diligence gives the analyst a starting point for understanding:

1. the use and function of the practice or company or practitioner intellectual property and
2. the attributes that create value in the intellectual property.

INTELLECTUAL PROPERTY VALUE ATTRIBUTE CONSIDERATIONS

Numerous factors may affect the professional practice, professional services company, or individual practitioner intellectual property value. Industry, product, and service considerations provide a wide range of positive and negative influences on intellectual property value. To the extent possible, the analyst qualitatively and quantitatively considers each of these factors.

Exhibit 1 presents some of the attributes that the analyst considers in the professional practice intellectual property valuation. Exhibit 1 also provides an indication of how these attributes may influence the professional practice intellectual property value.

Not all of the Exhibit 1 factors apply to every intellectual property owned/operated by every professional practice action, and each attribute does not have an equal influence on the intellectual property. However, the analyst typically considers each of these factors.

These professional practice or professional services company or individual practitioner intellectual property considerations can be either quantitative or qualitative. They may be either separately documented in the valuation analysis work papers or performed as one component of the overall valuation analysis.

These considerations allow the analyst to assess the influence of these factors, either positive or negative, on the professional practice or profes-

sional services company or individual practitioner intellectual property value.

Some of the other factors that the analyst may consider include the following:

1. The legal rights associated with the intellectual property
2. The industry or profession in which the intellectual property is used
3. The economic characteristics of the intellectual property
4. The reliance of the practice or company owner/operator on tangible assets or other intangible assets
5. The expected impact of regulatory policies or other external factors on the commercial visibility or marketability of the intellectual property

Applying the Intellectual Property Valuation Methods

The analyst typically attempts to apply all valuation approaches and methods to value the professional practice or professional services company or individual practitioner intellectual property.

When that is possible, the analyst can develop mutually supportive evidence and a multifaceted perspective regarding the intellectual property value. However, due to data constraints, it is typical for an analyst to rely on only one or two approaches or methods in the intellectual property valuation process.

The following section summarizes the cost approach methods, the market approach methods, and the income approach methods. And, this section summarizes the analyst's process of reconciling multiple value indications into a final intellectual property value conclusion.

Cost Approach Valuation Methods

There are several intellectual property valuation methods within the cost approach. Each valuation method applies a specific definition of cost.

Two of the typical cost definitions—or cost measurement metrics—include:

1. reproduction cost new and
2. replacement cost new.

Reproduction cost new is the total cost, at current prices, to develop an exact duplicate of the subject intellectual property. Replacement cost new is the total cost, at current prices, to develop an asset

Exhibit 1 Illustrative List of Professional Practice or Professional Services Company or Individual Practitioner Intellectual Property Attributes

| Item | Attribute | Influence on Value | |
|------|----------------------------------|--|--|
| | | Positive | Negative |
| 1 | Age—absolute | Newly created, state-of-the-art intellectual property | Long-established, dated intellectual property |
| 2 | Age—relative | Newer than the competing intellectual property | Older than the competing intellectual property |
| 3 | Use—consistency | Intellectual property that is proven or used consistently on products and services | Intellectual property that is unproven or used inconsistently on products and services |
| 4 | Use—specificity | Intellectual property that can be used on a broad range of products and services | Intellectual property that can be used only on a narrow range of products and services |
| 5 | Use—industry | Intellectual property that can be used in a wide range of industries or professions | Intellectual property that can be used only in a narrow range of industries or professions |
| 6 | Potential for expansion | Unrestricted ability to use the intellectual property on new or different products and services | Restricted ability to use the intellectual property on new or different products and services |
| 7 | Potential for exploitation | Unrestricted ability to license the intellectual property into new industries/professions and uses | Restricted ability to license the intellectual property into new industries/professions and uses |
| 8 | Proven use | Intellectual property has proven application | Intellectual property does not have proven application |
| 9 | Proven exploitation | Intellectual property has been commercially licensed | Intellectual property has not been commercially licensed |
| 10 | Profitability—absolute | Profit margins or investment returns on related products and services higher than the industry/profession average | Profit margins or investment returns on related products and services lower than the industry/profession average |
| 11 | Profitability—relative | Profit margins or investment returns on related products and services higher than the competing intellectual property | Profit margins or investment returns on related products and services lower than the competing intellectual property |
| 12 | Expense of continued development | Low cost to maintain the intellectual property as state-of-the-art | High cost to maintain the intellectual property as state-of-the-art |
| 13 | Expense of commercialization | Low cost of bringing the intellectual property to commercial exploitation | High cost of bringing the intellectual property to commercial exploitation |
| 14 | Means of commercialization | Numerous means available to commercialize the intellectual property | Few means available to commercialize the intellectual property |
| 15 | Market share—absolute | Products and services using the intellectual property have high market share | Products and services using the intellectual property have low market share |
| 16 | Market share—relative | Products and services using the intellectual property have higher market share than competing products and services | Products and services using the intellectual property have lower market share than competing products and services |
| 17 | Market potential—absolute | Products and services using the intellectual property are in an expanding market | Products and services using the intellectual property are in a contracting market |
| 18 | Market potential—relative | Market for products and services using the intellectual property expanding faster than the competing intellectual property | Market for products and services using the intellectual property expanding slower than the competing intellectual property |
| 19 | Competition | Little or no competition for the intellectual property | Considerable established competition for the intellectual property |
| 20 | Perceived demand | Perceived currently unfulfilled need for the intellectual property | Little or no perceived need for the intellectual property |

having the same functionality or utility as the actual intellectual property.

Functionality is an engineering concept that means the ability of the intellectual property to perform the task for which it was originally designed. Utility is an economics concept that means the ability of the intellectual property to provide an equivalent amount of satisfaction.

There are also other cost definitions—or cost measurement metrics—that may be applicable to a cost approach valuation. Some analysts consider cost avoidance as a cost approach measure. However, cost avoidance analyses are typically considered to be income approach methods. This cost measure quantifies either historical or prospective costs that are avoided because the practice or company owner/operator actually owns the intellectual property.

Some analysts consider trended historical costs as a cost approach measure. In this cost measure, historical intellectual property development costs are identified and trended to the valuation date by an inflation-based index factor. Regardless of the specific cost measure used, all cost approach methods include a comprehensive definition of cost.

The cost measurement (whether replacement cost new, reproduction cost new, or some other cost measurement metric) typically includes the following four cost components:

1. Direct costs (e.g., materials)
2. Indirect costs (e.g., engineering and design labor)
3. The intellectual property developer's profit (on the direct cost and indirect cost investment)
4. An opportunity cost/entrepreneurial incentive (to motivate the development process)

Typically, the intellectual property development material, labor, and overhead costs are easy to identify and quantify.

The developer's profit can be estimated using several procedures. It is often estimated as a percentage rate of return on the total investment in the material, labor, and overhead costs.

The entrepreneurial incentive is often measured as the owner/operator's lost profits during the replacement intellectual property development period.

For example, let's assume it will take two years to develop a replacement patent. If the buyer buys the seller's actual patent, then the buyer can start earning income (either operating income or license income) immediately. If the buyer "builds" its own

hypothetical replacement patent, then the buyer will not earn any income (operating income or license income) during the two-year development period.

The two years of owner/operator lost profits during the hypothetical patent development period represents the opportunity cost of developing a new replacement patent—compared to buying the actual seasoned patent.

All four cost components—that is, direct costs, indirect costs, developer's profit, and opportunity cost—should be considered in the intellectual property cost approach valuation. So, while the cost approach is different from the income approach, there are economic analyses included in the cost approach.

These economic analyses provide indications of both:

1. the appropriate levels of development period opportunity cost (if any) and
2. the appropriate amount of economic obsolescence (if any).

The intellectual property cost metric (however measured) should be adjusted for losses in value due to:

1. physical deterioration,
2. functional obsolescence, and
3. economic obsolescence.

Physical deterioration is the reduction in value due to physical wear and tear. It is unlikely that a professional practice intellectual property will experience physical deterioration.

Functional obsolescence is the reduction in value due to the intellectual property's inability to perform the function (or yield the periodic utility) for which it was originally designed. The technological component of functional obsolescence is a decrease in value due to improvements in technology that make the intellectual property less than the ideal replacement for itself.

Economic obsolescence is a reduction in value due to the effects, events, or conditions that are external to—and not controlled by—the intellectual property current use or condition. The impact of economic obsolescence is typically beyond the control of the practice or company owner/operator.

In any cost approach analysis, the analyst estimates the amounts (if any) of intellectual property physical deterioration, functional obsolescence, and economic obsolescence. In this estimation, the

analyst considers the intellectual property actual age—and its expected useful economic life (“UEL”).

A typical cost approach formula for quantifying intellectual property replacement cost new is: reproduction cost new – curable functional obsolescence = replacement cost new.

To estimate the intellectual property value, the following cost approach formula may be applied: replacement cost new – physical deterioration – economic obsolescence – incurable functional obsolescence = intellectual property value.

Cost Approach Illustrative Example

Exhibits 2 and 3 present a simplified illustrative example of the application of the cost approach to value intellectual property.

In this example, the analyst is asked to estimate the fair market value of the copyrights and trade secrets related to the hypothetical Alpha Professional Services, LLC (“Alpha”), internally developed computer software.

All of the Alpha internally developed computer software is subject to copyright protection. And, the Alpha software source code and the systems documentation and user manuals are treated as company trade secrets.

The analyst is instructed that the appropriate valuation date for the analysis is January 1, 2022.

The analyst decided to apply the cost approach and the replacement cost new less depreciation valuation method.

Exhibit 2 includes the analysis of all four cost components of the cost approach. Exhibit 2 also illustrates the analyst’s functional obsolescence considerations. Exhibit 3 presents the detailed calculation of one cost component of the cost approach: the developer’s profit analysis.

Based on the cost approach analysis summarized in Exhibit 2, the analyst concludes that the fair market value of the hypothetical Alpha internally developed software copyrights and trade secrets, as of January 1, 2022, is \$200 million.

Market Approach Valuation Methods

The analyst typically attempts to apply market approach methods first in the intellectual property valuation. This is because the market—that is, the economic environment where arm’s-length transactions between unrelated parties occur—is often considered to provide the best indicator of value.

However, the market approach will only provide meaningful valuation evidence when the intellectual property is sufficiently similar to the intellectual

properties that are transacting (by sale or license) in the marketplace.

In that case, the guideline intellectual property transaction (sale or license) prices may indicate the expected price for the subject intellectual property.

There are two principal market approach intellectual property valuation methods:

1. The CUT method
2. The comparable profit margin (“CPM”) method

In the CUT method, the analyst searches for arm’s-length sales or licenses of benchmark intellectual property. In the CPM method, the analyst searches for companies that provide benchmarks to the owner/operator company.

In the CUT method, the analyst will more likely rely on CUT license transactions than on sale transactions. This is because third-party licenses of intellectual property are more typical than third-party sales of intellectual property. Nonetheless, for both sale and license transactions, the analyst will follow a systematic process in the CUT method valuation.

First, the analyst researches the appropriate exchange markets to obtain information about sale or license transactions involving guideline (i.e., similar from an investment risk and expected return perspective) or comparable (i.e., almost identical) intellectual property that may be compared to the marital estate intellectual property. Some of the comparison attributes include the intellectual property type, intellectual property use, industry in which the intellectual property operates, date of sale or license, and so forth.

Second, the analyst verifies the transactional information by confirming that:

1. the transactional data are factually accurate and
2. the sale or license exchange transactions reflect arm’s-length market considerations.

If the guideline sale or license transaction was not conducted at arm’s-length market conditions, then adjustments to the transactional data may be necessary.

This verification procedure may also elicit additional information about the current market conditions for the sale or license of the professional practice intellectual property.

Third, the analyst selects relevant units of comparison (e.g., income pricing multiples or dollars per unit—such as “per drawing” or “per line of code”).

Exhibit 2
Alpha Professional Services, LLC
Computer Software Copyrights and Trade Secrets
Cost Approach—Replacement Cost New less Depreciation Method
Valuation Summary
As of January 1, 2022

| Software System | Estimated Software Replacement Development Effort in Person-Months [a] | Time to Develop Replacement Software (in Calendar-Months) [b] | Indicated RCNLD Component [c] \$000 |
|--|--|---|--|
| AS/400 | 4,531 | 29 | 66,100 |
| Point of Sale | 575 | 25 | 8,400 |
| Tandem | 3,304 | 16 | 48,200 |
| Unisys | 1,229 | 5 | 17,900 |
| Pioneer | 1,807 | 41 | 26,400 |
| Voyager | 325 | 12 | 4,700 |
| Host to Host | <u>85</u> | 9 | <u>1,200</u> |
| Total Direct Costs and Indirect Costs | 11,856 | 24 | 172,900 |
| Plus: Developer's Profit [d] | | | 10,500 |
| Plus: Entrepreneurial Incentive [e] | | | <u>31,200</u> |
| Equals: Total Replacement Cost New | | | 214,600 |
| Less: Depreciation and Obsolescence [f] | | | <u>13,300</u> |
| Equals: Replacement Cost New less Depreciation | | | 201,300 |
| Indicated Fair Market Value of the Alpha Software-Related Copyrights and Trade Secrets (rounded) | | | <u>200,000</u> |

[a] The estimated development effort for each Alpha software category is equal to the average of the replacement development effort indication using (1) the COCOMO software cost engineering model and (2) the KnowledgePLAN software cost engineering model, rounded.

[b] The estimated time to develop replacement software in calendar months for each software category is equal to the average of the time to develop the replacement software in calendar months using (1) the COCOMO software engineering model and (2) the KnowledgePLAN software engineering model, rounded. The final figure in this column represents a weighted average time to develop the replacement software in calendar months (weighted by effort in person months), which is used to calculate the entrepreneurial incentive.

[c] Equal to the estimated development effort in person months multiplied by the \$14,585 cost per person month, rounded. The \$14,585 cost per person month was calculated by multiplying the blended hourly rate of \$82.87 provided by the Alpha vice president of data processing by 176 (8 hours per day times 22 days per month).

[d] Calculated as (1) total direct replacement cost new times (2) a computer software developer's profit margin of 11 percent times 55 percent. This adjustment is made because 45 percent of software development workforce represents outside contractors, the cost of which already includes a market-based developer's profit.

[e] Calculated as (1) the Alpha present value discount rate of 17 percent times (2) the sum of the total direct and indirect replacement cost new and the developer's profit, divided by 2 times (3) the weighted average total development time of 2 years (based on the weighted average time to develop in person months of 24 months as described in footnote [b]).

[f] According to Alpha data processing management, the Point of Sale system is scheduled to be replaced and upgraded in approximately five years. The Pioneer system is also scheduled to be replaced and upgraded in approximately five years. And, the Voyager system is scheduled to be substantially upgraded next year. Therefore, the analyst estimated functional obsolescence as follows:

| System Scheduled for Replacement | Replacement Cost New* | Percent Obsolete | Obsolescence Allowance |
|----------------------------------|-----------------------|------------------|------------------------|
| Point of Sale | \$10,400,000 | 20% | \$2,100,000 |
| Pioneer | \$32,700,000 | 20% | \$6,500,000 |
| Voyager | \$5,800,000 | 80% | <u>\$4,700,000</u> |
| Total | | | <u>\$13,300,000</u> |

*Includes the developer's profit and entrepreneurial incentive cost components.

Exhibit 3
Alpha Professional Services, LLC
Computer Software Copyrights and Trade Secrets
Cost Approach—Replacement Cost New less Depreciation Method
Estimate of Computer Software Developer's Profit
As of January 1, 2022

Operating Profit Margin Comparison

| | | Operating Profit Margins | | |
|---|-----|--------------------------|--------------------|--------------------|
| | | 4/1/20– 3/31/21 | 4/1/19– 3/31/20 | 4/1/18– 3/31/19 |
| <u>Selected Industry Sectors</u> | | | | |
| GICS Code 7371 - Custom Computer Programming Services - All Companies | [a] | 4.2% | 4.2% | 4.8% |
| GICS Code 7371 - Custom Computer Programming Services - Sales of \$25 Million + | [a] | 7.4% | 3.8% | 2.2% |
| GICS Code 7373 - Computer Systems Design Services - All Companies | [b] | 4.3% | 3.1% | 2.1% |
| GICS Code 7373 - Computer Systems Design Services - Sales of \$25 Million + | [b] | 4.7% | 4.3% | 1.1% |

Adjusted Operating Profit Margins

| <u>Selected Guideline Public Companies</u> | <u>Ticker</u> | | | | |
|--|---------------|------------------|------------------|------------------|-----------------------|
| | | For 2021/2020 | For 2020/2019 | For 2019/2018 | Three-Year Average |
| Accenture plc | ACN | [c] 11.6% | 11.4% | 11.6% | 11.5% |
| Analysts International Corp. | ANLY | [c] -0.5% | 0.5% | 0.8% | 0.3% |
| Bearing Point Ind. | BGPT | [c] 4.8% | 6.7% | 8.7% | 6.7% |
| Cap Gemini Ernst & Young Group | CGEY | [c] -0.1% | 4.7% | 9.8% | 4.8% |
| Cognizant Technology Solutions Corp. | CTSH | [c] 19.7% | 20.0% | 19.1% | 19.6% |
| Computer Sciences Corporation | CSC | [c] 6.6% | 5.6% | 6.2% | 6.1% |
| Electronic Data Systems Corp. | EDS | [c] 8.7% | 10.3% | 9.5% | 9.5% |
| Infosys Technologies Ltd. | INFY | [c] 29.0% | 32.7% | 33.2% | 31.7% |
| Perot Systems Corp. | PER | [c] 10.2% | 6.1% | 6.7% | 7.6% |
| Unisys Corporation | UIS | [c] 7.5% | 4.5% | 6.2% | 6.1% |
| Wipro Ltd. | WIT | [c] 21.1% | 23.8% | 22.8% | 22.6% |

Selected Guideline Public Companies

| | | | |
|-------------------------------|-------|-------|-------|
| High Profit Margins | 29.0% | 32.7% | 33.2% |
| Low Profit Margins | -0.5% | 0.5% | 0.8% |
| Median Profit Margins | 8.7% | 6.7% | 9.5% |
| Average (Mean) Profit Margins | 10.8% | 11.5% | 12.2% |

Selected Computer Software Developer's Profit Margin 11%

[a] The Risk Management Association 2021–2020, 2020–2019, and 2019–2018 *Annual Statement Studies* - Custom Computer Programming Services.

[b] The Risk Management Association 2021–2020, 2020–2019, and 2019–2018 *Annual Statement Studies* - Computer Systems Design Services.

[c] S&P Capital IQ database.

Note: All of these data are hypothetical and are presented for illustrative purposes only.

And, the analyst will develop a comparative analysis for each selected unit of comparison.

Fourth, the analyst compares the selected guideline or comparable intellectual property sale or license transactions with the professional practice intellectual property using the selected elements of comparison.

Then, the analyst adjusts the sale or license price of each guideline transaction for any differences between the guideline intellectual property and the professional practice intellectual property. If such comparative adjustments cannot be measured, then the analyst may eliminate the sale or license transaction as a guideline for future valuation consideration.

Fifth, the analyst selects pricing metrics for the professional practice intellectual property from the range of pricing metrics indicated from the guideline or comparable transactions. The analyst may select pricing multiples in the low end, midpoint, or high end of the range of pricing metrics indicated by the transactional sale or license data.

The analyst selects the subject-specific pricing metrics based on the analyst's comparison of the professional practice intellectual property to the guideline intellectual property.

Sixth, the analyst applies the selected subject-specific pricing metrics to the subject intellectual property financial or operational fundamentals (e.g., revenue, income, number of drawings, number of lines of code, etc.). This procedure typically results in several market-derived value indications for the professional practice intellectual property.

Seventh, the analyst reconciles the various value indications provided by the analysis of the guideline sale and/or license transactions into a single market approach value indication.

In this final reconciliation procedure, the analyst summarizes and reviews:

1. the transactional data and
2. the quantitative analyses (i.e., the various pricing metrics) that resulted in each value indication.

Finally, the analyst resolves these value indications into a single value indication.

Exhibit 4 describes several of the databases that the analyst may search in order to select intellectual property sale or license CUTs. This is not an exhaustive list.

Exhibit 5 describes several of the print sources that the analyst may search in order to select intellectual property sale or license CUTs.

Of course, the analyst may confer with the practice or company or practitioner owner/operator to explore whether the owner/operator has entered into any intellectual property license agreements (either inbound or outbound). These practice or company or practitioner owner/operator license agreements could relate to either the actual intellectual property or to comparable intellectual property.

The CPM method is also based on a comparative analysis. However, in this valuation method, the analyst does not rely on the sales and licenses. Rather, the analyst searches for comparable or guideline companies.

The objective of the CPM method is to identify guideline companies that are comparative to the professional practice or professional services company or individual practitioner owner/operator in all ways except one. The practice or company owner/operator, of course, owns the actual intellectual property. Ideally, the selected guideline companies should provide a meaningful benchmark to the practice or company or practitioner owner/operator—except that the guideline companies do not own comparable intellectual property.

Ideally, the CPM method guideline companies operate in the same industry or profession as the owner/operator company. Ideally, the guideline companies have the same types of raw materials and the same types of sources of supply. Ideally, the guideline companies have the same type of customers. Ideally, the guideline companies produce the same type of products or services.

And, ideally, the only difference should be that the practice or company or practitioner owner/operator has an established trademark and the guideline companies have generic trademarks. Or, the practice or company or practitioner owner/operator owns the actual patent and the guideline companies produce unpatented (and presumably inferior) products.

Because of the economic benefit that the intellectual property provides, the practice or company or practitioner owner/operator should earn a higher profit margin than the selected guideline companies. This profit margin comparison is usually made at the earnings before interest and taxes (or "EBIT") level of income. This EBIT margin typically reflects the pretax operating income of the comparative companies—a measure of income that the intellectual property can influence.

The incremental (or superior) profit margin earned by the owner/operator can then be converted into an intellectual property implied royalty rate.

Typically, all of the excess profit margin is assigned to the intellectual property (if the

Exhibit 4
Market Approach
Comparable Uncontrolled Transaction Method
Intellectual Property License Transaction Royalty Rate Automated Databases

RoyaltySource

www.royaltysource.com—AUS Consultants produces a database that provides intellectual property license transaction royalty rates. The database can be searched by industry, technology, and/or keyword. The information provided includes the license royalty rates, name of the licensee and the licensor, a description of the intellectual property licensed (or sold, if applicable), the transaction terms, and the original sources of the information provided. Preliminary CUT results are available online and a final report is sent to the subscriber via e-mail.

RoyaltyStat, LLC

www.royaltystat.com—RoyaltyStat is a subscription-based database of intellectual property license royalty rates and license agreements, compiled from Securities and Exchange Commission documents. It is searchable by SIC code or by full text. The CUT results can be viewed online or archived. The intellectual property transaction database is updated daily. The full text of each intellectual property license agreement in the database is available.

Royalty Range

www.royaltyrange.com—RoyaltyRange consists of manually gathered and analyzed data. RoyaltyRange reports contain more than 50 detailed standardized comparability factors on royalty rates and license terms. Each report is supplemented with original unredacted agreements, as well as filings and other types of documents. The RoyaltyRange database focuses on European transactions, but also contains some U.S. transactions. It excludes agreements between related parties, agreements with undisclosed remuneration mechanisms, royalty-free agreements, agreements where royalties are expressed in other forms than percentage, and agreements with individuals, universities, and other non-commercial entities.

ktMINE

www.ktmine.com—ktMINE is an interactive intellectual property database that provides direct access to license royalty rates, actual license agreements, and detailed agreement summaries. The database contains over 125,000 intellectual property license agreements. The intellectual property license database is updated frequently. License agreements are searchable by industry, keyword, and various other parameters. The full text of each intellectual property license agreement is available. This database is also available through Business Valuation Resources.

Exhibit 5
Market Approach
Comparable Uncontrolled Transaction Method
Intellectual Property License Transaction Royalty Rate Print Sources

RoyaltySource publishes an annual Royalty Rates Industry Summary. The Royalty Rate Industry Summary provides benchmark royalty rate measures covering 15 industries from over 30 years of data. Average, median and interquartile range (IQR) royalty rate measures by industry are included.

Gregory J. Battersby and Charles W. Grimes annually author a book called *Licensing Royalty Rates*, which is published by Wolters Kluwer. This reference tool provides intellectual property license royalty rates for 1,500 products and services in 9 different licensed product categories: art, celebrity, character/entertainment, collegiate, corporate, designer event, music, nonprofit, and sports.

Intellectual Property Research Associates produces three books that contain information on license royalty rates for patents, trademarks, and copyrights. The books are *Royalty Rates for Trademarks & Copyrights*, *Royalty Rates for Technology*, and *Royalty Rates for Pharmaceuticals & Biotechnology*.

intellectual property is the only reason for the practice or company owner/operator's superior profit margin).

This implied royalty rate (derived from the excess profit margin) is then multiplied by the owner/operator revenue in order to estimate the amount of the incremental income generated from the intellectual property.

This incremental income is capitalized over the intellectual property expected UEL. The result of this capitalization procedure is an estimate of the professional practice intellectual property value, based on the CPM method.

Exhibit 6 presents a nonexhaustive list of publicly traded company data sources that the analyst may apply to:

1. select guideline companies for the CPM method analysis and
2. obtain guideline company profit margin information to apply in the CPM method analysis.

Exhibit 6 Market Approach Comparable Profit Margin Method Typical Data Sources for Guideline Company Profit Margins

FactSet Research Systems, Inc.—FactSet

Dun & Bradstreet—D&B Hoovers

Mergent, Inc.—MergentOnline

Morningstar, Inc.—Morningstar Equity Research

Standard & Poor's—Capital IQ

London Stock Exchange Group—Refinitiv

Accordingly, there are several market approach intellectual property valuation methods. However, each method is based on comparative analyses of either guideline intellectual property sales, guideline intellectual property license royalty rates, or guideline companies (that own generic intellectual property).

Market Approach Illustrative Example

Finally, Exhibit 7 presents an illustrative example of the application of the market approach in a pro-

fessional practice intellectual property valuation. In this example, the analyst is asked to estimate the fair market value of the hypothetical Beta Associates, LLC ("Beta"), trademarks and trade names.

Beta is a closely held professional services consulting company that specializes in the telecommunications industry. The analyst is instructed that the appropriate valuation date for the intellectual property valuation is as of January 1, 2022.

The analyst decided to apply the relief from royalty ("RFR") method of the market approach to value the Beta trademarks and trade names.

Based on these CUT data (and a comparative analysis of the Beta trademarks to the selected guideline trademarks), the analyst selected a 2 percent license royalty rate to apply in the RFR method analysis.

Exhibit 8 summarizes the analyst's search for, selection of, and analysis of, CUT trademark license agreements. Like Beta, the CUT trademark license data are all related to the telecommunications industry.

Exhibit 9 summarizes the analyst's calculation of the Beta present value discount rate. This discount rate is used to present value the hypothetical relief from license royalty payment projection over the trademark's expected UEL.

Based on discussions with Beta management and based on research regarding comparable telecommunications industry trademark life cycles, the analyst determined that the average UEL of the subject trademarks was 20 years. Therefore, the trademark valuation is based on a 20-year trademark license royalty income projection period.

Based on the market approach valuation analysis summarized in Exhibit 7, the analyst concluded a fair market value of \$840 million for the Beta trademarks and trade names, as of January 1, 2022.

INCOME APPROACH VALUATION METHODS

In this valuation approach, value is estimated as the present value of the future income generated from the ownership/operation of the professional practice intellectual property.

The present value calculation has three principal components:

1. An estimate of the duration of the intellectual property income projection period, typically measured based on the analyst's estimate of the intellectual property UEL

Exhibit 7
Beta Associates, LLC
Trademarks and Trade Names
Market Approach—Relief from Royalty Method
Valuation Summary
As of January 1, 2022

| <u>Present Value of Discrete Projection Period</u> <u>for the Trademark License Royalty Expense Relief:</u> | Projected Calendar Years | | | | |
|--|--------------------------|---------------|---------------|---------------|---------------|
| | 2022 | 2023 | 2024 | 2025 | 2026 |
| | \$000 | \$000 | \$000 | \$000 | \$000 |
| Management-Provided Revenue Projection [a] | 8,634,139 | 8,358,945 | 8,042,393 | 7,720,369 | 7,377,326 |
| Arm's-Length Trademark License Royalty Rate [b] | 2% | 2% | 2% | 2% | 2% |
| Projected Pretax Trademark License Royalty Expense Relief | 172,683 | 167,179 | 160,848 | 154,407 | 147,547 |
| Less: Projected Income Tax Rate [c] | <u>37%</u> | <u>37%</u> | <u>37%</u> | <u>37%</u> | <u>37%</u> |
| Projected After-Tax Trademark License Royalty Expense Relief | 108,790 | 105,323 | 101,334 | 97,277 | 92,954 |
| Discounting Periods [d] | 0.5000 | 1.5000 | 2.5000 | 3.5000 | 4.5000 |
| Present Value Factor @ 11% [e] | <u>0.9492</u> | <u>0.8551</u> | <u>0.7704</u> | <u>0.6940</u> | <u>0.6252</u> |
| Present Value of Trademark License Royalty Expense Relief | <u>103,264</u> | <u>90,061</u> | <u>78,068</u> | <u>67,510</u> | <u>58,115</u> |
| Sum of the Present Value of the Discrete Projection Period Trademark License Royalty Expense Relief | <u>397,018</u> | | | | |

Present Value of Terminal Projection Period for the Trademark License Royalty Expense Relief:

| | |
|--|-------------------|
| Fiscal 2020 Normalized Trademark License Royalty Expense Relief [f] | \$ 92,954 |
| Present Value of an Annuity Factor [g] | <u>7.579</u> |
| Terminal Value of Trademark License Royalty Expense Relief | 704,498 |
| Present Value Factor @ 11% | <u>0.6252</u> |
| Present Value of Terminal Value for the Trademark License Royalty Expense Relief | <u>\$ 440,452</u> |

Trademark and Trade Name Valuation Summary:

| | |
|---|-------------------|
| Present Value of the Discrete Projection Period of the Trademark License Royalty Expense Relief | \$ 397,018 |
| Present Value of the Terminal Projection Period of the Trademark License Royalty Expense Relief | <u>440,452</u> |
| Indicated Fair Market Value of the Beta Trademarks and Trade Names (rounded) | <u>\$ 840,000</u> |

[a] Revenue projection provided by Beta management, consistent with the professional services company's long-range financial plan.

[b] Based on an analysis of arm's-length license agreements between independent parties for the license of similar intellectual property, as presented in Exhibit 8.

[c] Based on the Beta expected effective income tax rate.

[d] Calculated as if the license royalty expense relief is received at midyear.

[e] Based on the Beta weighted average cost of capital, presented in Exhibit 9.

[f] Based on the 2026 projected after-tax trademark royalty expense relief and an expected royalty expense relief long-term growth rate of 0 percent after the five-year discrete projection period.

[g] Based on a present value of an annuity factor for an 11 percent discount rate and a 15-year terminal period expected UEL; the 15-year UEL is based on a total expected life of 20 years and a 5-year discrete projection period.

Exhibit 8
Beta Associates, LLC
Trademarks and Trade Names
Market Approach—Relief from Royalty Method
CUT Trademark License Transactions
As of January 1, 2022

| Trademark Licensor | Trademark Licensee | Comparable Uncontrolled Transaction Trademark License Description | License Term (Years) | License Start Year | License Royalty Rate Range | License Upfront/Flat Fee | | | | | | | | | | | | |
|---|-----------------------------------|--|----------------------|--------------------|----------------------------|-------------------------------------|--------------------|--|-----|------|-----------------------|------|----------------------|------|-----------|------|-------------|------|
| | | | | | Low High | | | | | | | | | | | | | |
| Southwestern Bell Telephone | Telco Group | The royalty fee is for the right to use the name, reputation, and public image of the Southwestern Bell Telephone Company. | 10 | 2017 | 5.0% 5.0% | NA | | | | | | | | | | | | |
| Cable and Wireless PLC | Hong Kong Telecommunications Ltd. | Cable and Wireless entered into an agreement with a Hong Kong telephone company for the use of its trademarks (in particular, use of the telecommunication name and logo in connection with international business) on relevant products and services. | 10 | 2017 | 8.0% 8.0% | NA | | | | | | | | | | | | |
| AT&T Corp. | KIRI Inc. | The licensor grants to the licensee a nonexclusive, nontransferable, non-sub-licensable license to use the licensed marks (AT&T and globe design logo) solely in connection with the marketing, advertising, promotion, and provision of the licensed services (such as telecommunication and internet services) in the licensed territory. | 10 | 2018 | 2.50% 4.00% | \$2.5 million minimum guarantee | | | | | | | | | | | | |
| Nextel | Nextel Partners | A license between a U.S. company and a publicly owned spin off company for rights to use the Nextel brand name. The licensee owns its own spectrum and provides services as Nextel. | 10 | 2018 | 0.50% 1.00% | 0 | | | | | | | | | | | | |
| France Telecom (Orange Brand Services Limited, UK) | PTK Centertel | PTK Centertel is rebranding its name from Idea to Orange. Idea, which now holds 32.2% of the market, will change its name and logo (trademark). PTK Centertel will pay the France Telecom a royalty for use of the Orange name. | 10 | 2019 | 1.6% 1.6% | NA | | | | | | | | | | | | |
| Qwest Communications International, Inc. | Unical Enterprises, Inc. | An exclusive, nontransferable right to use the following trademarks: Techline, Easytouch, Favorite, Classic Favorite, Classic Favorite Plus, Phototouch, Choice, Competitor, Competitor Plus, Roommate, Plaza, Favorite Plus, Easyreach, Big Button, EZ Button, Cleartech, Favorite Messenger II, Digimate, Mountain Bell. A nonexclusive and nontransferable right to use the following trademarks: B Office, Bell Symbol, Bell mark, Northwestern Bell. All of the above in connection with corded telephones, cordless telephones, answering machines, and telephone/answering devices. | 10 | 2019 | 2.1% 2.2% | NA | | | | | | | | | | | | |
| Virgin Enterprises Limited | NTL Inc. | The licensee entered into a trademark license agreement under which it is entitled to use certain Virgin trademarks in the mobile phone telecommunications industry within the United Kingdom and Ireland. | 15 | 2020 | 0.25% 0.25% | £8.5 million minimum annual royalty | | | | | | | | | | | | |
| <p>NA = Not applicable</p> <p>Note: All data are hypothetical and are presented for illustrative purposes only.</p> | | | | | | | | | | | | | | | | | | |
| <p style="text-align: center;">Indicated CUT License Agreements</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="text-align: center;">Royalty Rate Range</th> </tr> <tr> <th style="text-align: center;">Low</th> <th style="text-align: center;">High</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">High Rate Indications</td> <td style="text-align: center;">8.0%</td> </tr> <tr> <td style="text-align: center;">Low Rate Indications</td> <td style="text-align: center;">0.3%</td> </tr> <tr> <td style="text-align: center;">Mean Rate</td> <td style="text-align: center;">2.9%</td> </tr> <tr> <td style="text-align: center;">Median Rate</td> <td style="text-align: center;">2.1%</td> </tr> </tbody> </table> | | | | | | | Royalty Rate Range | | Low | High | High Rate Indications | 8.0% | Low Rate Indications | 0.3% | Mean Rate | 2.9% | Median Rate | 2.1% |
| Royalty Rate Range | | | | | | | | | | | | | | | | | | |
| Low | High | | | | | | | | | | | | | | | | | |
| High Rate Indications | 8.0% | | | | | | | | | | | | | | | | | |
| Low Rate Indications | 0.3% | | | | | | | | | | | | | | | | | |
| Mean Rate | 2.9% | | | | | | | | | | | | | | | | | |
| Median Rate | 2.1% | | | | | | | | | | | | | | | | | |

Exhibit 9 (page 1 of 2)
Beta Associates, LLC
Weighted Average Cost of Capital
As of January 1, 2022

| Cost of Equity Capital: | | Source |
|--|--------------|--|
| Method #1: Modified Capital Asset Pricing Model (ex post equity risk premium) | | |
| Risk-Free Rate of Return | 4.5% | 20-year U.S. Treasury bond, <i>Federal Reserve Statistical Release</i> , as of December 31, 2021 |
| General Equity Risk Premium | 7.10% | <i>Stocks Bonds Bills & Inflation</i> , Morningstar Inc., 2021 |
| Multiplied by: Industry Beta | <u>1.05</u> | |
| Industry-Adjusted General Equity Risk Premium | 7.4% | |
| Size Equity Risk Premium | 0.7% | 2 nd decile, <i>Stocks Bonds Bills & Inflation</i> , Morningstar Inc., 2021 |
| Company-Specific Equity Risk Premium | <u>2.0%</u> | Analyst's functional analysis |
| Indicated Cost of Equity Capital: | <u>14.6%</u> | |
| Method #2: Modified Capital Asset Pricing Model (supply side equity risk premium) | | |
| Risk-Free Rate of Return | 4.5% | 20-year U.S. Treasury bond, <i>Federal Reserve Statistical Release</i> , as of December 31, 2021 |
| General Equity Risk Premium | 6.20% | <i>Stocks Bonds Bills & Inflation</i> , Morningstar Inc., 2021 |
| Multiplied by: Industry Beta | <u>1.05</u> | |
| Industry-Adjusted General Equity Risk Premium | 6.5% | |
| Size Equity Risk Premium | 0.7% | 2 nd decile, <i>Stocks Bonds Bills & Inflation</i> , Morningstar Inc., 2021 |
| Company-Specific Equity Risk Premium | <u>2.0%</u> | Analyst's functional analysis |
| Indicated Cost of Equity Capital: | <u>13.7%</u> | |
| Note: All data are hypothetical and are presented for illustrative purposes only. | | |

Exhibit 9 (page 2 of 2)
Beta Associates, LLC
Weighted Average Cost of Capital
As of January 1, 2022

| Cost of Equity Capital (cont.): | | | |
|--|-------------------------------|--------------------------------|------------|
| Method #3: Kroll Risk Premium Report Model | | | Source |
| Risk-Free Rate of Return | | | 4.5% |
| Equity Risk Premium Over Risk-Free Rate | | | |
| Global Corp. Fundamental \$MIM | Regression Equation Variables | Risk Prem. Over Risk-Free Rate | |
| | Constant | Coefficient | [a] |
| Book Value of Equity | 977 | -2.949% | 8.6% |
| 5-Yr. Avg. Net Income | 1,169 | -2.715% | 5.9% |
| Total Assets | 15,397 | -2.725% | 6.6% |
| 5-Yr. Avg. EBITDA | 4,957 | -2.709% | 5.6% |
| Total Revenue | 9,877 | -2.192% | 7.7% |
| # of Employees (not in mil.) | 24,000 | -2.210% | 8.0% |
| Median Equity Risk Premium Over Risk-Free Rate | | | 7.1% |
| Company-Specific Risk Premium | | | 2.0% |
| Indicated Cost of Equity Capital | | | 13.6% |
| Method #4: Build-Up Model | | | |
| Risk-Free Rate of return | | | 4.5% |
| General Equity Risk Premium | | | 7.2% |
| Industry Equity Risk Premium | | | 0.0% |
| Size Equity Risk Premium | | | 0.7% |
| Company-Specific Equity Risk Premium | | | 2.0% |
| Indicated Cost of Equity Capital | | | 14.3% |
| Selected Cost of Equity Capital | | | 14.0% |
| Cost of Debt Capital: | | | |
| Before Tax Cost of Debt Capital | | | 7.6% |
| Income Tax Rate | | | 3.7% |
| Selected Cost of Debt Capital | | | 4.8% |
| Weighted Average Cost of Capital Calculation: | | | |
| Selected Cost of Equity Capital | | | 14.0% |
| Multiplying by: Equity/Invested Capital | | | 70% |
| Equals: Weighted Cost of Equity Capital | | | 9.8% |
| | | | 10% |
| Selected Cost of Debt Capital | | | 4.8% |
| Multiplying by: Debt/Invested Capital | | | 30% |
| Equals: Weighted Cost of Debt Capital | | | 1.4% |
| Weighted Average Cost of Capital (rounded) | | | 11% |

[a] Estimated as the constant plus the coefficient multiplied by the log of the financial fundamental. Note: All data are hypothetical and are presented for illustrative purposes only.

2. An estimate of the intellectual-property-related income for each period in the projection, typically measured as either owner income (e.g., the licensor's license royalty income), operator income (e.g., some portion of the operator's practice or company or practitioner income), or both
3. An estimate of the appropriate present value discount rate or direct capitalization rate, typically measured as the required rate of return on an investment in the intellectual property

For purposes of the income approach, the UEL relates to the time period over which the professional practice or professional services company or individual practitioner expects to receive any income related to the intellectual property (1) license, (2) use, or (3) forbearance of use.

In addition to the term of the UEL, the analyst is also interested in the shape of the UEL curve. That is, the analyst is interested in the annual rate of decay of the expected future intellectual property income.

For purposes of the income approach, different intellectual property income measures may be relevant. If properly applied, each of these different income measures can be used in the income approach to derive a value indication.

Some of the different income measures include the following:

1. Gross or net revenue
2. Gross income (or gross profit)
3. Net operating income
4. Net income before tax
5. Net income after tax
6. Operating cash flow
7. Net cash flow
8. Incremental income
9. Differential income
10. Royalty income
11. Excess earnings income
12. Several others (such as incremental income)

Because there are different income measures that may be used in the income approach, it is important for the capitalization rate (either the present value discount rate or the direct capitalization rate) to be derived on a basis consistent with the income measure used.

Regardless of the measure of income considered in the income approach, there are several categories

of valuation methods that are typically applied to value professional practice intellectual property:

1. Valuation methods that quantify an incremental level of intellectual property income—that is, the practice or company or practitioner owner/operator will expect a greater level of revenue (however measured) by owning/operating the intellectual property as compared to not owning/operating the intellectual property.

Alternatively, the practice or company or practitioner owner/operator may expect a lower level of costs—such as capital costs, investment costs, or operating costs—by owning/operating the intellectual property as compared to not owning/operating the intellectual property.

2. Valuation methods that estimate a relief from a hypothetical license royalty expense payment—that is, these RFR methods estimate the amount of hypothetical royalty expense payment that the practice or company or practitioner owner/operator (as licensee) does not have to pay to a third-party licensor for the use of the intellectual property.

The practice or company owner/operator is “relieved” from having to pay this hypothetical license royalty expense payment for the use of the intellectual property. This is because the practice or company or practitioner owner/operator, in fact, owns the intellectual property.

3. Valuation methods that estimate a residual measure of intellectual property income—that is, these methods typically start with the owner/operator overall practice or company or practitioner income.

Next, the analyst identifies all of the tangible assets and routine intangible assets (other than the intellectual property) that are used in the practice or company or practitioner owner/operator overall business. These assets are typically called contributory assets.

The analyst then multiplies a fair rate of return times the value of each of the contributory assets. The product of this multiplication is the fair return on all of the contributory assets.

The analyst then subtracts the fair return on the contributory assets from the practice or company or practitioner owner/operator business enterprise total income. This residual (or excess) income is the

- income that is associated with the intellectual property.
4. Valuation methods that rely on a profit split—that is, these methods typically also start with the practice or company or practitioner owner/operator overall business enterprise income.

The analyst then allocates or “splits” this total income between:

- a. the owner/operator tangible assets and routine intangible assets and
- b. the intellectual property.

The profit split percent (e.g., 20 percent, 25 percent, etc.) to the intellectual property is typically based on the analyst’s functional analysis of the owner/operator business operations.

This functional analysis identifies the relative importance of (a) the intellectual property and (b) the contributory assets to the production of the owner/operator total practice or company income.

5. Valuation methods that quantify comparative income—that is, these methods compare the practice or company or practitioner owner/operator income to a benchmark measure of income (that, presumably, does not benefit from the use of the intellectual property).

Some of the typical benchmark income measures include:

- a. the owner/operator income before the intellectual property development,
- b. industry average income levels, or
- c. selected guideline publicly traded company income levels.

A common measure of income for these comparative analyses is the EBIT margin. This EBIT income is considered to be a pretax measure of operating income. When guideline publicly traded companies are used as the comparative income benchmark, the method is often called the CPM method.

All of these income approach valuation methods can be applied using either the direct capitalization procedure or the yield capitalization procedure.

In the direct capitalization procedure, the analyst:

1. estimates a normalized income measure for one future period (typically, one year) and

2. divides that measure by an appropriate investment rate of return.

The appropriate investment rate of return is called the direct capitalization rate. The direct capitalization rate may be derived for:

1. a perpetuity time period or
2. a specified finite time period.

This decision will depend on the analyst’s estimate of the intellectual property UEL.

Typically, the analyst concludes that the intellectual property has a finite UEL. In that case, the analyst may use the yield capitalization procedure over the intellectual property’s expected UEL. Or, the analyst may use the direct capitalization procedure with a limited life direct capitalization rate.

Mathematically, the limited life capitalization rate is typically based on a present value of annuity factor for the intellectual property UEL.

In the yield capitalization procedure, the analyst projects the appropriate income measure for several future time periods. The discrete time period is typically based on the intellectual property UEL.

This income projection 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—or yield capitalization rate—over the expected term of the income projection.

The result of either the direct capitalization procedure or the yield capitalization procedure is the income approach value indication for the professional practice or professional services company or individual practitioner intellectual property.

Income Approach Illustrative Example

Exhibit 10 presents a simplified illustrative example of the application of the income approach to intellectual property valuation. In this example, the analyst is asked to estimate the fair market value of the hypothetical pharmaceutical product patent developed by the research firm Gamma Partners (“Gamma”).

As described below, the Gamma patent is used to manufacture the Getwell pharmaceutical product.

The analyst is instructed that the appropriate valuation date for the intellectual property valuation is January 1, 2022.

The analyst decided to apply the income approach and the multiperiod excess earnings

Exhibit 10 (page 1 of 2)
Gamma Partners
Valuation of the Getwell Pharmaceutical Product Patent
Income Approach—Multiperiod Excess Earnings Method
As of January 1, 2022

| | Notes | Pro Forma Years | | | | | | | | | | | |
|---|---------|-----------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | | 12/31/22 | 12/31/23 | 12/31/24 | 12/31/25 | 12/31/26 | 12/31/27 | 12/31/28 | 12/31/29 | 12/31/30 | 12/31/31 | | |
| Valuation of the Getwell Product Patent | | \$000 | \$000 | \$000 | \$000 | \$000 | \$000 | \$000 | \$000 | \$000 | \$000 | \$000 | \$000 |
| Getwell Product Revenue | | 4,643,232 | 4,450,217 | 4,184,750 | 3,880,112 | 3,548,858 | 3,548,858 | 3,548,858 | 3,548,858 | 3,548,858 | 3,548,858 | 3,548,858 | 3,548,858 |
| Annual Growth Rate Percent | | -1.2% | -4.2% | -6.0% | -7.3% | -8.5% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% |
| Estimated Product Revenue Attrition Rate | 23% [a] | | | | | | | | | | | | |
| Revenue Attributable to the Getwell Product Patent | | 3,575,289 | 2,604,350 | 1,849,994 | 1,289,821 | 883,047 | 679,946 | 523,559 | 403,140 | 310,418 | 239,022 | | |
| Annual Growth Rate Percent | [b] | NA | -27.2% | -29.0% | -30.3% | -31.5% | -23.0% | -23.0% | -23.0% | -23.0% | -23.0% | -23.0% | -23.0% |
| EBITDA | [c] | 1,573,127 | 1,145,914 | 813,997 | 567,521 | 388,541 | 299,176 | 230,366 | 177,382 | 136,584 | 105,170 | | |
| EBITDA Margin | | 44% | 44% | 44% | 44% | 44% | 44% | 44% | 44% | 44% | 44% | | |
| Less: Depreciation/Amortization Expense | | 793,018 | 552,967 | 375,423 | 248,354 | 160,263 | 123,402 | 95,020 | 73,165 | 56,337 | 43,380 | | |
| Percentage of Revenue | [d] | 22.2% | 21.2% | 20.3% | 19.3% | 18.1% | 18.1% | 18.1% | 18.1% | 18.1% | 18.1% | | |
| EBIT | | 780,109 | 592,947 | 438,575 | 319,167 | 228,278 | 175,774 | 135,346 | 104,216 | 80,247 | 61,790 | | |
| EBIT Margin | | 21.8% | 22.8% | 23.7% | 24.7% | 25.9% | 25.9% | 25.9% | 25.9% | 25.9% | 25.9% | | |
| Less: Income Taxes @ 37% | | 288,640 | 219,390 | 162,273 | 118,092 | 84,463 | 65,036 | 50,078 | 38,560 | 29,691 | 22,862 | | |
| Net Income | | 491,469 | 373,557 | 276,302 | 201,075 | 143,815 | 110,738 | 85,268 | 65,656 | 50,556 | 38,928 | | |
| Net Income Margin | | 13.7% | 14.3% | 14.9% | 15.6% | 16.3% | 16.3% | 16.3% | 16.3% | 16.3% | 16.3% | | |
| Plus: Depreciation/Amortization Expense | | 793,018 | 552,967 | 375,423 | 248,354 | 160,263 | 123,402 | 95,020 | 73,165 | 56,337 | 43,380 | | |
| Less: Contributory Asset Charges: | | | | | | | | | | | | | |
| Working Capital CAC | [e] | 27,530 | 20,053 | 14,245 | 9,932 | 6,799 | 5,236 | 4,031 | 3,104 | 2,390 | 1,840 | | |
| Tangible Assets CAC | [f] | (823,022) | (599,454) | (425,589) | (296,467) | (202,736) | (156,107) | (120,202) | (92,556) | (71,268) | (54,876) | | |
| Routine Intangible Assets CAC | [g] | (164,756) | (123,965) | (91,524) | (66,472) | (47,625) | (36,671) | (28,237) | (21,742) | (16,742) | (12,891) | | |
| Equals: Patent-Related Excess Earnings | | 324,239 | 223,159 | 148,856 | 96,422 | 60,516 | 46,598 | 35,880 | 27,627 | 21,273 | 16,381 | | |
| Discounting Periods | [h] | 0.5000 | 1.5000 | 2.5000 | 3.5000 | 4.5000 | 5.5000 | 6.5000 | 7.5000 | 8.5000 | 9.5000 | | |
| Present Value Factor @ 11% | | 0.9492 | 0.8551 | 0.7704 | 0.6940 | 0.6252 | 0.5633 | 0.5075 | 0.4572 | 0.4119 | 0.3710 | | |
| Present Value of Patent-Related Excess Earnings | | 307,767 | 190,823 | 114,679 | 66,917 | 37,834 | 26,249 | 18,209 | 12,631 | 8,762 | 6,077 | | |
| Total Present Value of Patent-Related Excess Earnings (2022-2031) | | 789,949 | | | | | | | | | | | |
| Indicated Fair Market Value of the Getwell Product Patent (rounded) | | \$790,000 | | | | | | | | | | | |

**Exhibit 10 (page 2 of 2)
Gamma Partners
Valuation of the Getwell Pharmaceutical Product Patent
Income Approach—Multiperiod Excess Earnings Method
As of January 1, 2022**

Footnotes to Exhibit 10:

[a] Considers the historical weighted decay rates for the Getwell patented product revenue.

| Product Line | Three-Year Average | | |
|------------------------------------|--------------------|-------|-------|
| | 2019 | 2020 | 2021 |
| Weighted Annual Revenue Decay Rate | 23.4% | 23.6% | 23.3% |
| | | | 23.4% |

[b] Represents 77 percent of the Getwell product revenue in 2022 based on the estimated attrition rate. Thereafter, the product revenue is projected to decrease annually based on (1) the estimated attrition rate and (2) the negative annual growth rate.

[c] The projected 2026 EBITDA margin is maintained after 2026.

[d] The projected 2026 depreciation expense as a percent of revenue is maintained after 2026.

[e] Based on (1) working capital requirement for the product line and (2) the estimated return on working capital (based on the Gamma weighted average cost of capital).

| | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 |
|--|-----------|-----------|-----------|----------|----------|----------|----------|----------|----------|----------|
| Working Capital - % of the Gamma Consolidated Revenue | -7% | -7% | -7% | -7% | -7% | -7% | -7% | -7% | -7% | -7% |
| Working Capital Requirement (times the Getwell product line revenue) | (250,270) | (182,305) | (129,500) | (90,287) | (61,813) | (47,596) | (36,649) | (28,220) | (21,729) | (16,732) |
| Return on Working Capital | 11% | (20,053) | (14,245) | (9,932) | (6,799) | (5,236) | (4,031) | (3,104) | (2,390) | (1,840) |

[f] Equals the sum of projected capital expenditure allocated to the product line based on (1) percent of revenue and (2) the estimated return on tangible assets requirement (based on the Gamma weighted average cost of capital).

| | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 |
|---|-----------|-----------|-----------|-----------|---------|---------|---------|---------|---------|----------|
| Net Tangible Assets as % of the Gamma Consolidated Revenue (see Exhibit 11) | 113% | 113% | 113% | 113% | 113% | 113% | 113% | 113% | 113% | 113% |
| Tangible Assets Requirement (times the Getwell product line revenue) | 4,038,767 | 2,941,962 | 2,089,816 | 1,457,025 | 997,520 | 768,090 | 591,430 | 455,401 | 350,659 | 270,0070 |
| Return on Tangible Assets | 11% | 444,264 | 323,616 | 229,880 | 160,273 | 109,727 | 84,490 | 65,057 | 50,094 | 38,572 |
| | | | | | | | | | | 29,701 |

[g] The routine intangible assets contributory asset charge—as a percent of consolidated revenue—is multiplied by the revenue attributable to the Getwell patented product.

[h] Calculated as if all cash flow is received at midyear.

Note: All data are hypothetical and are presented for illustrative purposes only.

method. Because the patent product revenue is expected to change at a nonconstant rate over time, the analyst decided to apply the yield capitalization procedure.

Applying this procedure, this valuation method is often called the multiperiod excess earnings method (or “MEEM”).

The Gamma patent is used to manufacture the Getwell pharmaceutical product. Based on the remaining legal life of the patent and the product revenue decay rate (considering the effect of a competitive drug product), the analyst estimates a 10-year UEL for the patent.

Gamma management provided the analyst with a financial projection for the overall Gamma Partners and for the Getwell product. The analyst performed a revenue decay rate analysis related to the Getwell product in order to conclude a patent revenue growth rate (or, in this case, decay rate).

Exhibit 10 presents the projection of the product revenue and the product profit over its expected 10-year UEL. The analyst estimated an appropriate contributory asset charge on all of the Gamma contributory assets, including working capital assets, tangible assets, and routine (nonpatent) intangible assets.

This contributory asset charge (or “CAC”) analysis is summarized in Exhibit 11.

In order to limit the number of exhibits, let’s assume that Gamma has the same 11 percent cost of capital as presented in the previous Beta (market approach) example (see Exhibit 9). Accordingly, the analyst used 11 percent as the Gamma weighted average cost of capital—or present value discount rate.

Based on the income approach and MEEM valuation analysis summarized in Exhibit 10, the analyst estimated that the fair market value of the hypothetical Gamma patent on the Getwell pharmaceutical product was \$790 million, as of January 1, 2022.

Valuation Synthesis and Conclusion Procedures

In the intellectual property valuation synthesis and conclusion process, the analyst typically considers the following question: Does the selected valuation approach(es) and valuation method(s) accomplish the analyst’s professional-practice-related assignment?

The analyst should also consider if the selected valuation approach and valuation method analyzes the appropriate intellectual property bundle of legal rights.

The analyst should consider if there were sufficient empirical data available to perform the selected valuation approach and valuation method. That is, the valuation synthesis should consider if there were sufficient data available to make the analyst comfortable with the analysis conclusion.

And, the analyst should consider if the selected valuation approach and valuation method will be understandable to the intended audience for the professional practice intellectual property valuation.

ANALYST CAVEATS FOR DEVELOPING INTELLECTUAL PROPERTY VALUATIONS

The analyst may consider the following practical caveats with regard to the development of the professional practice intellectual property valuations:

1. The analyst may accept legal counsel’s advice and instructions. The analyst should also:
 - document all of the legal counsel’s instructions,
 - document all of the legal counsel’s definitions of technical legal terms,
 - not practice law without a license, and
 - let the legal counsel take responsibility for all legal issues related to all legal matters.
2. Legal counsel is not always totally forthcoming with the analyst. The analyst should also:
 - be aware of any “creeping commitments” (or unintended expansions) regarding the scope of work in the analyst’s engagement and
 - be aware of any legal counsel-imposed limitations on the analyst regarding access to all of the documents in the case.
3. The analyst should document, document, document—both in the valuation workpapers and in the valuation report. In particular, the analyst may:
 - document all professional practice management and other party interviews;
 - document all functional analysis and due diligence procedures performed;
 - document why the analyst selected or rejected each valuation method that was considered in the analysis;

Exhibit 11
Gamma Partners
Valuation of the Getwell Pharmaceutical Patent
Income Approach—Multiperiod Excess Earnings Method
Contributory Asset Charge Analysis
As of January 1, 2022

| | FYE | | | | |
|---|--------------------|-----------------------------------|---------------|-----------|-----------|
| <u>Tangible Assets Contributory Asset Charge:</u> | 12/31/21 | | | | |
| | (\$000) | | | | |
| Beginning Tangible Assets [a] | 12,034,000 | | | | |
| Capital Expenditures [a] | 1,162,971 | | | | |
| Depreciation Expense [a] | <u>(2,249,209)</u> | | | | |
| Net Tangible Assets | 10,947,762 | | | | |
| Gamma Consolidated Revenue [a] | 9,691,426 | | | | |
| Net Tangible Assets as % of Gamma Consolidated Revenue | 113% | | | | |
| <u>Routine Intangible Assets Contributory Asset Charge:</u> | Fair Market Value | Estimated Required Rate of Return | Annual Return | | |
| | (\$000) | | (\$000) | | |
| | [a] | [b] | | | |
| Trademarks/Trade Names | 970,000 | 11% | 106,700 | | |
| Internally Developed Computer Software | 2,510,000 | 11% | 276,100 | | |
| Trained and Assembled Workforce | 580,000 | 11% | <u>63,800</u> | | |
| Total Contributory Intangible Assets | | | 446,600 | | |
| | 12/31/22 | 12/31/23 | 12/31/24 | 12/31/25 | 12/31/26 |
| | (\$000) | | | | |
| Gamma Consolidated Revenue [a] | 9,691,426 | 9,382,534 | 9,027,219 | 8,665,762 | 8,280,712 |
| Intangible Assets Contributory Asset Charge (from the above analysis) | 446,600 | 446,600 | 446,600 | 446,600 | 446,600 |
| Intangible Asset Contributory Asset Charge as % of Gamma Consolidated Revenue | 4.6% | 4.8% | 4.9% | 5.2% | 5.4% |

[a] From the Gamma business plan.

[b] Based on the Gamma weighted average cost of capital.

Note: All data are hypothetical and are presented for illustrative purposes only.

- document why the analyst selected or rejected each valuation variable that was considered in the analysis;
 - document why the analyst selected or rejected each set of financial projections that was relied on (or not relied on) in the analysis; and
 - use contemporaneously prepared financial projections relied on by others (including management), if possible, and not use financial projections prepared after the announcement of litigation (if possible).
4. The analyst should use generally accepted valuation approaches, methods, and procedures in the intellectual property valuation.
- In particular, the analyst typically should not:
- apply de novo valuation methods (or apply de novo valuation method naming conventions) and

- rely on “rules of thumb” pricing methods to achieve specific value indications to include in the final value conclusion.
5. The analyst should use confirmatory valuation approaches and methods in the intellectual property analysis.
 - In particular, the analyst may:
 - explain the valuation synthesis and conclusion process and
 - explain the quantitative (or qualitative) value conclusion process so that it is replicable, transparent, and auditable.
 - 6.. The analyst should use confirmatory source documents, if possible; in particular, the analyst may:
 - look for confirmatory source documents;
 - look for contradictory source documents;
 - explain the process and reasoning for selecting the specific source documents relied on;
 - look at and consider all source documents that are made available to the analyst in discovery or otherwise; and
 - avoid wearing “hindsight blinders”—that is, the process of excluding post-valuation date documents that contain prevaluation date information.
 7. The analyst should consider all professional practice intangible assets in the valuation analysis. In addition, the analyst should consider all professional practice contingent liabilities in the valuation analysis.
 8. The analyst should consider the expected income tax effects in all of the intellectual property valuation analyses.
 - In that consideration, the analyst may:
 - consult with an independent income tax expert, if one is needed, and
 - consult with an income tax expert colleague, if one is available.
 9. In professional-practice-related litigation, the analyst should be mindful that “your expert report is your best friend.”
 - The analyst should also be mindful that:
 - the analyst’s report should be clear, convincing, and cogent;
 - the analyst’s report should be replicable and transparent;
 - the analyst’s report should be adequately supported with source documents; and
 - the analyst should also be mindful of the expert report caution that “If it’s not documented in the expert report, you didn’t do it.”
 10. The analyst should know his or her own technical limitations in performing the intellectual property valuation. That is, the analyst should rely on third-party specialists for input into the intellectual property valuation, when needed.
 - Such third-party specialists may include:
 - industry experts,
 - tax accounting experts,
 - financing accounting experts,
 - real estate appraisal experts,
 - personal property appraisal experts, and
 - other experts.

INTELLECTUAL PROPERTY VALUATION REPORT WRITING GUIDELINES

There are numerous objectives of a professional-practice-related intellectual property valuation report. Of course, the analyst wants to persuade the report reader (whether the reader is a judge or other finder of fact). The analyst also wants to defend the intellectual property value conclusion.

In order to accomplish these objectives, the content and format of the valuation report should demonstrate that the analyst:

1. understood the specific intellectual property valuation assignment;
2. understood the owner/operator’s intellectual property and the owner/operator’s bundle of legal rights;
3. collected sufficient intellectual property financial and operational data;
4. collected sufficient industry, market, and competitive data;
5. documented the specific owner/operator’s intellectual property economic benefits;
6. performed adequate due diligence procedures related to all available data;
7. selected and applied all applicable income-, market-, and cost-approach valuation methods; and
8. reconciled all value indications into a final intellectual property analysis conclusion.

The final procedure in the intellectual property analysis is for the analyst to defend the value conclusion in a replicable and well-documented valuation report. The written intellectual property valuation report should:

1. explain the intellectual property valuation assignment;
2. describe the professional practice or company or practitioner intellectual property and the subject bundle of legal rights;
3. explain the selection or rejection of all generally accepted intellectual property valuation approaches and methods;
4. explain the selection and application of all specific analysis procedures;
5. describe the analyst's data gathering, functional analysis, and due diligence procedures;
6. list all documents and data considered by the analyst;
7. include copies of all documents that were specifically relied on by the analyst;
8. summarize all of the qualitative analyses performed;
9. include schedules and exhibits documenting all of the quantitative analyses performed;
10. avoid any unexplained or unsourced valuation variables or analysis assumptions; and
11. allow the report reader to be able to replicate all of the analyses performed.

In order to encourage the reader's acceptance of the intellectual property valuation report conclusion, the report should be:

1. clear, convincing, and cogent;
2. well organized, well written, and well presented; and
3. free of grammar, punctuation, spelling, and mathematical errors.

In summary, the effective (i.e., persuasive) intellectual property valuation report will tell a narrative story that:

1. defines the analyst's assignment;
2. describes the analyst's data gathering, functional analysis, and due diligence procedures;
3. justifies the analyst's selection of the generally accepted intellectual property valuation approaches, methods, and procedures;
4. explains how the analyst performed the valuation synthesis and reached the final value conclusion; and
5. defends the analyst's intellectual property value conclusion.

SUMMARY AND CONCLUSION

A valuation analyst may be called on to value the professional practice or professional services company or individual practitioner intellectual property for a variety of accounting, taxation, and other reasons.

A damages analyst may be called on to measure the damages suffered by a professional practices or professional services company or individual practitioner intellectual property.

And, a transfer price analyst may be called on to determine the arm's-length transfer price related to the professional practice or professional services company or individual practitioner intellectual property.

This discussion summarized many of the general reasons (and some of the family-law-related reasons) for valuing the professional practice intellectual property.

This discussion also summarized and illustrated the generally accepted professional practice intellectual property valuation approaches, methods, and procedures.

In addition, this discussion summarized many analyst caveats related to developing the intellectual property valuation analysis—including a description of:

1. many of the frequently referenced data sources and
2. many of the typical functional analysis and due diligence procedures.

The final procedure in the professional practice intellectual property valuation is the preparation of a clear, convincing, and cogent valuation report.

This discussion summarized many of the attributes related to an effective (i.e., persuasive) intellectual property valuation report. These attributes also relate to the presentation of effective valuation expert testimony with regard to disputes involving professional practice, professional services company, or individual practitioner intellectual property.



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Valuation of Professional Licenses and Other Individual Intangible Assets

Nathan P. Novak and Robert F. Reilly, CPA

As individuals, many practitioners need to hold licenses in order to provide their professional services, including practitioners of law, medicine, accountancy, and many other professions. In addition to government-issued professional licenses, these professional practitioners may also own and operate other individual intangible assets, including client relationships, services names and service marks, affiliation and other agreements, and many others. As entities, professional practices and professional services companies typically own and operate practice licenses and other intangible assets. Such other intangible assets may include client relationships and contracts, client and other files and records, an assembled workforce, employment and noncompete agreements, trademarks and trade names, and various permits and contracts. Valuation specialists are often asked to value these practitioner or entity licenses and other intangible assets for various regulatory, accounting, taxation, transaction, financing, litigation, or other reasons. This discussion describes many of those reasons. This discussion summarizes the relevant generally accepted valuation approaches, methods, and procedures. And, this discussion illustrates the application of those generally accepted valuation approaches and methods through several simplified illustrative examples.

INTRODUCTION

There are numerous reasons why a valuation analyst (“analyst”) may be asked to value either an individual practitioner’s professional license or the intangible assets of a professional practice or professional services company. Such practitioner or professional practice intangible assets are sometimes referred to as discrete intangible assets or as identifiable intangible assets.

These terms are often applied to distinguish these intangible assets from the general goodwill and reputation of the individual practitioner or of the professional practice entity.

First, the individual professional practitioner may directly own an intangible asset. This situation typically occurs when the practitioner personally develops and owns an intangible asset such as a

client relationship, a proprietary technology, internally developed computer software, a trade secret, a license or permit, an employment or a noncompete agreement, or other contract right.

For some intangible assets, the individual practitioner may outbound license the personally owned intangible asset (such as a trade secret) to a business enterprise (e.g., to generate license fee or royalty income). For other intangible assets (such as a license), the practitioner may personally operate the intangible asset (e.g., to generate professional services income).

Second, the individual professional practitioner may indirectly own an intangible asset. This situation typically occurs when one practitioner owns an equity interest in a private professional services company or professional practice. This

situation applies whether the professional practice or professional services company is a corporation, limited liability company, partnership, or some other form of organization.

Virtually all professional practices and professional services companies own and operate individual intangible assets. In most professions, these intangible assets materially contribute to the overall professional services company value. In many cases, these individual intangible assets directly generate either license income or operating income for the private professional services company or professional practice.

Third, the individual professional practitioner may develop (and own) intangible asset value that is separate from the tangible asset value and the intangible asset value that is owned by the professional services company or professional practice. For example, the individual practitioner may develop his or her own client relationships, supplier relationships, banking relationships, systems and procedures, trade secrets, or technical expertise.

The professional services company or professional practice may use these personally owned intangible assets in its daily business operations. However, if the company or practice was sold, the entity itself would have its own valuable institutional goodwill. This intangible asset value would be included in the business equity (e.g., stock, limited liability company interests, or partnership units) sale price.

In addition, if the professional services company or professional practice was sold, the individual practitioner may also have his or her own valuable goodwill. This intangible asset value may be included in payments related to a future employment agreement, consulting agreement, noncompete agreement, and so on.

Fourth, an individual professional practitioner will often own and operate intangible assets—either directly or indirectly (through a professional practice). Such professional practitioner intangible assets may include professional licenses and permits, client relationships, client files and records, practice trademarks and trade names, referral relationships from other practitioners, institutional contractual relationships (e.g., with hospitals), and personal goodwill (defined, for this purpose only, as excess earnings capacity).

Accordingly, analysts are often asked to value either the professional practice's or the individual practitioner's intangible assets for various purposes.

This discussion summarizes the typical categories of professional practitioner intangible assets, the different types of intangible asset valuation

analyses, and the various reasons to develop intangible asset valuation analyses.

This discussion also summarizes the typical economic characteristics of the professional practice or individual practitioner intangible assets.

Finally, this discussion summarizes the generally accepted valuation approaches, methods, and procedures with respect to professional practice or individual practitioner intangible assets. These generally accepted intangible asset valuation approaches and methods are also presented through simple illustrative examples.

PROFESSIONAL PRACTITIONER INTANGIBLE ASSET CATEGORIES

The value of a professional practitioner's intangible asset comes from the legal rights, the intellectual content, and the expected economic benefits associated with that intangible asset. Like all assets (both tangible and intangible), a professional practitioner's intangible asset can be owned and can have value.

Related to both individual practitioners and to professional practices, the four typical intangible asset categories are summarized below.

1. **Financial Assets.** Most analysts are familiar with financial assets. Typical examples of financial assets include cash, accounts and notes receivable, stocks and bonds, and other negotiable investment securities.

When such financial assets are owned by a professional practice or a professional services company, these intangible assets are recorded as "current assets" for financial statement presentation purposes.

2. **General Intangible Assets.** This second category includes most other commercial intangible assets.

Because this category is quite broad, most practitioner's intangible personal property and intangible real property assets are classified as general intangible assets.

3. **Intellectual Property.** Intellectual property assets are distinguished by their special legal recognition and specific legal rights.

There are four types (or categories) of individual practitioner or professional practice intellectual property: trademarks, patents, copyrights, and trade secrets.

4. **Intangible Value in the Nature of Goodwill.** Intangible value in the nature of goodwill is often considered to be a residual intangible asset. That is, for valuation and other

economic analysis purposes, goodwill is often quantified as the intangible value component of a professional practice or professional services company entity (of whatever legal form) that cannot be specifically assigned to, or identified with, any of the other three types of intangible assets.

Like the other intangible asset categories, professional practice goodwill—and the individual practitioner’s personal goodwill—can be owned and can have value.

There is no single list of all generally accepted intangible assets that may be owned by an individual practitioner or a professional practice. Analysts may refer to various lists of intangible assets for different valuation purposes.

For various financial accounting purposes, analysts may refer to the Financial Accounting Standards Board (“FASB”) Accounting Standards Codification (“ASC”) topic 805, *Business Combinations*, or the International Financial Reporting Standards No. 3R, *Business Combinations*, listing of identifiable intangible assets.

For various taxation purposes, analysts may refer to the intangible asset listings in Internal Revenue Code Sections 197 and 482.

For various litigation purposes, analysts may refer to the intangible asset listing in the textbook, *Guide to Intangible Asset Valuation* by Robert Reilly and Robert Schweihs, published by the AICPA in 2014.

When performing a valuation of the practitioner’s or the practice’s intangible assets, the analyst may group individual intangible assets into categories. The intangible assets included in each category are generally similar in nature and in function. In addition, the intangible assets within each category often possess similar economic characteristics.

Also, intangible assets are typically placed in the same category when similar valuation methods apply to that intangible asset type.

Analysts often group individual practitioner or professional practice intangible assets into the following categories:

1. Technology-related (e.g., proprietary technology, patents, technical know-how)
2. Customer-related (e.g., customer lists, customer contracts)
3. Contract-related (e.g., exclusive rights agreements, favorable supplier contracts, technology-sharing agreements, franchise agreements)

4. Data-processing-related (e.g., computer software, automated databases)
5. Human-capital-related (e.g., trained and assembled workforce, noncompete covenants, employment agreements)
6. Marketing-related (e.g., advertising materials, marketing brochures and materials)
7. Location-related (e.g., leasehold interests, mineral or mining exploration rights)
8. License-related (e.g., operational or environmental licenses or permits, pollution-control permits)
9. Artistic-related (e.g., literary works and other compositions)
10. Engineering-related (e.g., engineering drawings and schematics, blueprints, proprietary documentation)
11. Intellectual-property-related (e.g., patents, trademarks, copyrights, and trade secrets)
12. Goodwill-related (e.g., goodwill and going concern value)

This intangible asset categorization is presented for illustrative purposes only. It does not represent any particular financial accounting, income tax, family law, or other authority.

Further, assigning an asset to a particular intangible asset category does not affect the value conclusion. In other words, the economic attributes of the practitioner’s or the practice’s intangible asset do not change based on how that intangible asset is categorized.

There are also intangible asset categorizations that are appropriate for financial accounting and income tax accounting. For example, the ASC topic 805-20-10 identifies the following five intangible asset categories that are recognized under U.S. generally accepted accounting principles (“GAAP”) for acquisition accounting purposes:

1. Marketing-related (e.g., trademarks, trade dress, newspaper mastheads, Internet domain names, noncompetition agreements)
2. Customer-related (e.g., customer lists, order or production backlog, customer contracts and related customer relationships, noncontractual customer relationships)
3. Artistic-related (e.g., plays, operas, ballets; books, magazines, newspapers, other literary works; musical works, such as compositions, song lyrics, advertising jingles;

- pictures, photographs; video and audiovisual material, including motion pictures or films, music videos, television programs)
4. Contract-related (e.g., licensing, royalty, standstill agreements; advertising, construction, management, service or supply contracts; lease agreements (whether the acquiree is the lessee or the lessor); construction permits; franchise agreements; operating and broadcast rights; servicing contracts, such as mortgage servicing contracts; employment contracts; use rights, such as drilling, water, air, timber-cutting, route authorities)
 5. Technology-based (e.g., patented technology; computer software and mask works; unpatented technology; databases, including title plants and trade secrets, such as secret formulas, processes, recipes)

The above ASC 805 list of intangible assets can also be applied for various GAAP fair value measurement purposes. However, the FASB categorization of intangible assets is different from the categorization recognized by the Internal Revenue Service for business acquisition purchase accounting purposes.

The income-tax-related intangible asset categorization that follows is presented in Internal Revenue Code Section 197 (26 U.S.C. 197 (d)(1)):

1. Goodwill
2. Going-concern value
3. Any of the following items:
 - a. Workforce in place including its composition and terms and conditions (contractual or otherwise) of its employment
 - b. Business books and records, operating systems, or any other information base (including lists or other information with respect to current or prospective customers)
 - c. Any patent, copyright, formula, process, design, pattern, know-how, format, or other similar item
 - d. Any customer-based intangible
 - e. Any supplier-based intangible
 - f. Any other similar item

As these various lists illustrate, there are several alternative ways to categorize a practitioner's intangible assets. The important point is that both the valuation profession and various governmental and regulatory authorities recognize the existence

of individual intangible assets. And, each of these parties has developed an intangible asset categorization process to help it organize and analyze these individual intangible assets.

Exhibit 1 presents a list of individual practitioner or professional practice/professional services company intangible assets (both intangible real property and intangible personal property), that may be subject to valuation. This exhibit is not intended to provide an exhaustive list of all individual practitioner or professional practice intangible assets.

TYPES OF PROFESSIONAL PRACTICE INTANGIBLE ASSET ANALYSES

While there are numerous individual types of individual practitioner or professional practice intangible asset analyses, all of these analyses may be grouped into the following five categories:

1. Valuation—Estimates a defined value of a specified intangible asset ownership interest as of a specific date. The defined value may be fair value, fair market value, investment value, use value, collateral value, owner value, etc.

This type of analysis typically includes consideration of the three generally accepted intangible asset valuation approaches: the cost approach, the income approach, and the market approach.

2. Transfer Price—Measures a third-party license royalty rate or an intercompany transfer price for the use of an intangible asset. The fair, arm's-length standard is the typical (but not the only) transfer pricing standard.

The royalty rate or transfer price is usually set for a limited term or time period (e.g., 1, 5, or 10 years).

3. Lifing—Quantifies the intangible asset expected useful economic life ("UEL"), the periodic rate of obsolescence or value decrease, and/or the residual value (say, at the end of a license agreement).
4. Damages—Measures the amount of lost profits or other measure of economic damages associated with a specific damages event that affected the practitioner or the professional practice intangible asset.

The damages amount may be expressed as a dollar amount or as a royalty rate. The dollar amount would then be incorporated into a judicial award or a negotiated litigation settlement. The royalty rate damages

INTANGIBLE PERSONAL PROPERTY ASSETS

Financial Assets

Options, warrants, grants, rights—related to securities

General Intangible Assets

| | | | |
|--|---|--|--|
| Advertising campaigns and programs | Customer lists | Governmental registrations (and exemptions) Historical documents | Prizes and awards (related to professional recognition) |
| Agreements | Customer relationships | HMO enrollment lists | Production backlogs |
| Airport gates and landing slots | Designs, patterns, diagrams, schematics, technical drawings | Insurance expirations | Proposals outstanding, related to contracts, customers, and so on |
| Appraisal plants (files and records) | Development rights | Insurance in force | Regulatory approvals (or exemptions from regulatory requirements) |
| Awards and judgments (legal) | Distribution networks | Joint ventures | Retail shelf space |
| Bank customers—deposit, loan, trust, credit card, and such | Distribution rights | Laboratory notebooks | Royalty agreements |
| Blueprints and drawings | Employment contracts | Landing rights (for airlines) | Shareholder agreements |
| Book and other publication libraries | Engineering drawings and related documentation | Licenses—professional, business, and so forth | Solicitation rights |
| Broadcast licenses (e.g., radio, television) | Environmental rights (and exemptions) | Literary works | Subscription lists (for magazines, services, and such) |
| Buy-sell agreements | FCC licenses for radio bands (cellular telephone, paging, and the like) | Litigation awards and damage claims | Supplier contracts |
| Certificates of need for healthcare institutions | Favorable financing | Loan portfolios | Technical and specialty libraries (books, records, drawings, and the like) |
| Chemical formulations | Film libraries | Management contracts | Technical documentation |
| Claims (against insurers and similar parties) | Food flavoring and food product recipes | Marketing and promotional materials | Technology-sharing agreements |
| Computer software (both internally developed and externally purchased) | Franchise agreements (commercial) | Masks and masters (for integrated circuits) | Title plants |
| Computerized databases | Franchise ordinances (governmental) | Medical (and other professional) charts and records | Trained and assembled workforce |
| Contracts | Manual (versus automated) databases | Newspaper morgue files | Training manuals and related educational materials, courses, and programs |
| Cooperative agreements | Government contracts | Noncompete covenants | |
| Credit information files | Government programs | Nondiversion agreements | |
| Customer contracts | | Open-to-ship customer orders | |
| | | Permits | |
| | | Prescription drug files | |

| Intellectual Property | | | |
|--|----------------------------------|---|--|
| Brand names and logos | Manuscripts | Procedure (“how we do things here”) manuals and related documentation | Proprietary products—and related technical documentation |
| Copyrights | Musical compositions | Product designs | Proprietary technology—and related technical documentation |
| Development rights—intellectual property | Patent applications | Proprietary processes—and related technical documentation | Trade secrets |
| Know-how and associated procedural documentation | Patents—both product and process | | Trademarks and trade names |
| Goodwill Intangible Assets | | | |
| Going-concern value (and immediate use value) | | Goodwill—personal | |
| Goodwill—institutional | | Goodwill—professional | |
| | | Personality contracts | |
| INTANGIBLE REAL PROPERTY ASSETS | | | |
| General Intangible Assets | | | |
| Development rights—land and other real estate | | Mineral extraction rights | |
| Easements | | Natural resources | |
| Favorable leases | | Ore and mineral deposit database | |
| Leasehold estates | | Possessory interest | |
| Leasehold interests | | Real property use rights | |
| Location value | | Use rights—air, water, land | |

conclusion would be applied against the damaging party’s revenue in order to calculate a periodic damages payment (in the form of a royalty payment). The royalty payment is paid by the damaging party to the damaged party.

In order to measure the amount of lost profits suffered by the damaged party, this type of intangible asset analysis typically includes consideration of:

- a. the “but for” projection method,
 - b. the yardstick method,
 - c. the before and after method, and
 - d. similar damages measurement methods.
5. Fairness—Assesses the absolute and/or relative fairness of a proposed or actual intangible asset transfer transaction. The transaction may include a sale, license, or other type of transfer.

This analysis usually considers both the price and the terms of the transaction. This intangible asset analysis usually specifies fairness to an identified party (e.g., to the buyer, seller, licensor, licensee, debtor, creditor, joint venturer, etc.).

Analysts typically use the same general economic principles to develop each of these different types of economic analyses.

REASONS TO VALUE PRACTITIONER OR PROFESSIONAL PRACTICE INTANGIBLE ASSETS

While there are many reasons to perform valuation analysis of the individual practitioner’s or the

professional practice's individual intangible asset. Most of these reasons can be grouped into the following 10 categories:

1. Sale/license transaction pricing and structuring
2. Intercompany use and ownership transfers
3. Financial accounting and reporting
4. Taxation planning and compliance
5. Financing collateralization and securitization
6. Infringement (and related) litigation claims and dispute resolution
7. Management information and strategic planning
8. Corporate governance and regulatory/contractual compliance
9. Bankruptcy, restructuring, and reorganization analysis
10. License, joint venture, and other development or commercialization opportunities

Each of these 10 categories of reasons to conduct the valuation is further explained below.

Transaction Pricing and Structuring

Practitioner or practice/company intangible asset owners/operators often need assistance with regard to negotiating and/or designing an intangible asset license or sale transaction. Such transactions may involve:

1. the license/sale of an individual intangible asset (often called a "naked" sale) or
2. the license/sale of a portfolio of related intangible assets (e.g., all of the intangible assets of a product line).

Some of the individual analyses related to this category include the following:

- Negotiating, pricing, and structuring the sale transaction
- Negotiating and structuring the terms of a license (e.g., royalty rate, product and geography limitations, contract term, sublicense rights, etc.)
- Providing a fairness opinion regarding the sale/license (related to price and terms)
- Providing a private inurement or excess benefits opinion regarding a sale/license involving a not-for-profit institution

Intercompany Transfer Price

Practice or practitioner intangible asset owners/operators often need assistance with the intercompany sale or license of intangible assets. These transfers can relate to product/service cost accounting, management information, state income tax, and federal income tax issues.

Such a transfer price may be important to a parent professional practice or services company when, for example, business unit Alpha owns (and developed) a patent, trademark, software, and so on, and business unit Beta uses the intangible asset to produce and sell a product.

This type of analysis answers the following question: How much does Beta have to pay Alpha for the right to use (or for the ownership transfer of) Alpha's intangible assets?

Some of these related analyses include the following:

- The cost accounting allocation for the intercompany use of an intangible assets
- The transfer of the intangible asset to a holding company (in a low/no income tax state) for purposes of licensing the intangible asset to sister operating companies or professional practices (in high income tax states)
- The transfer the use of intangible assets between a U.S. taxpayer company and a controlled foreign taxpayer company (whether an inbound or outbound transfer of the intangible asset use).

The Treasury Regulations related to Internal Revenue Code Section 482 provide for very specific transfer price methods to be used for this purpose. These transfer price measurement methods include:

1. the cost plus method,
 2. the comparable profit margin method, and
 3. several profit split methods
- The transfer of ownership of an intangible asset between a U.S. taxpayer company and a controlled foreign taxpayer company (which often involves an intangible asset transfer from the United States to a low/no income tax rate country)
 - The intercompany use of an intangible asset between a wholly owned subsidiary and a non-wholly-owned subsidiary (where non-controlling stockholders may want assurance regarding the fairness of the intercompany transfer price)

Financial Accounting

Most individual practitioner or professional practice intangible asset owner/operators are familiar with the fair value measurement of intangible assets for GAAP-related reasons.

Some of these financial accounting and fair value measurement reasons include the following:

- Acquisition accounting allocation of transaction purchase price
- Periodic testing for the impairment of acquired goodwill and other intangible assets
- Periodic testing for the impairment of long-lived (i.e., amortizable) intangible assets
- Fresh start accounting for a reorganized company emerging from bankruptcy
- Recording the owners' intangible asset contributions to a new business formation

Taxation Planning and Compliance

In addition to the intercompany transfer price considerations mentioned above, the professional practice or individual practitioner intangible asset owners may need to value the intangible asset for various federal, state, and local taxation purposes:

- Federal income tax purposes include charitable contribution deductions, worthless security deductions (e.g., of an intellectual property holding company), basis of the intangible asset contributed to/distributed from a partnership, basis and amortization deductions related to a business purchase price allocation, and other reasons.
- Federal gift and estate tax purposes often relate to lifetime transfers of—or a decedent's personal ownership in—intellectual property. This type of analysis also relates to the transfer of an ownership in a professional practice or a professional services company where the entity value depends on the intangible asset).
- State and local property tax purposes relate to jurisdictions where the practitioner's or the practice's intangible asset is either specifically exempt from—or is specifically subject to—property taxation.

Financing Transactions

Particularly during periods of tight credit, the individual practitioner or the professional practice may use the intangible asset as a source of collateral for various types of financing transactions.

The related analyses include the following:

- Collateral valuations (of the intangible asset and/or of related licenses) for cash-flow-based financing and for asset-based financing
- Current value valuations and terminal value valuations for sale/license-back financings
- Solvency opinions (of a debtor company) prepared for creditors to avoid fraudulent conveyance claims

Litigation Claims

Individual practitioners and professional practices (and their legal counsel) may retain analysts to perform lost profits and other damages measurement analyses (e.g., market analyses for conveyed products, analysis of mitigation actions, etc.) for the following purposes:

- Intellectual property infringement
- Breach of supply, services, purchase, or other commercial contract
- Breach of noncompete or confidentiality agreement
- Dissipation of corporate assets/shareholder oppression claims
- Eminent domain and condemnation disputes
- Intellectual property license agreement disputes
- Breach of development, commercialization, or joint venture agreements
- Shareholder (or member or partner) disputes related to professional practices or professional services firms
- Lender liability disputes
- Fraud and misrepresentation related to mergers and acquisitions

Management Information and Planning

Individual practitioners and professional practice owners need to know what intangible assets they own so they can develop plans to maximize the value of these assets.

These analyses may include the following:

- Inventory and valuation of intangible assets to identify financing, licensing, spin-off, or other commercial opportunities
- UEL estimates to assess reasonableness of long-term strategic plan assumptions

- Development of executive compensation incentive plans, based on intangible asset valuations, return on investment (“ROI”) calculations, and related factors
- Reasonableness of an intangible asset sale/license transactions between the practice and an insider (e.g., a practitioner, director, executive, controlling stockholder)

Corporate Governance and Regulatory Compliance

In the post-Sarbanes-Oxley environment, practice managements are concerned about the governance of all corporate assets (both tangible and intangible). And, not-for-profit organization managements are also concerned about income tax and regulatory compliance issues.

These issues may include the following:

- Valuation of intangible assets to assess the reasonableness of business interruption and other insurance coverage
- Inventory of intangible assets to document accounting control and protection of all practice assets
- Fair market value appraisals of all intangible assets bought or sold by a not-for-profit entity
- Fair market value appraisals of all intangible assets licensed by/to (or of services provided by/to) a not-for-profit entity

Bankruptcy and Reorganization

Interested parties may include the debtor-in-possession (“DIP”), DIP financing sources, various creditors and creditor committees, their respective legal counsel, the bankruptcy trustee, potential licensors/licensees, and other parties.

These parties are typically concerned about the value of their claims, maximizing cash flow opportunities, the fairness of transactions in the bankruptcy estate, and (perhaps) the reasonableness of a proposed reorganization plan.

These issues may involve the following:

- Valuation of any intangible asset that serves as a creditor’s collateral
- Valuation of any intangible asset included in a solvency analysis with respect to preference and fraudulent conveyance claims
- Identification of cash flow generation license or spin-off opportunities
- Assessment of the fairness of DIP intangible asset sales/licenses

- Analysis of the effect on intangible assets of the proposed plan of reorganization
- Implementation of post-bankruptcy fresh start accounting, according to FASB ASC topic 852-10-45 *Reorganizations*

License and Other Commercialization Opportunities

Practice or practitioner intangible asset owners/operators may need help identifying intangible asset license and commercialization opportunities. Practice or practitioner intangible asset owners need help to analyze the costs and the benefits associated with such potential opportunities.

These cost/benefit analyses include the following:

- Analysis of the costs (e.g., future commitments) and benefits (e.g., license royalties) of a proposed license agreement
- Analysis of the costs and benefits (in terms of risk and ROI) of a proposed joint venture (“JV”) development agreement—typically compared to an independent intangible asset development plan.

The analysis typically includes consideration of:

1. the intangible asset contributions to the JV formation and
2. the intangible asset distributions from the JV dissolution.

- Analysis of the costs and benefits of a third-party development or commercialization agreement, where one party to the agreement owns the intangible asset and the other party to the agreement operates the intangible asset
- Alternative analyses of various agreement terms and conditions (e.g., up-front payments, milestone payments, royalty rates, territories covered, products covered, required development/promotion expenditures, contract periods, residual values, etc.)

INTELLECTUAL PROPERTY

The main difference between intellectual property and general commercial intangible assets is that intellectual property is consciously and creatively produced. General commercial intangible assets tend to develop naturally in the regular course of business.

For example, an intellectual property could be a logo designed for a professional practice or professional services company. That practice or company logo would qualify as a trademark (or a service mark). That same practice or company may also own general intangible assets such as supplier relationships and supplier contracts related to purchased goods and services.

Client relationships, client contracts, and general goodwill are examples of intangible assets that do not qualify as intellectual property. No specific design or artistic creativity went into creating such general intangible assets.

On the other hand, a patent on a production process, a trademark on a new product (or a service mark on a new service), a copyright on a design, and secret knowledge of the formula recipe for a food product are all examples of intellectual property.

Of course, these illustrative intellectual property examples also qualify as intangible assets.

INTELLECTUAL PROPERTY DEVELOPMENT PROCESS

The development process is different for each kind of intellectual property. Patents frequently relate to an invention of some kind. The inventor may have been trying to create something new or to improve on something that already existed. A discovery of a new invention or process could be accidental. As long as the invention is novel and nonobvious, it may qualify to be patented.

A trademark arises out of a conscious effort to create a mark that will distinguish one product or business enterprise from all others. A trademark can be “a distinctive word, phrase, logo, graphic symbol, or other device.”

The goal for a trademark or a service mark is to be unique in order to identify that specific product or service as coming from a specific source.

Only tangible expressions of thoughts and ideas can be copyrighted. That is, an author cannot copyright an actual idea. However, an author may copyright the specific expression of an idea.

For example, an author could write a book about wizards. The book itself would be subject to copyright, but the idea of wizards would not be subject to copyright. Other authors would remain free to write, draw, sing, and so on about wizards.

A trade secret may be developed independently of an already existing business enterprise. Or, a trade secret may be developed within the natural process of a business enterprise.

For example, a secret family recipe could become the foundation of an international food processing company.

An important distinction between a trade secret and other types of intellectual property is that a trade secret is never registered. Therefore, the legal protection associated with a trade secret does not have an expiration date. Accordingly, a trade secret could, hypothetically, last forever.

INTELLECTUAL PROPERTY COMMERCIALIZATION PROCESS

An intellectual property often enjoys commercialization opportunities that general intangible assets typically do not.

Goodwill, a trained and assembled workforce, or favorable supplier contracts are typically not considered to be identifiable intangible assets that can be commercialized outside of the individual practitioner or the professional practice that owns/operates these intangible assets.

In contrast, intellectual property has transferable legal rights that can be more easily sold or licensed. In addition, intellectual property legal rights can be easily divided, while intangible asset legal rights cannot be easily divided.

For general intangible assets, either the individual practitioner or the professional practice owner uses the intangible asset or an operator uses the intangible asset.

However, for intellectual property, the practitioner or the practice owner can use the intellectual property, and an operator can also use the intellectual property through the process of an intellectual property license. In addition, a second (and a third, and a fourth . . .) operator can use the subject intellectual property through the process of an intellectual property sublicense.

Patents, trademarks, copyrights, and trade secrets can be either sold outright or licensed. A license allows the intellectual property owner to permit others to use its intellectual property—without the owner giving up the ownership rights to the intellectual property.

In general, this license procedure is how a franchise works. The franchisor is the owner of the patent, trademark, copyright, or trade secret, and the franchisee is able to use the franchisor’s intellectual property subject to certain restrictions.

An intellectual property owner does not have to license its intellectual property. That is, the intellectual property owner may operate its own intellectual property by directly entering the relevant

marketplace. An intellectual property owner can feel confident in distributing its work because the intellectual property rights are protected either by statute or by common law.

For example, federal copyright law protects the author's legal right to all of the following:

- Reproduce all or part of the work
- Make new (derivative) versions
- Distribute copies by selling, renting, leasing, or lending them
- Perform (e.g., recite, dance, or act) the work publicly
- Display the work publicly, directly, or by means of film, TV, slides, or other device or process

TYPICAL TERMS OF INTELLECTUAL PROPERTY LICENSE AGREEMENTS

One of the benefits of the individual practitioner or the professional practice owning an intellectual property is the ability to license (or lease) it to a nonowner/operator.

In order to operate the practitioner or the practice intellectual property, a licensee may agree contractually to pay royalties to the licensor. The licensing of intellectual property can be a very profitable line of business for the intellectual property owner/developer.

Typically, the terms of the intellectual property license agreement will set out the royalty rate (or other royalty payment arrangement) that the licensee will pay to the licensor. This royalty rate is sometimes expressed as a percentage of the income that is generated by the operation of the licensed intellectual property.

When the intellectual property royalty rate is expressed as such a profit split formula, 25 percent of the licensee/operator income is a typical "profit split" royalty rate to pay to the licensor/owner.

In the profit split formula, the terms profit or income are typically defined as earnings before income and taxes ("EBIT"). The profit split formula would be applied to the EBIT earned from the products or service that used the subject intellectual property.

In the profit split formula, the intellectual property operator/licensee would pay a royalty payment to the intellectual property owner/licensor for the use of the intellectual property. That royalty payment would equal, say, 25 percent of the operator/licensee's EBIT.

Of course, the operator/licensee would retain the remaining 75 percent of EBIT in order to provide:

1. a fair rate of return on all other tangible and intangible assets and
2. a profit margin to the operator/licensee.

An intellectual property license agreement typically sets out the terms by which the licensee/operator can use the practitioner or the practice intellectual property. Obviously, the intellectual property licensor has a continued interest in the value of its intellectual property. The licensor does not want the subject intellectual property to be devalued in any way because of misuse by the intellectual property licensee.

Therefore, the intellectual property license agreement typically sets out standards or practices that the licensee/operator must follow in order to maintain the quality of the intellectual property.

TYPICAL OTHER TERMS OF INTELLECTUAL PROPERTY CONTRACT AGREEMENTS

The owner of intellectual property rights is free to grant to another party full ownership of the intellectual property by selling it.

In an intellectual property sale contract of this sort, the ownership of intellectual property is fully transferred with the ownership rights. After the intellectual property sale, no royalties will be paid to the original intellectual property owner.

TYPICAL TYPES OF INTELLECTUAL PROPERTY RIGHTS

Intellectual property rights come from statutory law. In general, the right of ownership allows an inventor (say, the individual practitioner) to profit from the work that he or she put into the invention.

The right to exclude anyone else from using an invention for a period of time gives the inventor an opportunity to benefit economically from the research and development, time spent creating, or any other effort put into the invention.

For example, a pharmaceutical company may spend millions of dollars and years of effort to develop a single pharmaceutical product. If another company was able to commercialize that pharmaceutical product right away, then the development company would lose its ability to recover its cost investment and to make a profit.

Also, the other pharmaceutical companies would get to “cheat” in a way, by not having to pay anything for the development of the subject pharmaceutical product. There is an underlying issue of fairness in ensuring that someone is compensated for his or her work and that no one else is allowed to unfairly benefit from it.

TYPICAL PARTIES TO THE INTELLECTUAL PROPERTY COMMERCIALIZATION PROCESS

There are typically three parties to the intellectual property commercialization process:

1. The intellectual property developer
2. The intellectual property owner
3. The intellectual property operator

One party may operate in all three roles. That would be the case if that party created the intellectual property, continues to own it, and uses it to generate or protect some measure of income.

Frequently, the intellectual property developer may also be the intellectual property owner. Typically, a person receives the legal rights to an intellectual property the moment it is created. However, this statement is not always the case.

For example, if the work was created for hire on commission, the intellectual property developer would not be the intellectual property owner. The person who commissioned the work for hire would be the intellectual property owner.

If a practice/company employee in the scope of his or her employment creates the work, then the intellectual property rights would be owned by the employer.

If the intellectual property operator is not the intellectual property owner, then there probably would be some form of a use license agreement between the two parties.

The intellectual property operator will typically pay a royalty fee to the intellectual property owner in exchange for the ability to use the intellectual property.

FACTORS THAT THE ANALYST SHOULD CONSIDER

The factors for the analyst to consider related to whether an intangible asset qualifies as an intellectual property would include a typical dictionary definition of intellectual property, such as:

Property that derives from the work of the mind or intellect; specifically: an idea, invention, trade secret, process, program, data, formula, patent, copyright, or trademark or application, right, or registration relating thereto (see the *Merriam-Webster's Dictionary of Law*).

As mentioned above, there are four categories of individual practitioner or professional practice intellectual property: (1) patents, (2) copyrights, (3) trademarks, and (4) trade secrets.

The intellectual property is the patent or the copyright itself. The intellectual property is not the product that is patented or the manuscript that is copyrighted.

Factors for the analyst to consider related to whether the practitioner or practice intangible asset is a valuable intellectual property also include if the value of an intellectual property comes from its exclusivity. For example, once a patent or copyright has expired and can be used by any party, it will have far less value.

A patent or a copyright is typically more valuable at the beginning of its legal protection life. When a patent is first granted, the intellectual property owner can be assured of years of the exclusive ability to prohibit anyone else from using, making, and selling the related property.

The intellectual property owner may look forward to royalty income and/or operating income from the intellectual property. As the legal protection expiration date approaches, the amount of future royalty and/or operating income typically decreases.

Therefore, the value of the intellectual property typically decreases over time.

GENERALLY ACCEPTED PROFESSIONAL PRACTICE INTANGIBLE ASSET VALUATION APPROACHES AND METHODS

Numerous methods and procedures may be appropriate for the valuation of individual practitioner or professional practice intangible assets. Due to the fundamental similarities and differences of these valuation methods and procedures, they are categorized into the three generally accepted valuation approaches.

These three generally accepted intangible property valuation approaches are based on fundamental economic principles. The three generally accepted

intangible property valuation approaches are as follows:

1. The cost approach
2. The market approach
3. The income approach

The three generally accepted intangible property valuation approaches encompass a broad spectrum of microeconomics principles and property investment dynamics. Each of the three generally accepted valuation approaches has the same objective: to arrive at a reasonable indication of a defined value for the practitioner or practice intangible asset.

Accordingly, analytical methods and procedures that are based on the same economics principles are grouped into the three valuation approaches.

An analyst typically attempts to value the practitioner or the practice intangible asset using all three generally accepted valuation approaches—in order to obtain a multidimensional perspective on the subject intangible asset.

However, the individual methods and procedures that are associated with the three valuation approaches may or may not be applicable to the valuation of a particular practitioner or practice intangible asset.

Consequently, the analyst's selection of the valuation methods and procedures applied to value a particular practitioner or practice intangible asset will depend on the following:

- Unique characteristics of the intangible asset
- Quantity and quality of available data
- Purpose and objective of the subject analysis
- Experience and judgment of the analyst

The objective of using more than one valuation approach is to develop mutually supporting evidence for the value conclusion. An analyst's value conclusion is typically based on a synthesis of the value indications derived from each applicable valuation approach and method.

Market Approach Valuation Methods

The market approach is based on the economics principles of competition and equilibrium. These economics principles indicate that, in a free and unrestricted market, supply and demand factors will drive the price of an intangible asset to a point of equilibrium.

The principle of substitution also influences the market approach. This is because the identification

and analysis of equilibrium prices for a substitute intangible asset typically provides pricing evidence with regard to the practitioner or the practice intangible asset value.

Market Approach Valuation Principles

The analyst often attempts to apply market approach methods first in the valuation process. This is because “the market”—that is, the economic environment where arm's-length transactions between unrelated parties occur—is often the best indicator of value.

However, the market approach may not be appropriate for the valuation of certain commercial intangible assets.

This is particularly the case if the condition of the practitioner's or the practice's intangible asset is not sufficiently similar to the intangible assets that are transacting (by sale or license) in the marketplace. In that case, the guideline intangible asset transactional prices may not indicate the expected price for the intangible asset.

The price of an individual intangible asset is not necessarily equal to its value. Value is often defined as an expected price. That is, value is the price that an intellectual property would expect to fetch in its appropriate marketplace.

In contrast, price represents what one particular buyer paid to one particular seller for one particular intangible asset.

In any particular intangible asset sale (or license) transaction, either participant may have been influenced by nonmarket, participant-specific influences. If such influences did occur, and if such influences are not general to the marketplace, then a particular intangible asset transactional price may not be indicative of the expected price of the practitioner's intangible asset.

Even if the practitioner or the practice intangible asset was itself bought or licensed, that subject transactional price should not be naively relied upon to indicate an expected future price. This is because this transactional price may have been influenced by nonmarket, participant-specific influences.

Market Approach Valuation Process

Within the market approach, there are somewhat fewer valuation methods for the analyst to consider as compared to either the cost approach or the income approach. Nonetheless, the practical application of the market approach involves a complex and rigorous analytical process.

There is a general systematic process—or framework—to the application of market approach methods to intangible asset valuation.

The basic procedures of this systematic process are summarized as follows:

- Research the appropriate exchange market to obtain information about sale or license transactions, involving a “guideline” (i.e., generally similar) or “comparable” (i.e., almost identical) intangible asset that may be compared to the subject intangible asset—in terms of characteristics such as intangible asset type, intangible asset use, industry or profession in which the intangible asset operates, date of sale, and so on.
- Verify the information by confirming:
 1. that the data obtained are factually accurate and
 2. that the sale or license exchange transactions reflect arm’s-length market considerations.

If the guideline sale or license transaction was not at arm’s-length market conditions, then adjustments to the transactional data may be necessary. This verification procedure may also elicit additional information about the current market conditions for the sale or license of the intangible asset.

- Select relevant units of comparison (e.g., income multipliers or dollars per unit—units such as “per drawing,” “per customer,” “per line of code”) and develop a comparative analysis for each selected unit of comparison.
- Compare the selected “guideline” or “comparable” intangible asset sale or license transactions with the actual intangible asset using the selected elements of comparison, and adjust the sale or license price of each guideline transaction appropriately to the intangible asset.

If such adjustments cannot be measured, then eliminate the sale or license transaction as a guideline for future valuation analysis consideration.

- Reconcile the various value indications developed from the analysis of the guideline sale and/or guideline license transactions into either:
 1. a single value indication or
 2. a range of values.

In an imprecise market—subject to varying economics—a range of values may sometimes be a better conclusion for the marital estate intangible asset than a single value estimate.

The reconciliation procedure is the last procedure of any market approach valuation analysis in which two or more value indications are derived from guideline market data. In the reconciliation procedure, the analyst summarizes and reviews the data and the analyses that resulted in each value indication.

The analyst then resolves these value indications into either a range of values or into a single value indication.

It is important for the analyst to consider the strengths and weaknesses of each value indication derived, examining the reliability and appropriateness of the market data compiled and the analytical procedures applied.

Cost Approach Valuation Methods

The cost approach is based on the economics principles of substitution and price equilibrium. These economics principles indicate that a willing buyer will pay no more for a fungible intangible asset than the cost to obtain (i.e., either to purchase or to construct) an intangible asset of equal utility.

In other words, a willing buyer typically pays no more for a fungible intangible asset than the price of an intangible asset of comparable utility. For purposes of this economics principle, utility can be measured in many ways, including functionality, desirability, and so on.

Accordingly, an efficient market typically adjusts the price of all properties (including intangible assets) in equilibrium, so that the price the market will pay is a function of the comparative utility of each property.

The cost approach may have application limitations with regard to the valuation of some practitioner or practice intangible assets. This is because some intangible assets are not fungible. That is, some intangible assets are unique. Such unique assets cannot be substituted for comparable intangible assets.

When the practitioner’s or the practice’s intangible asset is unique (functionally, technologically, or legally), then the analyst should carefully consider the application of the cost approach in the subject valuation.

Within the cost approach, cost is influenced by the marketplace. That is, the relevant cost is often the greatest amount that the marketplace is willing to pay for the fungible intangible asset.

This value is not necessarily the actual historical cost of creating the individual intangible asset, and it is not necessarily the sum of the historical costs for which the willing seller would like to be

compensated. This is because value is not equal to cost, at least not to cost as measured in the historical accounting sense.

The conceptual foundations of all cost approach valuation methods relate to the following economics principles:

- The substitution principle—This principle indicates that no prudent buyer would pay more for a fungible intangible asset than the total cost to develop a new intangible asset of equal desirability and utility.
- The supply-and-demand principle—This principle indicates that shifts in supply and demand:
 1. cause costs to increase and decrease and
 2. cause changes in the supply of different types of intangible assets.
- The externalities principle—This principle indicates that gains or losses from external factors may affect the value of an intangible asset. For this reason, external conditions may cause a newly developed intangible asset to be worth more or less than its cost.

Definition of Intangible Asset Cost

There are several generally accepted cost approach valuation methods.

Each of these cost approach valuation methods applies a particular definition of cost.

Two of the typical definitions of cost are:

- reproduction cost new and
- replacement cost new.

There are subtle, but important, differences in these two different definitions of cost.

Reproduction cost new is the total cost, at current prices, to develop an exact duplicate or replica of the practitioner's or practice's intangible asset. This duplicate intangible asset would be developed using the same materials, standards, design, layout, and quality of workmanship used to create the original intangible asset.

Replacement cost new is the total cost to develop, at current prices, an asset having equal functionality or utility of the intangible asset.

Functionality is an engineering concept that means the ability of the intangible asset to perform the task for which it was designed. Utility is an economics concept that means the ability of the intangible asset to provide an equivalent amount of satisfaction.

The replacement intangible asset would be (1) developed with modern methods and (2) developed according to current standards, state-of-the-art design and layout, and the highest available quality of workmanship.

The replacement intangible asset may have greater utility than the actual intangible asset. If this is the case, the analyst should adjust for this factor in the obsolescence analysis of the replacement cost new less depreciation method.

Moreover, while the replacement intangible asset performs the same task as the actual intangible asset, the replacement asset is often "better" (in some way) than the actual intangible asset.

The replacement intangible asset may yield more satisfaction than the actual intangible asset. If this is the case, the analyst should adjust for this factor in the obsolescence estimation of the replacement cost analysis.

There are several other definitions of cost that are applicable to a cost approach analysis. For example, some analysts consider a measure of cost avoidance as a cost approach method. This method quantifies either historical or prospective costs that are avoided (i.e., not incurred) by the intangible asset owner/operator due to the intangible asset ownership.

However, cost avoidance measurement methods are typically considered to be income approach valuation methods.

In addition, some analysts consider trended historical costs as an indication of value. In this method, actual historical intangible asset development costs are identified and quantified and then "trended" to the valuation date by an appropriate inflation-based index factor.

Regardless of the specific definition of cost used in the analysis, all cost approach valuation methods typically include a comprehensive and all-inclusive definition of cost.

Intangible Asset Cost Components

The intangible asset development cost measurement (whether replacement cost new, reproduction cost new, or some other measure of cost) should include direct costs (e.g., materials) and indirect costs (e.g., engineering and design labor).

The intangible asset cost measurement should also include:

1. the intangible asset developer's profit (on the direct cost and indirect cost investment) and
2. an opportunity cost/entrepreneurial incentive (to economically motivate the intangible asset development process).

The developer's profit is a cost component that is sometimes overlooked in the cost approach analysis.

From the perspective of the intangible asset developer, first, the developer expects a return of all of the material, labor, and overhead costs related to the development process.

Second, the developer expects a return on all of the material, labor, and overhead costs related to the development process.

For example, a building contractor expects to earn a reasonable profit on the construction of any residential, commercial, or industrial building. Likewise, an intangible asset developer expects to earn a reasonable profit on the intangible asset development.

The developer's profit can be estimated by using several procedures. It can be estimated as a percentage return on the developer's investment in material, labor, and overhead.

It can be estimated as a percentage markup—or as a fixed dollar markup—to the amount of cost and time involved in the development process. It can also be estimated as a fixed dollar amount.

The analyst may sometimes disaggregate the developer's investment into two subcomponents:

1. The amount financed by external financing sources (e.g., banks and other financial institutions)
2. The amount financed by the intangible asset owner directly.

The developer's profit associated with the costs financed by external sources is analogous to construction period interest accrued in the construction of a tangible asset.

Some analysts include this construction period interest in the developer's profit cost category, and some analysts include this interest in the overhead cost category. Usually, a higher rate of return is assigned to the cost amount financed by the intangible asset owner directly, as compared to the cost amount financed by external financing sources.

The opportunity cost is another cost component that is sometimes overlooked in the cost approach analysis. Nonetheless, opportunity cost is an integral component of the cost approach analysis.

The opportunity cost is the amount of economic benefit required to motivate the intangible asset owner to enter into the development process.

The opportunity cost is often measured by reference to the intangible asset replacement/reproduction time period (i.e., the amount of time required for the owner to replace or reproduce the marital estate intangible asset *de novo*).

The analyst estimates the difference between:

1. the amount of income that the owner will earn by operating the actual intangible asset and
2. the amount of income that the owner will earn during the time period of developing the replacement/reproduction intangible asset.

The developer typically developer earns zero or negative income during the intangible asset replacement/reproduction time period. The intangible asset opportunity cost component is often measured as the difference between:

1. the positive income earned from the ownership/operation of the practitioner or the practice actual intangible asset during the replacement period and
2. the zero or negative income earned by the hypothetical replacement/reproduction intangible asset during the replacement period.

With regard to the cost approach, intangible asset developers may be compared to real estate developers (e.g., the developer of a shopping mall or a residential apartment complex). There is an opportunity cost associated with the development process for both the intangible asset developer and the real estate developer.

The time (and the financial resources) that they devote to the subject project is time (and resources) that they are diverting from another development project.

Alternatively, the time (and financial resources) that they devote to the subject project is time (and resources) that they are diverting from owning the subject (operational) intangible asset or residential/commercial real estate complex.

Likewise, both the intangible asset developer and the real estate developer expect to be compensated for the conceptual, planning, and administrative efforts associated with putting the entire project together.

Both types of developers expect to be compensated for the full period of time between:

1. when they initially begin the development of the subject project and
2. when they realize the full commercial potential of the subject development project.

This opportunity cost concept may be easier to understand with regard to the real estate developer. From the time the real estate developer first begins to construct the shopping mall until the time all of

the retail stores are leased and occupied, the developer is likely to experience negative cash flow during this development period.

Let's assume that this time period is two years.

A real estate developer who purchased an operational (i.e., fully leased) shopping mall two years earlier would experience positive cash flow during that same two-year period. The foregone cash flow during the two-year development period is one indication of the opportunity cost required to motivate the real estate developer to build a new shopping mall (instead of buying an existing shopping mall).

Accordingly, this opportunity cost measure may be considered as one of the cost components in the real estate valuation cost approach analysis.

The same type of opportunity cost is necessary to motivate the intangible asset developer to produce a new patent, trademark, computer program copyright, chemical formulation trade secret, food recipe trade secret, or other intangible asset.

The intangible asset owner should be compensated for the risk of the new development process compared to the relatively low risk of using the last generation of technology, consumer brands, computer software, and so on.

The intangible asset developer should be compensated for the forgone economic income (however measured) during the intangible asset development period. This forgone economic income is one indication of the opportunity cost required to motivate the intangible asset developer to create a new intangible asset (instead of buying an existing intangible asset).

Accordingly, this opportunity cost measure may be considered as one of the cost components in the cost approach analysis.

All five cost subcomponents (i.e., material, labor, overhead, developer's profit, and opportunity cost) should be considered as part of a comprehensive intangible asset cost approach analysis. So, while the cost approach is a fundamentally different set of valuation analyses from the income approach, there are necessary economic analyses involved in the cost approach.

These economic analyses (which may involve some analysis of the intangible asset income) provide indications of both:

1. the appropriate levels of opportunity cost (if any) and
2. economic obsolescence (if any).

Cost New less Depreciation

The intangible asset replacement cost new is the total cost to create, at current prices, an intangible

asset having equal utility to the practitioner's or the practice's intangible asset.

However, the replacement intangible asset would be:

1. developed with modern methods and
2. developed according to current standards, state-of-the-art design and layout, and the highest available quality of workmanship.

Accordingly, the replacement intangible asset may have greater utility than the practitioner or the practice intangible asset.

Reproduction cost new is the total cost, at current prices, to construct an exact duplicate or replica of the practitioner or the practice intangible asset. This duplicate intangible asset would be created using the same materials, standards, design, layout, and quality of workmanship used to create the original intangible asset.

The intangible asset cost new (however measured) should be adjusted for losses in value due to the following:

- Physical deterioration
- Functional obsolescence
- Technological obsolescence (a particular component of functional obsolescence)
- Economic obsolescence (a particular component of external obsolescence)

Physical deterioration is the reduction in the value of an intangible asset due to physical wear and tear resulting from continued use. It is unlikely that an intangible asset will experience physical deterioration. However, the analyst should consider this concept in any cost approach analysis.

Functional obsolescence is the reduction in the value of an intangible asset due to its inability to perform the function (or yield the periodic utility) for which it was originally designed. Technological obsolescence is a decrease in the value of an intangible asset due to improvements in technology that make an intangible asset less than the ideal replacement for itself.

Technological obsolescence occurs when, due to improvements in design or engineering technology, a replacement intangible asset produces a greater standardized measure of utility than the practitioner's or practice's intangible asset.

Technological obsolescence is typically considered to be a specific component of functional obsolescence. Accordingly, the analyst may capture all of the value influences due to both design flaws and

changing technology in one category—and call that functional obsolescence.

Economic obsolescence (i.e., a specific component of external obsolescence) is a reduction in the value of the intangible asset due to the effects, events, or conditions that are external to—and not controlled by—the intangible asset current use or condition.

The impact of economic obsolescence is typically beyond the control of the intangible asset owner/operator. For that reason, economic obsolescence is typically considered incurable.

In any cost approach analysis, the analyst estimates the amounts (if any) of physical deterioration, functional obsolescence, technological obsolescence, and economic obsolescence related to the intangible asset.

In this estimation, the analyst may consider the intangible asset actual age—and its expected UEL. Such an age/UEL consideration may be an important component in the application of the cost approach.

In the cost approach, a typical formula for quantifying the intangible asset replacement cost new is: reproduction cost new – curable functional and technological obsolescence = replacement cost new.

To estimate the intangible asset value, the following formula is often used: replacement cost new – physical deterioration – economic obsolescence – incurable functional and technological obsolescence = value.

Income Approach Valuation Methods

The income approach is based on the economics principle of anticipation (also called the principle of expectation). In this approach, the value of the practitioner or the practice intangible asset is the present value of the expected income to be earned from the intangible asset ownership/operation.

As the name of this economics principle implies, the willing buyer “anticipates” the “expected” economic income to be earned from the intangible asset.

This expectation of prospective income is converted to a present worth—that is, the indicated value of the intangible asset. This conversion requires the analyst to estimate the investor’s required rate of return on the intangible asset generating the prospective income.

This required rate of return will be a function of many economic variables, including the risk—or the uncertainty—of the practitioner’s or the practice’s expected future income.

Measures of Intangible Asset Income

Numerous alternative measures of income may be relevant to the practitioner or the practice intangible asset valuation. If properly applied, many different measures of income can be used in the income approach to provide a reasonable indication of value.

Some of the alternative measures of income include the following:

- Gross or net revenue
- Gross income (or gross profit)
- Net operating income
- Net income before tax
- Net income after tax
- Operating cash flow
- Net cash flow
- Incremental income
- Differential income
- Royalty income
- Excess earnings income
- Several others (such as incremental income)

Many different measures of income may be used in the income approach. Therefore, an important procedure in this valuation approach is for the analyst to ensure that the discount rate or the direct capitalization rate applied is derived on a basis consistent with the measure of income used.

There are at least as many income approach valuation methods as there are alternative measures of intangible asset income.

In addition, all of the different income approach valuation methods may be grouped into two categories:

1. Direct capitalization methods
2. Yield capitalization methods

However, most of these income approach valuation methods may be grouped into five categories of valuation methods. These five categories of income approach valuation methods have similar practical and conceptual considerations.

Income Approach Valuation Methods

These five categories of income approach intangible asset valuation methods are summarized below:

1. Valuation methods that quantify the incremental level of the intangible asset income

That is, the intangible asset owner/operator will expect a greater level of economic income (however measured) by

owning/operating the practitioner's or the practice's intangible asset as compared to not owning/operating the practitioner's or the practice's intangible asset.

2. Valuation methods that quantify a decremental level of intangible asset costs or expenses

That is, the intangible asset owner/operator will expect a lower level of costs or expenses, such as other required levels of capital costs or operating costs, by owning/operating the practitioner's or the practice's intangible asset as compared to not owning/operating the practitioner's or the practice's intangible asset.

3. Valuation methods that estimate a relief from a hypothetical license royalty payment

That is, the amount of a royalty payment that a hypothetical third-party intangible asset licensee would be willing to pay to a hypothetical third-party intangible asset licensor in order to obtain (i.e., to license) the use of, and the rights to, the practitioner's or the practice's intangible asset.

4. Valuation methods that quantify the difference in the value of the owner/operator overall practice or company, or similar economic unit, as a result of owning the practitioner's or practice's intangible asset (and using it in the owner/operator practice or company)

That is, this actual value is compared to the hypothetical value associated with not owning the practitioner or practice intangible asset (and not using it in the owner/operator practice or company).

5. Valuation methods that estimate the value of the practitioner's or the practice's intangible asset as a residual from the value of the owner/operator overall practice or company (or of a similar economic unit), or as a residual from the value of an overall estimation of the total intangible asset of the owner/operator practice or company (or of a similar economic unit).

DIRECT CAPITALIZATION METHODS

In a direct capitalization analysis, the analyst:

1. estimates a normalized measure of income for one period (i.e., one period into the future to the valuation date) and
2. divides that measure by an appropriate investment rate of return.

The appropriate investment rate of return is called the direct capitalization rate.

The direct capitalization rate may be derived for a perpetuity period of time, or the direct capitalization rate may be derived for a specified finite period of time. This decision will depend on the analyst's expectation of the duration of the intangible asset income projection.

Yield Capitalization Methods

In a yield capitalization analysis, the analyst projects the appropriate measure of income for several discrete time periods into the future. This projection of prospective income 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 or return—or yield capitalization rate—over the expected term of the intangible asset income projection.

The duration of the discrete projection period—and whether or not a residual or terminal value should be considered at the conclusion of the discrete projection period—will depend on the analyst's expectation of the duration of the intangible asset income projection.

The result of either the direct capitalization analysis or the yield capitalization analysis is the income approach value indication of the practitioner or the practice intangible asset.

Tax Amortization Benefit Adjustment

Regardless of whether the yield capitalization method or the direct capitalization method is used, the analyst should consider one additional income approach procedure.

That procedure relates to the cash flow effect of the tax amortization benefit (“TAB”) deduction related to an intangible asset that is purchased as part of a taxable business combination.

More often than not, the analyst will not make this income tax amortization benefit adjustment to the pre-adjusted income approach value indication. However, the analyst should consider whether such an adjustment is appropriate in each intangible asset income approach analysis.

When an intangible asset is purchased as part of the taxable acquisition of a going-concern business, (i.e., the practice or the company) the price of that purchased asset may be amortizable to the acquirer for federal income tax purposes. This amortization deduction is allowed under Internal Revenue Code Section 197.

That is why such intangible asset assets are referred to as Section 197 intangible assets. However, the analyst should consider the following:

- Not all commercial intangible assets qualify as Section 197 intangible assets.
- A Section 197 intangible asset has to be purchased as part of a business acquisition (and not on a stand-alone basis).
- The business acquisition has to be a taxable transaction, such as a cash-for-assets transaction under Section 1060 (and not, for example, a Section 368 stock-for-stock merger).
- The intangible asset owner/operator contemplated in the defined standard of value should be a taxpayer who is able to use the amortization-related income tax deduction.

Therefore, before applying a TAB, the analyst should consider the following:

1. Is the subject intangible asset a Section 197 intangible asset?
2. Would the subject intangible asset normally sell as a Section 197 intangible asset?

If the answer to either question is yes, then the analyst may consider applying a TAB adjustment (in the income approach analysis).

Section 197 allows the business acquirer to amortize the fair market value (presumably, the price paid) of the purchased intangible asset over a statutory 15-year amortization period. This annual amortization is a deduction that reduces the acquirer's taxable income and, therefore, income tax expense.

The value of this amortization deduction is the present value of the income tax expense savings over 15 years, present valued at the present value discount rate used in the income approach valuation analysis.

When applicable, this present value of income tax expense savings is added to the pre-adjusted income approach value indication for the intangible asset.

The sum of (1) the present value of the income tax savings and (2) the pre-adjusted value indication equals (3) the final income approach value indication for the individual practitioner or the professional practice intangible asset.

Alternatively, some analysts use an income tax amortization factor as a shortcut to the 15-period tax expense savings calculation.

The TAB formula follows:

$$TAB = \frac{1}{1 - \left(\frac{\text{income tax rate}}{\text{amortization period}} \right) \times \text{present value annuity factor}}$$

In this formula, the income tax rate should be the same tax rate that was applied in the unadjusted income approach analysis.

The present value annuity factor is the present value of an annuity of \$1 for 15 years at the present value discount rate that was used in the unadjusted income approach analysis. And, the amortization period is always 15 years for a Section 197 intangible asset.

For example, let's consider a business acquirer with a 40 percent effective income tax rate and a 20 percent present value discount rate.

Applying the amortization factor formula, the intangible asset income approach value indication adjustment would be as follows:

$$TAB \text{ Adjustment} = \frac{1}{1 - \left(\frac{40\%}{15 \text{ years}} \right) \times 4.6755}$$

Assuming that the unadjusted income approach value indication for the practitioner or the practice intangible asset is \$100, the amount of the TAB adjustment is \$14 rounded (i.e., \$100 × 14%).

Applying the amortization factor formula, the total income approach value indication for the practitioner or the practice intangible asset is \$114 (i.e., \$100 unadjusted value + \$14 TAB adjustment).

This TAB adjustment (however calculated) is intended to reflect the increment in net cash flow related to the amortization-related income tax expense savings.

This net cash flow increment is not reflected in the unadjusted income approach analysis. This adjustment, then, properly reflects the amount of income tax expense that should be included in the income approach analysis.

Because it is an adjustment to income tax expense in the income approach, this adjustment is not applicable to either the cost approach or the market approach. In other words, the TAB adjustment should not be considered in intangible asset analyses based on either the cost approach or the market approach.

INTANGIBLE ASSET USEFUL ECONOMIC LIFE ANALYSIS

After the analyst has identified the appropriate valuation approaches and methods, the next procedure

is the analysis of UEL. The estimation of UEL (i.e., a “lifying analysis”) may be an important consideration of each of the three valuation approaches.

In the income approach, a lifying analysis may be developed to estimate the projection period for economic income subject to either yield capitalization or direct capitalization.

In the cost approach, a lifying analysis may be developed to estimate the total amount of obsolescence, if any, from the estimated measure of “cost”—that is, the intangible asset development reproduction or replacement cost.

In the market approach, a lifying analysis may be developed to select, reject, and/or adjust “comparable” or “guideline” intangible asset sale or license transactional data.

For each valuation approach, the UEL analysis considerations may have a direct and predictable effect on the concluded intangible asset value. The likely expected effects on the intangible asset value indications are summarized below.

Expected Effect on the Income Approach Value Indication

Normally, in the income approach, a longer UEL estimate may result in a greater intangible asset value. An intangible asset income approach value is particularly sensitive to the UEL estimate when the UEL is less than 10 years. And, the intangible asset income approach value is not particularly sensitive to the UEL estimate when the UEL is more than 20 years.

Expected Effect on the Cost Approach Value Indication

Normally, in the cost approach, a longer UEL estimate may result in a greater intangible asset cost approach value. That is because a longer UEL generally indicates less obsolescence in the practitioner or practice intangible asset.

Normally, a shorter UEL estimate results in a lower intangible asset cost approach value. This is because a shorter UEL generally indicates greater obsolescence in the practitioner or practice intangible asset.

Expected Effect on the Market Approach Value Indication

The “market” should indicate an acceptance for the practitioner or the practice intangible asset’s UEL. If the practitioner or the practice intangible asset UEL is materially different from the guideline sale or license transaction intangible asset UEL, then

adjustments to the market-derived transactional pricing multiples may be justified.

If the practitioner or the practice intangible asset UEL is materially different from the guideline sale or license transaction intangible asset UELs, then this fact may indicate a lack of marketability for the practitioner or practice intangible asset.

This fact may indicate a lack of market demand for an intangible asset with the practitioner or the practice intangible asset age/life characteristics.

Determinants That May Influence Intangible Asset Expected UEL

The following list presents some of the typical determinants, or factors that may directly influence the intangible asset expected UEL:

- Legal determinants
- Contractual determinants
- Functional determinants
- Technological determinants
- Economic determinants
- Analytical determinants

Each of these categories of life-influence determinants may be considered in the analyst’s UEL estimation. Typically, for practitioner or practice intangible asset valuation purposes, the life determinant that indicates the shortest UEL deserves primary consideration in the UEL estimate.

VALUATION SYNTHESIS AND CONCLUSION

The intangible asset values indicated by all three generally accepted valuation approaches should be considered in the final value synthesis and conclusion. This is due to the fact that the valuation variables used—and the value indications concluded—in each approach provide a different perspective on the practitioner or the practice intangible asset value.

The following discussion presents three simplified illustrative examples with regard to an intangible asset valuation. Each simplified example illustrates one generally accepted intangible asset valuation approach.

ILLUSTRATIVE EXAMPLE OF THE COST APPROACH AND THE INCOME APPROACH

Exhibits 2 through 5 present a simplified illustrative example of a trade secret intangible asset

valuation. This illustrative intangible asset relates to the manufacture of compressed meal replacement bar (“MRB”) products by the hypothetical Family Services Company Partners (“Family”).

For the last year or so, Family has produced a popular low-calorie MRB product that has a good taste, crunchy texture, high protein, and nutritional balance. The intangible asset includes the trade secret proprietary process by which this MRB product is manufactured.

The trade secret process was developed by the company president and principal shareholder, Fred Family.

The trade secret is the compress-and-form manufacturing process of the MRB product recipe and formulation. Fred documented this trade secret in a set of engineering drawings and in a process flow chart notebook.

Family management has elected not to patent this proprietary process for competitive reasons. Both the company engineers and the company legal counsel believe that the manufacturing process would be patentable.

Nonetheless, if the trade secret became public knowledge through the patent procedure, Fred is concerned that the company competitors could reverse engineer an equally effective manufacturing process that would not violate the patent.

Family treats this proprietary technology as a trade secret. All of the engineering and other documentation related to this manufacturing process is protected in a locked cabinet in Fred’s office.

Only a select number of Family engineering and production managers have access to that information. And, all of those Family employees have signed nondisclosure agreements.

Fred also believes that this proprietary process gives the company’s MRB product a distinct competitive advantage. Family marketing personnel stress this product differentiation feature in all of the company marketing materials and presentations.

In summary, the intangible asset is the trade secret (including the technical documentation) related to the “compress-and-form” manufacturing proprietary process (hereinafter referred to as “the MRB trade secret”).

Illustrative Example Fact Set and Analysis Assumptions

The objective of this valuation is to estimate the fair market value of the MRB trade secret intangible asset as of January 1, 2022.

The Family trade secret is used in the manufacture of a health food product line that is projected to generate \$147 million in net revenue next year.

Family has developed a unique modification to the standard compression process. The trade secret produces an MRB product that has a crunchy texture and a “snappy” break.

In addition, the final product maintains a good taste and a high nutritional value.

A lower moisture content of the final product increases the retail shelf life of the MRB product.

The trade secret produces a product with much greater consumer appeal than competitive products. The Family product can be produced at the same cost of sales than the lower quality competitor products.

Selection of Valuation Approaches and Methods

In this hypothetical example, the appropriate standard of value is fair market value.

Based on a highest and best use analysis, the analyst’s selected premise of value is value in continued use as part of a going-concern business. This so-called premise of value is consistent with the analyst’s:

1. valuation assignment and
2. assessment of the highest and best use of the subject intangible asset.

Based on (1) the quality and quantity of available data and (2) the purpose and objective of the subject analysis, the analyst decided to apply two valuation approaches:

1. The cost approach, and specifically the reproduction cost new less depreciation (“RPCNLD”) method
2. The income approach, and specifically the yield capitalization method (based on differential income)

Cost Approach Analysis

The analyst has access to the actual historical development costs related to the Family trade secret. This type of historical cost information is not always available to an analyst.

Because this trade secret was so important to the company, Family tracked the original cost of its proprietary process development efforts. Therefore, the analyst is able to restate the historical development costs of the trade secret in current (i.e., valuation date) dollars.

This trended historical cost analysis provides the analyst with an estimate of the cost that would be incurred by a hypothetical willing buyer to reproduce the trade secret.

Cost Approach Valuation Variables

Fred provided the analyst with the historical accounting information regarding the number of hours spent by Fred and other Family engineers and scientists on the various aspects of the trade secret development. The analyst estimated a full absorption cost related to the trade secret development.

This full absorption cost included all employee salaries, employee benefits, employment-related taxes, and related company overhead. This full absorption cost also included a component for development period interest related to the direct costs.

The analyst calculated each of these full absorption cost components as of the valuation date. Accordingly, the full absorption cost represents the reproduction cost for the intangible asset.

The analyst concluded the current cost per person-hour for all of the employee hours actually spent on the development, testing, and implementation of the trade secret.

The product of (1) the total number of person-hours actually spent to develop the Family trade secret and (2) the estimated full absorption cost per person-hour results in an estimate of the reproduction cost new (“RPCN”).

The analyst considered adjustments to the RPCN estimate for losses in value due to functional, technological, and economic obsolescence.

The analyst considered (1) the age and expected UEL of the trade secret, (2) the intangible asset position within its technology life cycle, and (3) the intangible asset owner/operator’s return on investment related to the use of the trade secret.

Exhibit 2 summarizes the RPCNLD analysis. The total RPCN includes the following:

1. Direct costs
2. Indirect costs
3. Developer’s profit
4. Entrepreneurial incentive

The direct costs include the direct salary costs of the Family development team. The indirect costs include the related employee benefit costs, employment taxes, overhead allocation, and development period interest expense.

The developer’s profit includes an estimate of the profit margin that an independent engineering firm

would charge to Family if that engineering firm was retained to develop the trade secret. The entrepreneurial incentive is the opportunity cost related to the intangible asset development process.

The analyst quantified this opportunity cost as the difference in the amount of cash flow that Family would earn with versus without the trade secret.

The analyst also estimated the incremental cash flow during the period of elapsed time required to develop (i.e., reproduce) the trade secret. Fred estimated that the trade secret development period would be 24 months.

As indicated in Exhibit 2, the RPCN for the trade secret is \$10.975 million.

Based on the current age (i.e., one year) and UEL (i.e., five years) of the Family trade secret, the analyst concluded that a 15 percent functional obsolescence allowance was appropriate for the intangible asset.

That 15 percent functional obsolescence allowance results in \$1.646 million of “depreciation.”

The analyst developed several economic obsolescence measurement analyses. Based on these analyses, the analyst concluded that there was no economic obsolescence associated with the ownership or operation of this intangible asset.

The indicated RPCNLD estimate is \$9.329 million. And, this RPCNLD estimate is rounded to a fair market value indication for the Family trade secret intangible asset of \$9.3 million, as of January 1, 2022.

Income Approach Analysis

First, the analyst projected the prospective cash flow associated with the use of the trade secret in the Family current business operations.

Second, the analyst projected the prospective cash flow that would be generated without the use of the trade secret.

The trade secret value indication is based on the difference between the present value indications from the two different Family operating scenarios:

1. Family operating with the trade secret in its current business operations and
2. Family operating without the trade secret in its current business operations).

Valuation Variables

Family marketing management provided projections of the product unit selling price, unit volume, and market share for the five years after the valuation date. Family management also projected the cost of

Exhibit 2
Family Services Company Partners
MRB Trade Secret Intangible Asset
Cost Approach
As of January 1, 2022

| Intangible Asset Development Procedures: Type of Laboratory Research & Testing | Total Person-Hours to Reproduce the Development Procedures | Average Base Cost per Person-Hour (\$) | Employee Benefits and Overhead Cost Allocation Factor | Full Absorption Cost per Person-Hour (\$) | Reproduction Cost New (\$) |
|--|--|--|---|---|----------------------------|
| Compression Process Analysis | 15,000 | 75 | 1.85 | 139 | 2,085,000 |
| Food Ingredient Mixtures | 8,000 | 75 | 1.85 | 139 | 1,112,000 |
| Manufacturing Process Testing | 10,000 | 85 | 1.85 | 157 | 1,570,000 |
| Manufacturing Process Drawings & Documentation | 8,500 | 90 | 1.85 | 167 | <u>1,420,000</u> |
| | | | | | 6,187,000 |
| | | | | | 928,000 |
| | | | | | <u>3,860,000</u> |
| | | | | | 10,975,000 |
| | | | | | <u>1,646,000</u> |
| | | | | | <u>9,329,000</u> |
| | | | | | <u>9,300,000</u> |

- [a] The full absorption cost allocation factor includes a component for development period interest.
- [b] The developer's profit represents a fair profit margin that an independent food engineering company would charge to a client to develop a manufacturing process like the MRB trade secret.
- [c] The entrepreneurial incentive indicates the incremental amount of net cash flow than the owner/operator of the MRB trade secret will earn during the 24-month process development period—compared to the amount of net cash flow the same owner/operator would earn from using an alternative trade secret. See Exhibits 2 and 3 for the present values of net cash flow for years 1 and 2.
- [d] This RPCN estimate includes all related direct costs, indirect costs, developer's profits, and entrepreneurial incentive.
- [e] The analyst concluded that a 15 percent functional obsolescence allowance was appropriate. Management expects to develop and implement an improved compression process in a few years. The current trade secret has been in use for approximately one year. Therefore, the total expected life of this trade secret is approximately six years (i.e., on year age plus five years RUL). Therefore, this intangible asset is approximately 15 percent (i.e., one year divided by six years) from an age/life perspective. Since this intangible asset is earning a fair return on investment, the analyst concluded that no allowance for economic obsolescence is needed.

goods sold and the capital expenditure data related to the production of the MRB food product.

In addition, Family management prepared a five-year projection of the selling, general, and administrative expenses related to the MRB food product line.

After a due diligence review of the Family-management-prepared financial projections, the analyst concluded that these product line financial projections were supported and credible.

This valuation method measures the difference in the Family operating income potential both with and without the operation of the trade secret. The income potential represents the amount of income that is available to the business after consideration of a required level of reinvestment for continued operations and for expected growth.

The analyst selected net cash flow as the appropriate measure of income.

For purposes of this analysis, the analyst defined net cash flow as follows:

| | |
|--------------|--|
| | Net sales |
| Less: | Cost of sales |
| <u>Less:</u> | <u>Operating expenses</u> |
| Equals: | Net income before taxes |
| Less: | Income taxes |
| Plus: | Depreciation and amortization expense |
| Less: | Capital expenditures |
| Less: | Additions to net working capital |
| <u>Less:</u> | <u>Contributory asset capital charge</u> |
| Equals: | Net cash flow |

In this analysis, the product line net cash flow is projected over the trade secret expected UEL. The net cash flow projection is discounted at an appropriate discount rate in order to conclude a present value.

Based on industry experience, Family management expects that it will develop a replacement trade secret in about five years. Both Family and all of its competitors continuously develop improved MRB products.

Family management is already working on the development of a new and improved compression process.

Family management expects that the new and improved process will be developed, tested, and implemented within five years. At that time, the current trade secret will be obsolete.

This five-year expected UEL is consistent with the Family historical experience regarding its trade secret technology life cycle. And, this five-year

expected UEL is consistent with the industry's historical experience regarding a trade secret technology life cycle.

Therefore, the analyst selected five years as the appropriate measure of the trade secret UEL.

The analyst selected the following valuation variables:

Scenario I: Family operating with the MRB trade secret in operation

- Net sales growth rate: 10 percent per year
- Gross margin percentage: 26 percent of net sales
- Other operating expenses: 11 percent of net sales
- Effective income tax rate: 36 percent of pretax income
- Depreciation expense: 1 percent of net sales
- Net capital expenditures: equal to depreciation expense
- Contributory assets charge: \$2.2 million per year
- Incremental net working capital: 5 percent of net sales
- Present value discount rate: 15 percent
- Remaining useful life estimate: 5 years

Scenario II: Family operating without the MRB trade secret in operation

- Expected sales decrement: -10 percent per year
- Other operating expenses: 11.5 percent of net sales
- Incremental net working capital: 7 percent of net sales
- Present value discount rate: 16 percent (increased 1 percent due to increased competition risk without trade secret)
- All other valuation variables remain unchanged for Scenario I.

The contributory asset charge is included to account for the fair return on the investment of all the Family contributory assets that are used with the trade secret. The Family contributory assets include net working capital, tangible operating assets, and the company trade name.

The projected decrease in product line sales without the trade secret in operation is based on discussions with Family management.

This projected sales decrease indicates management's estimate of the consumer response to the decrease in taste, crunchiness, and retail shelf life of the MRB product without the trade secret.

The negative sales growth rate reflects management's projection of the combined effects of:

1. decreased unit selling price and
2. decreased unit volume sales.

Without the product differentiation provided by the trade secret, Family management estimates that it will have to increase its marketing expense. This marketing expense increase accounts for the one-half of 1 percent projected increase in other operating expenses.

In addition, Family management projects that it will have to liberalize its customer credit policy in order to stimulate sales of the less desirable MRB product.

Family management estimates that it will have to give 60-day credit terms—instead of the current 30-day credit terms.

This change in credit policy will affect the company's accounts receivable balances. This change in

credit policy will also result in an expected change in the net working capital investment.

The 15 percent present value “with the trade secret” discount rate is based on the analyst's estimate of the Family weighted average cost of capital (“WACC”).

The 16 percent “without the trade secret” discount rate is based on the 15 percent WACC, adjusted 1 percent for the additional competition risk associated with not having a superior MRB product.

Income Approach Valuation Analysis

As presented in Exhibit 3, the sum of the product line discounted cash flow with the trade secret in operation is \$49.5 million.

As presented in Exhibit 4, the sum of the product line discounted cash flow without the trade secret in operation is \$39.9 million.

The difference of these two income projections indicates a value differential related to the trade secret of \$9.6 million.

Exhibit 3 Family Services Company Partners MRB Trade Secret Intangible Asset Income Approach As of January 1, 2022 Scenario I: Family Operating with the Family Trade Secret in its Business Operations

| MRB Product Line Financial Projection Variables (\$ in 000s): | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
|--|-----------------|-----------------|-----------------|-----------------|-----------------|
| Net Sales | \$146,912 | \$161,603 | \$177,764 | \$195,540 | \$215,094 |
| Gross Margin | 38,197 | 42,017 | 46,219 | 50,840 | 55,924 |
| Operating Expenses | <u>(16,160)</u> | <u>(17,776)</u> | <u>(19,554)</u> | <u>(21,509)</u> | <u>(23,660)</u> |
| Earnings before Interest and Taxes | 22,037 | 24,240 | 26,665 | 29,331 | 32,264 |
| Income Tax Expense | <u>(7,933)</u> | <u>(8,727)</u> | <u>(9,599)</u> | <u>(10,559)</u> | <u>(11,615)</u> |
| Operating Income | 14,104 | 15,514 | 17,065 | 18,772 | 20,649 |
| Depreciation Expense | 1,469 | 1,616 | 1,778 | 1,955 | 2,151 |
| Capital Expenditures | (1,469) | (1,616) | (1,778) | (1,955) | (2,151) |
| Contributory Asset Charge | (2,200) | (2,200) | (2,200) | (2,200) | (2,200) |
| Incremental Net Working Capital Investment | <u>(696)</u> | <u>(735)</u> | <u>(808)</u> | <u>(889)</u> | <u>(978)</u> |
| Net Cash Flow | 11,208 | 12,579 | 14,057 | 15,683 | 17,471 |
| Present Value Discount Factor [a] | <u>0.9325</u> | <u>0.8109</u> | <u>0.7051</u> | <u>0.6131</u> | <u>0.5332</u> |
| Discounted Net Cash Flow | 10,451 | 10,200 | 9,912 | 9,616 | 9,315 |
| Sum of the MRB Product Line Discounted Net Cash Flow with the Family Trade Secret in Place (rounded) | 49,500 | | | | |

[a] Assumes a midyear discounting convention.

Exhibit 4
Family Services Company Partners
MRB Trade Secret Intangible Asset
Income Approach
As of January 1, 2022
Scenario II: Family Operating without the Subject Trade Secret in its Business Operations

| MRB Product Line Financial Projection Variables (\$ in 000s): | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 |
|---|-----------------|-----------------|-----------------|-----------------|-----------------|
| Net Sales | \$146,912 | \$161,603 | \$177,764 | \$195,540 | \$215,094 |
| Expected Sales Decrement without the MRB Process | <u>(14,691)</u> | <u>(16,160)</u> | <u>(17,776)</u> | <u>(19,554)</u> | <u>(21,509)</u> |
| Net Sales without Proprietary Process in Operation | \$132,221 | \$145,443 | \$159,987 | \$175,986 | \$193,584 |
| Gross Margin | 34,377 | 37,815 | 41,597 | 45,756 | 50,332 |
| Operating Expenses | <u>(15,205)</u> | <u>(16,726)</u> | <u>(18,399)</u> | <u>(20,238)</u> | <u>(22,262)</u> |
| Earnings before Interest and Taxes | 19,172 | 21,089 | 23,198 | 25,518 | 28,070 |
| Income Tax Expense | <u>(6,902)</u> | <u>(7,592)</u> | <u>(8,351)</u> | <u>(9,186)</u> | <u>(10,105)</u> |
| Operating Income | 12,270 | 13,497 | 14,847 | 16,331 | 17,965 |
| Depreciation Expense | 1,322 | 1,454 | 1,600 | 1,760 | 1,936 |
| Capital Expenditures | (1,322) | (1,454) | (1,600) | (1,760) | (1,936) |
| Contributory Asset Charge | (2,200) | (2,200) | (2,200) | (2,200) | (2,200) |
| Incremental Net Working Capital Investment | <u>(876)</u> | <u>(926)</u> | <u>(1,018)</u> | <u>(1,120)</u> | <u>(1,232)</u> |
| Net Cash Flow | 9,194 | 10,372 | 11,629 | 13,012 | 14,533 |
| Present Value Discount Factor [a] | <u>0.9259</u> | <u>0.7982</u> | <u>0.6881</u> | <u>0.5932</u> | <u>0.5114</u> |
| Discounted Net Cash Flow | 8,512 | 8,279 | 8,002 | 7,718 | 7,432 |
| Sum of the MRB Product Line Discounted Net Cash Flow without the Family Trade Secret in Place (rounded) | 39,900 | | | | |
| Compared to Sum of the MRB Product Line Discounted Net Cash Flow with the Family Trade Secret in Place (rounded) (from Exhibit 2) | <u>49,500</u> | | | | |
| Equals: Indicated Fair Market Value of the Family Trade Secret | <u>9,600</u> | | | | |

[a] Assumes a midyear discounting convention.

Therefore, the income approach estimates a fair market value indication of \$9.6 million for the Family trade secret intangible asset as of January 1, 2022.

Value Conclusion

The analyst decided to assign equal weight to the value indications provided by the two valuation approaches.

Based on the analyses presented in Exhibits 2 through 5, the fair market value of the Family trade secret intangible asset is \$9.3 million (rounded) as of January 1, 2022.

Exhibit 5 presents the valuation synthesis and conclusion for this illustrative trade secret intangible asset valuation.

ILLUSTRATIVE EXAMPLE OF THE MARKET APPROACH

Let's also consider a simplified illustrative application of the income approach to intangible asset valuation.

Let's assume that Pharmaceutical Products Practice ("PPP") is a pharmaceutical products professional services company.

PPP management has developed a new pharmaceutical drug compound company.

PPP management expects that the new drug product will enjoy considerable commercial success.

PPP is a private company. Let's assume that PPP management retains the analyst to value its patent

Exhibit 5
Family Services Company Partners
MRB Trade Secret Intangible Asset
Valuation Synthesis and Conclusion
As of January 1, 2022

| Valuation Approach | Valuation Method | Value Indication (\$ in 000s) | Value Indication Emphasis | Value Conclusion (\$ in 000s) |
|--------------------|---|-------------------------------|---------------------------|-------------------------------|
| Cost Approach | Reproduction Cost New less Depreciation Method | 9,300 | 50% | 4,650 |
| Income Approach | Yield Capitalization Method (based on a “with and without” differential income method analysis) | 9,600 | 50% | <u>4,800</u> |
| | Fair Market Value of the Trade Secret Intangible Asset (rounded) | | | <u>9,500</u> |

intangible asset as part of an overall valuation of PPP. Let’s also assume that the assignment standard of value is fair market value. And, let’s also assume that the appropriate assignment premise of value is value in continued use as part of a going-concern business.

Let’s assume that the valuation date is January 1, 2022.

The analyst decides to apply the income approach and the relief from royalty (“RFR”) valuation method to value the patent related to the new PPP product commonly called Vigor.

The Vigor drug product treats the medical condition called erectile dysfunction (or “ED”).

Illustrative Example Fact Set and Analysis Assumptions

The Vigor drug compound was patented, passed its clinical trials, and received all FDA approvals. Vigor was just introduced on the market. PPP management expects that Vigor will generate about \$400 million in first-year (i.e., 2022) product revenue.

Let’s assume that the analyst concludes a nine-year UEL for the Vigor patent. This analyst UEL conclusion is based on the following:

- The consensus of PPP management
- The life cycle of the previous generations of ED drugs
- Current research stage of potential replacement drugs

- The expected impact of generic pharmaceutical products;
- Published product life estimates from pharmaceutical industry analysts; and
- PPP management plans for developing its own replacement (i.e., more effective) pharmaceutical compound

Market Approach Valuation Variables

Based on due diligence and research, the analyst concludes the following Vigor product expected revenue growth rates:

- 10 percent expected product revenue increase for the first three years
- 0 percent expected product revenue increase for the next three years
- 12 percent expected product revenue decrease for the last three years

The analyst concluded that there will be no residual revenue from the Vigor product after the nine-year UEL. That is, PPP management indicated that it will discontinue the manufacture of Vigor and, instead, manufacture a replacement drug product after year 9.

PPP management expects to incur an expense of approximately \$10 million a year related to the legal defense, marketing, and administration of the Vigor patented drug product.

PPP management projects that this level of expense will increase at the rate of 3 percent per year, regardless of the level of the Vigor product sales revenue.

PPP management believes that any owner of the Vigor drug compound patent would incur such an annual expense.

PPP management also informed the analyst that PPP would continue to incur this type of expense if it was the licensee of the patent (and another company was the licensor of the patent).

The analyst also concluded that a 20 percent pretax present value discount rate is appropriate for this patent valuation, given the risk of the Vigor drug product.

Guideline Intangible Asset License Search Procedures

The analyst researched several online intangible asset license royalty rate data sources.

The analyst searched each database for:

1. the pharmaceutical industry Standard Industrial Classification code and
2. pharmaceutical compound or product patent license agreements.

The analyst also searched for pharmaceutical compound patent licenses entered into within three years of the subject valuation date.

The analyst searched for patent licenses where the royalty payment was expressed primarily as a percent of revenue. And, the analyst scanned all of the identified patent license agreement descriptions for a similar disease (i.e., vascular) and a similar therapy (i.e., a pill-type drug) to the subject Vigor drug product.

Guideline Patent License Agreement Royalty Rates

Based on the above-described patent license search criteria, the analyst selected comparable uncontrolled transactions—or CUTs.

These hypothetical CUT drug patent license agreements are presented in Exhibit 6.

Illustrative Example of a Royalty Rate Adjustment Grid

Based on the comparability factors considered to be the most relevant to the subject valuation, the analyst adjusted the hypothetical guideline license transactional data as presented in Exhibit 7.



Market Approach Valuation Analysis

Based on the uneven expected revenue growth rate and the UEL analyses summarized above, the analyst decided to apply the yield capitalization method (instead of the direct capitalization method).

This RFR method yield capitalization model is an expanded format of the RFR method direct capitalization formula. The Vigor drug patent yield capitalization method analysis is presented in Exhibit 8.

In this simplified illustrative example, and based on the application of the market approach and the RFR method, the analyst concluded that the fair market value of the Vigor patent intangible asset is \$90 million, as of the January 1, 2022, valuation date.

SUMMARY AND CONCLUSION

This discussion summarized the analyst's considerations related to the valuation of the intangible assets of an individual practitioner or of a professional practice/professional services company.

There are numerous situations in which the analyst may be asked to value an individual practitioner's intangible asset or a professional practice entity's intangible asset.

Individual intangible assets may be owned by an individual practitioner or by professional practice owners (who may develop the intangible assets outside of the professional practice)—or by the professional practice or the professional services company itself.

In addition, intangible assets often comprise a large percentage of the total market value of the professional practice or the professional services company entity.

Exhibit 6
Pharmaceutical Products Practice
Vigor Drug Compound Patent Intangible Asset
Hypothetical Guideline Intangible Property Use License Agreements
As of January 1, 2022

| Guideline Drug Patent License | Guideline Drug Patent Licensee | Guideline Drug Patent Licensor | Guideline License Start Date | Guideline License Term Years | Guideline License Royalty Rate % | Other Consideration Paid to the Licensor | Type of Licensed Drug Product |
|-------------------------------|--------------------------------|--------------------------------|------------------------------|------------------------------|----------------------------------|--|-------------------------------|
| 1 | Pfizer, Inc. | Columbia U. | 2019 | 15 | 6 | \$4m [a] | ED |
| 2 | Glaxo Smith Kline | Autogen | 2020 | 10 | 5 | \$10m [b] | Cardiovascular |
| 3 | Johnson & Johnson | Nobel N.V. | 2018 | 12 | 10 | [c] | Anti-obesity |
| 4 | Merck & Co. | All Saints Hospital | 2021 | 10 | 4.5 | [d] | Vascular |
| 5 | Pharmacia & Upjohn | MIT | 2020 | 15 | 5.5 | [e] | Pulmonary Hypertension |
| 6 | Wyeth-Ayerst | MD, LP | 2019 | 20 | 8-10 | [f] | Botanical ED |

[a] Represents an upfront (i.e., development financing) license payment.
[b] Represents a milestone payment after the fifth year of the license.
[c] The license agreement also settles a pending \$50 million litigation between the various license parties.
[d] The physician owners/employees also receive research grants from Merck.
[e] There are also numerous other relationships between the licensor/licensee parties.
[f] The license royalty rate range is based on the level of the drug product annual sales volume.
Note: All of these data are hypothetical and are presented for illustrative purposes only.

Exhibit 7
Pharmaceutical Products Practice
Vigor Drug Compound Patent
Guideline Royalty Rate Adjustment Grid and Selected Subject-Specific Royalty Rate
As of January 1, 2022

| Guideline Drug Patent License | Guideline Patent Royalty Rate % | Guideline Patent Comparable to the Subject Patent [a] | Size of the Guideline Product Market [b] | Growth Rate of Guideline Product Market [b] | Guideline Product Share Relative to the Subject Product [b] | Effect of Other Consideration Paid to the Licensor | Adjusted Guideline Patent Royalty Rate |
|---|---------------------------------|---|--|---|---|--|--|
| 1 | 6 | 3 | 0 | 0 | -- | +5% [c] | 6% |
| 2 | 5 | 2 | ++ | ++ | 0 | +1% [c] | 7% |
| 3 | 10 | 2 | + | 0 | 0 | -2% [c] | 8% |
| 4 | 4.5 | 3 | + | 0 | - | - [c] | 4% |
| 5 | 5.5 | 2 | + | + | 0 | - [c] | 6% |
| 6 | 8-10 | 3 | ++ | - | - | -2% [d] | 7% |
| License Royalty Rate Mean | | | | | | | 6.3% |
| License Royalty Rate Trimmed Mean | | | | | | | 6.5% |
| License Royalty Rate Median | | | | | | | 6.5% |
| License Royalty Rate Mode | | | | | | | <u>6.5%</u> |
| Selected PPP Patent Royalty Rate Conclusion | | | | | | | <u>6.5%</u> |

[a] Based on a scale of 0 to 3; where 0 means that the guideline patent is less comparable to the subject company patents and 3 means that the guideline patent is more comparable to the subject company patents.
 [b] Based on a scale of --, 0, +, ++; where -- is the smallest in size relative to the subject company patented product and ++ is the largest in size relative to the subject company patented product.
 [c] Valuation analyst adjustment, based on an assessment of other factors (1) in the guideline intellectual property license agreement or (2) between the guideline intellectual property licensor and the licensee.
 [d] Valuation analyst adjustment due to the different nature of a botanical drug product versus a pharmaceutical drug product.

Exhibit 8
Pharmaceutical Products Practice
Vigor Drug Compound Patent
Market Approach
Relief from Royalty Method
As of January 1, 2022

| | Projection Period | | | | | | | | |
|--|-------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 | Year 7 | Year 8 | Year 9 |
| PPP Patent Valuation Analysis | | | | | | | | | |
| Patented Product Revenue Expected Growth Rate | 10% | 10% | 10% | 0% | 0% | 0% | -12% | 12% | 12% |
| Patented Product Revenue Amount (year 0 revenue = 400) | 440 | 484 | 532 | 532 | 532 | 532 | 469 | 412 | 363 |
| Selected Patent Inbound License Royalty Rate | <u>6.5%</u> | <u>6.5%</u> | <u>6.5%</u> | <u>6.5%</u> | <u>6.5%</u> | <u>6.5%</u> | <u>6.5%</u> | <u>6.5%</u> | <u>6.5%</u> |
| Projected Relief from License Royalty Expense (rounded) | 29 | 31 | 35 | 35 | 35 | 35 | 30 | 27 | 24 |
| Projected Patent Maintenance Expense (year 0 expense = 10) | <u>10</u> | <u>11</u> | <u>11</u> | <u>11</u> | <u>12</u> | <u>12</u> | <u>12</u> | <u>13</u> | <u>13</u> |
| Projected Net Relief from License Royalty Expense (rounded) | 19 | 20 | 24 | 24 | 23 | 23 | 18 | 14 | 11 |
| Present Value Discount Factor (at 20%, midyear convention) | 0.9091 | 0.7576 | 0.6313 | 0.5261 | 0.4384 | 0.3653 | 0.3045 | 0.2537 | 0.2114 |
| Present Value of Net Relief from License Royalty Expense | <u>17</u> | 15 | 15 | 13 | 10 | 9 | 5 | 4 | 2 |
| Total Present Value of Net Relief from License Royalty Expense | <u>90</u> | | | | | | | | |
| Indicated Fair Market Value of the PPP Vigor Patent (rounded) | <u>90</u> | | | | | | | | |

In all cases, the valuation begins with the identification of the individual practitioner or the professional practice intangible asset ownership rights. And, the intangible asset value is often a function of its potential to earn and/or protect income for the practitioner or the practice intangible asset owner/operator.

For the individual practitioner or the professional practice intangible asset valuation, there are three generally accepted approaches—the cost approach, the market approach, and the income approach.

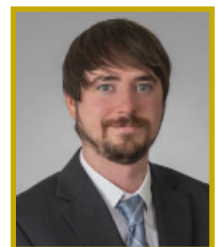
Each of these valuation approaches has the same objective: to arrive at a reasonable value indication for the practitioner or the practice intangible asset.

Within each of the three generally accepted valuation approaches, numerous generally accepted methods and procedures may be appropriate for the particular intangible asset valuation.

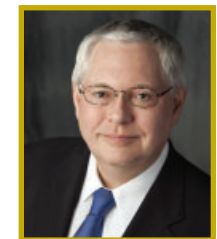
The selection of the appropriate valuation methods and procedures for the individual practitioner or the professional practice intangible asset is based on:

1. the characteristics of the individual intangible asset,
2. the quantity and quality of available data,
3. the purpose and objective of the valuation analysis, and
4. the experience and judgment of the individual valuation specialist.

The final value conclusion for the individual practitioner or the professional practice intangible asset is typically based on a synthesis of the value indications derived from each applicable valuation approach and method.



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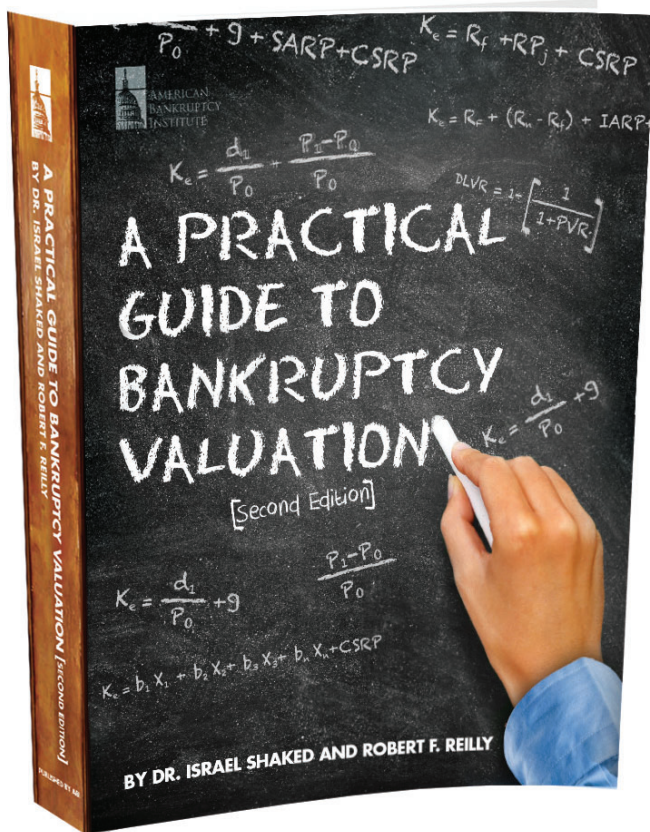


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A CITIZENS COMPANY

A PRACTICAL GUIDE TO BANKRUPTCY VALUATION

Dr. Israel Shaked and Robert F. Reilly

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Glossary



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Best Practices Discussion

Discount for Lack of Marketability in the Professional Practice Valuation

Samuel S. Nicholls and Robert F. Reilly, CPA

A valuation analyst (“analyst”) may be asked to value a noncontrolling ownership interest in a professional practice or a private professional services company for various reasons.

Such a professional practice or professional services company may be a corporation, partnership, limited liability company, or any other form of business entity. Depending (1) on the professional practice valuation approaches and methods applied and (2) on the benchmark data incorporated in the valuation analysis, the analysis may initially conclude the value of the practice or the company ownership interest on a marketable ownership basis. That is, the practice or company ownership interest is valued as if it was freely traded on a public stock exchange. In such an instance, the analyst may have to apply a valuation adjustment to the initial (i.e., marketable) value indication in order to reach the final (i.e., nonmarketable) value conclusion. This discussion summarizes the various factors that an analyst typically considers in the measurement of a discount for lack of marketability (“DLOM”) adjustment associated with the valuation of a noncontrolling ownership interest in a professional practice or a professional services company.

INTRODUCTION

A valuation analyst (“analyst”) may be asked to value a noncontrolling ownership interest in a private professional practice or a private professional services company for a variety of reasons. Such an ownership interest valuation may be developed for a variety of transaction, taxation, financing, accounting, litigation, or other reasons.

Such a valuation analysis may initially conclude the value of the ownership interest on a marketable level of value basis, depending on:

1. the professional practice valuation approaches and methods the analyst applied and
2. the benchmark empirical data the analyst incorporated into the quantitative analysis.

This level of value conclusion often results when the analyst relies on guideline publicly traded company data (or guideline precedent transaction data) to derive valuation pricing multiples, present value discount rates, or direct capitalization rates.

This level of value measures the ownership interest in the professional practice or professional services company as if it was freely traded on an efficient stock exchange. But, the professional practice or company ownership interest is not freely traded. And, the ownership interest valuation should reflect that illiquid condition.

In such an instance, the analyst may have to consider applying a valuation adjustment to the initial (i.e., incorrect level of value) value indication in order to reach the final (i.e., correct level of value) value conclusion for the professional practice or company ownership interest.

This discussion summarizes the various factors that an analyst typically considers in the measurement of a discount for lack of marketability (“DLOM”) adjustment associated with the noncontrolling ownership interest in the professional practice or the professional services company.

This discussion summarizes the following professional practice/professional services company valuation topics:

1. The concepts of ownership interest liquidity and illiquidity
2. The various empirical models that an analyst may consider to measure the DLOM adjustment
3. The application of the DLOM adjustment in the professional practice ownership interest valuation
4. The factors that influence the magnitude of the DLOM adjustment

LIQUIDITY OF THE PROFESSIONAL PRACTICE OR PROFESSIONAL SERVICES COMPANY OWNERSHIP INTEREST

The terms marketability and liquidity are sometimes used interchangeably. However, there are differences between these two terms.

Barron’s Dictionary of Business Terms defines marketability and liquidity as follows:

Marketability. Speed and ease with which a particular security may be bought and sold. A stock that has a large amount of shares outstanding and is actively traded is highly marketable and also liquid. In common use, marketability is interchangeable with liquidity, but liquidity implies the preservation of value when a security is bought or sold.¹

For purposes of this discussion, the terms marketability and lack of marketability apply to a fractional ownership interest in a private professional practice or private professional services company.

The terms liquidity and lack of liquidity (or illiquidity) apply either to an overall business entity or to a controlling ownership interest in the business entity. The investment attribute of marketability is not an either/or proposition.

That is, there are various degrees of marketability. There is a spectrum of professional practice or

company ownership interest marketability, ranging from fully marketable to fully nonmarketable.

A publicly traded security can typically be converted into cash quickly, at a certain price, and at a low transaction cost. This is the typical benchmark for a fully marketable security.

At the other end of the marketability spectrum is an ownership interest in the equity of a private professional practice or company that (1) pays no dividends or other distributions, (2) requires capital contributions, and (3) restricts or limits the ownership of the practice or the company to certain individuals.

REASONS TO APPLY A VALUATION ADJUSTMENT TO THE PROFESSIONAL PRACTICE OR PROFESSIONAL SERVICE COMPANY OWNERSHIP INTEREST

The population of potential buyers for most professional practice or company ownership interests is a small percentage of the population of potential buyers for most publicly traded securities.

In fact, it may be illegal for an individual owner or for a professional practice or company issuer to sell securities to the general public without first registering the security offering with either the Securities Exchange Commission (“SEC”) or the state corporation commission. Such a security offering registration is an expensive and time-consuming process.

Furthermore, a noncontrolling equity owner cannot register closely held ownership interests for public trading. Only the issuer professional practice or company itself can register its securities for public trading.

Besides any problems associated with selling closely held securities, it is also difficult for the professional practice or company owners to hypothecate these securities. The value of the professional practice or company securities is further impaired by the unwillingness of banks and other lending institutions to accept such ownership interests as loan collateral.

BENCHMARK FROM WHICH TO APPLY THE VALUATION ADJUSTMENT

In the typical valuation of a professional practice or professional services company, the analyst

applies some combination of three generally accepted professional practice/company valuation approaches:

1. Market approach
2. Income approach
3. Asset-based approach

Depending on the individual valuation variables applied and the individual valuation methods applied in the analysis, these three valuation approaches may conclude value indications on either of the following:

1. A controlling ownership interest level of value
2. A noncontrolling ownership interest level of value

In a typical application of the three generally accepted professional practice/company valuation approaches, the resulting value indications are concluded on a marketable ownership interest basis.

The magnitude of any appropriate DLOM adjustment depends on the specific facts and circumstances related to the following:

1. The individual professional practice or professional services company
2. The specific nonmarketable practice/company ownership interest

ANALYTICAL MODELS THAT MAY BE APPLIED TO MEASURE THE DLOM ADJUSTMENT

The analyst often considers two types of models to measure any appropriate DLOM adjustment:

1. Empirical models
2. Theoretical models

The empirical models generally use analyses that are based on empirical capital market transaction observations—rather than on theoretical economic principles.

The theoretical models generally do not rely on actual capital market pricing evidence. Rather, theoretical models are based on fundamental micro-economic relationships.

Empirical Models

Empirical models rely on actual transactional data to provide evidence measuring any appropriate DLOM adjustment.

There are two categories of studies that analysts often consider to measure the DLOM adjustment for the noncontrolling professional practice or professional services company ownership interests:

1. Studies of price discounts on the sales of restricted shares of publicly traded companies (i.e., the restricted stock studies)
2. Studies of price discounts on private stock sale transactions prior to an initial public offering (i.e., the pre-IPO studies)

These data are applicable to an initial—or unadjusted—value indication that represents the estimated price at which the professional practice or company ownership interests could be sold if they were registered and freely traded in a public stock exchange.

Theoretical Models

Unlike empirical models, theoretical models do not derive a DLOM adjustment conclusion directly from transactional data.

The theoretical models that may be used to estimate the DLOM adjustment for the professional practice or company ownership interest valuation generally fall into two categories:

1. Option pricing models (“OPMs”)
2. Discounted cash flow (“DCF”) models

THE EMPIRICAL MODELS

Restricted Stock Studies

Publicly traded companies often raise capital by completing a private placement of debt or equity securities. In a private placement of equity securities, a company can issue either:

1. registered stock to general investors or
2. unregistered (i.e., restricted) stock to an accredited investor.

Registered stock typically includes the shares of publicly traded companies that can be freely traded on an organized stock exchange. Unregistered shares of stock are not registered for trading on a stock exchange.

When publicly traded companies issue restricted (meaning unregistered) stock, the restricted stock is typically sold at a price discount compared to the price of the registered publicly traded stock.

Publicly traded companies are sometimes willing to accept a price discount on their sale of restricted stock. This is because the time and cost of registering the new stock with the SEC may make the stock issuance/capital formation impractical.

These observed price discounts (i.e., the company's public stock price compared to the same company private stock price) indicate a DLOM. These stock price discount data are the basis for the restricted stock studies discussed below.

SEC Rule 144² governs the purchase and sale of stock issued in unregistered private placements. According to the SEC, "When you acquire restricted securities or hold control securities, you must file an exemption from the SEC's registration requirements to sell them in the marketplace. Rule 144 allows public resale of restricted and control securities if a number of conditions are met."³

The conditions mentioned in SEC Rule 144 include the following:

1. Investment holding period
2. Adequate current information
3. A trading volume formula
4. Ordinary brokerage transactions
5. Filing of a notice with the SEC

The investment holding period restrictions on the transfer of restricted stock eventually lapse, usually after a period ranging from six months to two years.⁴

At that point, the trading volume formula is typically the most restrictive sale condition of SEC Rule 144. The trading volume formula allows the restricted securities to be "dribbled out" into the marketplace.

Depending on the size of the block of the subject securities, the dribble-out formula may require the investor to sell small portions of the securities over a multiyear period.

Rather than dribble out the sale of the restricted securities, the restricted stock owner can sell the securities in a privately negotiated transaction, subject to the Securities Act of 1933, Section 4(1) and Section 4(2).

Until 1995, restricted stock sale transactions had to be reported to the SEC. Since 1995, analysts have collected restricted stock sale transaction data from private sources.

Therefore, there are data available regarding the price of private transactions in restricted securities. These price data are sometimes used for comparison

with the price of the same company's unrestricted securities eligible for trading on the open market.

The conclusions of this restricted stock pricing evidence are discussed below.

Restricted Stock Study Conclusions

Exhibit 1 summarizes 20 restricted stock studies (i.e., 18 total studies, with 2 studies split into 2 subsets) that cover several hundred stock sale transactions spanning the late 1960s through 2013.

These studies generally indicate a decrease in the amount of the DLOM after 1990. The restricted stock transactions analyzed in the studies covering the 1968 to 1988 period (where the average indicated DLOM was approximately 35 percent) were generally less marketable than the restricted stocks analyzed after 1990 (where the average indicated DLOM was typically less than 25 percent).

Analysts sometimes attribute this decrease in the implied price discount to the following factors:

1. The increase in volume of privately placed stock under SEC Rule 144(a)
2. The change in the minimum SEC-required holding period under Rule 144—from two years to one year—that took place as of April 29, 1997⁵

The increased volume was the result of a Rule 144 amendment in 1990 that allowed qualified institutional investors to trade unregistered securities among themselves. By increasing the number of potential buyers of restricted securities, the marketability of these securities generally increased. As it became easier to find a buyer for restricted securities after 1990, the average restricted stock price discount decreased.

The same trend occurred after the SEC-required holding period decreased from two years to one year in 1997.

On December 17, 2007, the SEC issued revisions to Rules 144.⁶ The revisions included shortening the holding period for restricted securities of issuers that are subject to the Securities Exchange Act of 1934 reporting requirements ("reporting companies") from one year to six months.

"Under the amended Rules 144, after six months, if the issuer is a reporting company, . . . nonaffiliates may sell restricted securities without further limitations, including manner-of-sale or volume limitations."⁷

The holding period remains at one year for non-reporting issuers. This amendment became effective on February 15, 2008.

Exhibit 1
Restricted Stock Studies
Summary of Implied DLOM Adjustments

| Restricted Stock Study | Restricted Stock Study Observation Period | Observed Average or Median Price Discount |
|-------------------------------------|---|---|
| SEC Overall Average | 1966–69 | 25.8% |
| SEC Nonreporting OTC Companies | 1966–69 | 32.6% |
| Milton Gelman | 1968–70 | 33.0% |
| Robert R. Trout | 1968–72 | 33.5% |
| Robert E. Moroney | 1969–72 | 35.6% |
| J. Michael Maher | 1969–73 | 35.4% |
| Standard Research Consultants | 1978–82 | 45.0% |
| Willamette Management Associates | 1981–84 | 31.2% |
| Hertzel and Smith [a] | 1980–87 | 20.1% |
| William L. Silber | 1981–88 | 33.8% |
| Bajaj, Denis, Ferris, and Sarin [b] | 1990–95 | 22.2% |
| Johnson Study | 1991–95 | 20.0% |
| Management Planning, Inc. | 1980–96 | 27.0% |
| FMV Opinions, Inc. [c] | 1980–14 | 19.3% |
| Greene and Murray | 1980–12 | 24.9% |
| Columbia Financial Advisors, Inc. | 1996–97 | 21.0% |
| Columbia Financial Advisors, Inc. | 1997–98 | 13.0% |
| LiquiStat | 2005–06 | 32.8% |
| Angrist, Curtis, and Kerrigan | 1980–09 | 15.9% |
| Stout Risius Ross | 2005–10 | 10.9% |

[a] The observed price discount of 20.1 percent represents the overall average private placement discount reported in this study.

[b] This study attributes price discount to factors other than marketability (i.e., compensation for the cost of assessing the quality of the firm and for the anticipated costs of monitoring the future decisions of its managers).

[c] Represents results of the latest *published* study. This database is now called the Stout Restricted Stock Study. It is routinely updated and available for purchase at www.bvmarketdata.com.

Analysts typically compare the market for the professional practice or professional services company with the market for restricted securities. If the expected holding period for the professional practice or company securities is two years or greater, it may be more appropriate to measure any DLOM adjustment based on the restricted stock studies conducted prior to 1990.

Alternatively, if the professional practice or company securities are likely to be liquidated within six months or one year, the post-1990 studies may be more meaningful.

Another characteristic of the restricted stock studies is the wide range in price discounts observed within each study. Although the average price discounts calculated in the restricted stock studies are similar, the range of price discounts observed in each study is large, ranging from a

price premium to price discounts approaching 90 percent.

One explanation for the wide range in price discounts is the myriad of company-specific and security-specific factors that affect the DLOM adjustment.

While consideration of a DLOM adjustment appears to be indicated from the studies, it is up to the analyst to consider how the particular practice or company ownership interest relates to the price discounts observed in the restricted stock studies.

Restricted shares of public stock may not (temporarily) be traded directly on a stock exchange. However, in a short time period, the investor has certainty that the trading restrictions will lapse. In contrast, the professional practice or company securities company may never be traded on a public stock exchange.

“A pre-IPO study examines sale transactions in the securities of a private company that has subsequently achieved a successful IPO.”

The prospect of any efficient marketability is much lower for closely held securities compared to restricted public company shares.

Therefore, the appropriate level of any DLOM adjustment related to professional practice or professional services company securities may be greater than the price discounts concluded by the restricted stock studies.

The Pre-IPO Studies

The second type of empirical data is found in the pre-IPO studies. A pre-IPO study examines sale transactions in the securities of a private company that has subsequently achieved a successful IPO.

In a pre-IPO study, the implied DLOM adjustment is quantified by analyzing the difference between the following:

1. The public market price of the IPO
2. The private transaction price at which a stock was sold prior to the IPO

The following discussion summarizes three groups of pre-IPO studies.

The Emory Studies

A number of studies were conducted under the direction of John Emory, former president of Emory & Co. in Milwaukee, Wisconsin.⁸

These studies covered various time periods from 1980 through 2000.⁹

The various Emory studies excluded from consideration the following types of companies:

1. Development stage companies
2. Companies with a history of real operating losses
3. Companies with an IPO price less than \$5 per share
4. Foreign companies
5. Banks, saving and loans, real estate investment trusts, and utilities

Except for the 1997 through 2002 study, Emory used the same methodology for each of the studies. The 1997 through 2002 study focused on sale transactions of common and convertible preferred stock, and they did not exclude companies on the basis of financial strength.

The observations in each study consisted of companies with an IPO in which Emory's firm either participated or received a prospectus.

Emory and his assistants analyzed the prospectus for each of the 4,088 offerings to determine the relationship between the following:

1. The IPO price
2. The price at which the latest private transaction took place (up to five months prior to the IPO)

The mean and median price discounts from all of the transactions analyzed in the Emory pre-IPO studies equal 46 percent and 47 percent, respectively.¹⁰

The fact that these price discounts are greater than the restricted stock study price discounts can be explained. The pre-IPO stock sales occurred when there was not an established secondary market for the subject securities.

Exhibit 2 summarizes the results of the various Emory studies.

Valuation Advisors Studies

Valuation Advisors, LLC (“VA”), maintains a database that includes over 3,500 pre-IPO transactions that occurred within two years of an IPO.¹¹

These transactions are arranged into five time periods: four 3-month intervals for the 12 months immediately before the IPO, and a single period for the time frame from 1 to 2 years before the IPO. The transactions are also arranged by type of security (i.e., stock, convertible preferred stock, or option).

VA developed a pre-IPO study for each year between 1995 and 2012. Exhibit 3 summarizes the results of the VA studies.

Willamette Management Associates Studies

Willamette Management Associates (“WMA”) developed 18 pre-IPO studies covering the period of 1975 through 1997, and an additional study covering the five years 1998 through 2002. The studies included only private market stock sale transactions that were considered to be on an arm's-length basis.

The transactional data analyzed in the 1998–2002 WMA pre-IPO study included the following:

1. Sales of closely held stock in private placements
2. Repurchases of treasury stock by the closely held company

Transactions involving the granting of employee, executive, or other compensation-related stock options were eliminated from consideration in the 1998–2002 study. Transactions involving stock sales to corporate insiders or other related parties were eliminated from consideration in the 1998–2002 study.¹²

Due to the small sample size of identified transactions in 2001 and 2002, the data from those years were excluded from the analysis.

The results of the various WMA pre-IPO studies are summarized in Exhibit 4.

In most cases, the WMA pre-IPO average price discounts were greater than the restricted stock average price discounts. One explanation for this result is the fact that—unlike pre-IPO transactions—restricted stock transactions involve companies that already have an established public trading market.

Pre-IPO Study Conclusions

The pre-IPO studies cover hundreds of transactions over more than 30 years. Price differences between private transaction prices and public market prices varied under different market conditions, ranging from about 40 to 60 percent (after eliminating the outliers).

The pre-IPO studies may provide empirical evidence of the level of DLOM appropriate for privately owned securities. This is because companies in the pre-IPO studies may more closely resemble the professional practice or professional services company securities to which the DLOM adjustment is being applied.

THE THEORETICAL MODELS

There are two types of theoretical DLOM adjustment measurement models:

Exhibit 2 Emory Pre-IPO Studies Implied DLOM Adjustment Results

| Pre-IPO Study | Number of Prospectuses Reviewed | Number of Qualifying Transactions | Implied Price Discount | |
|---------------|---------------------------------|-----------------------------------|------------------------|--------|
| | | | Mean | Median |
| 1980–1981 | 97 | 12 | 59% | 68% |
| 1985–1986 | 130 | 19 | 43% | 43% |
| 1987–1989 | 98 | 21 | 38% | 43% |
| 1989–1990 | 157 | 17 | 46% | 40% |
| 1990–1991 | 266 | 30 | 34% | 33% |
| 1992–1993 | 443 | 49 | 45% | 43% |
| 1994–1995 | 318 | 45 | 45% | 47% |
| 1995–1997 | 732 | 84 | 43% | 41% |
| 1997–2000 [a] | 1,847 | 266 | 50% | 52% |

[a] This is an expanded study. The expanded study focused on sale transactions of common and convertible preferred stock, and did not exclude companies on the basis of their financial strength.

Note: The results above are from “Underlying Data in Excel Spreadsheet for 1980–2000 Pre-IPO Discount Studies, as Adjusted October 10, 2002,” located at www.emoryco.com/valuation-studies.shtml.

Exhibit 3 Valuation Advisors Pre-IPO Study Implied Median DLOM Adjustment Results

| IPO Year | Period before the IPO in Which the Transaction Occurred | | | | | Number of Transactions |
|-------------------|---|------------|------------|--------------|-----------|------------------------|
| | 0–3 Months | 4–6 Months | 7–9 Months | 10–12 Months | 1–2 Years | |
| 1995 | 37.82% | 28.62% | 60.40% | 50.33% | 60.64% | 34 |
| 1996 | 30.83% | 52.97% | 56.37% | 69.38% | 71.81% | 270 |
| 1997 | 34.18% | 50.00% | 67.12% | 76.01% | 80.00% | 212 |
| 1998 | 23.35% | 46.67% | 68.93% | 71.41% | 71.91% | 212 |
| 1999 | 30.77% | 53.89% | 75.00% | 76.92% | 82.00% | 694 |
| 2000 | 28.70% | 45.08% | 61.51% | 68.92% | 76.64% | 653 |
| 2001 | 14.74% | 33.17% | 33.38% | 52.06% | 51.61% | 115 |
| 2002 | 6.15% | 17.33% | 21.88% | 39.51% | 55.00% | 81 |
| 2003 | 28.77% | 22.30% | 38.36% | 39.71% | 61.37% | 123 |
| 2004 | 16.67% | 22.68% | 40.00% | 56.25% | 57.86% | 334 |
| 2005 | 14.75% | 26.10% | 41.68% | 46.11% | 45.45% | 296 |
| 2006 | 23.47% | 20.69% | 40.23% | 46.51% | 56.27% | 264 |
| 2007 | 12.67% | 32.55% | 43.69% | 56.00% | 54.17% | 459 |
| 2008 | 20.00% | 24.21% | 45.85% | 52.17% | 41.18% | 41 |
| 2009 | 6.16% | 31.85% | 26.82% | 41.00% | 34.87% | 108 |
| 2010 | 15.81% | 29.89% | 44.42% | 47.54% | 51.88% | 358 |
| 2011 | 23.27% | 34.62% | 43.26% | 50.78% | 62.10% | 281 |
| 2012 | 18.86% | 24.07% | 28.90% | 35.48% | 44.78% | 292 |
| 1995–2012 Average | 21.50% | 33.15% | 46.54% | 54.23% | 58.86% | |
| 2008–2012 Average | 16.82% | 28.93% | 37.85% | 45.39% | 46.96% | |

Source: Brian K. Pearson. “Valuation Advisors’ Lack of Marketability Discount Study™,” *Business Valuation Resources Teleconference*, August 23, 2007 (1995–2006); Valuation Advisors database (2007–2012).

Exhibit 4 Willamette Management Associates Pre-IPO Studies Implied DLOM Adjustment Results

| Time Period Analyzed | Number of Companies Analyzed | Number of Transactions Analyzed | Standard Mean Price Discount | Trimmed Mean Price Discount [a] | Median Price Discount |
|----------------------|------------------------------|---------------------------------|------------------------------|---------------------------------|-----------------------|
| 1975-78 | 17 | 31 | 34.0% | 43.4% | 52.5% |
| 1979 | 9 | 17 | 55.6% | 56.8% | 62.7% |
| 1980-82 | 58 | 113 | 48.0% | 51.9% | 56.5% |
| 1983 | 85 | 214 | 50.1% | 55.2% | 60.7% |
| 1984 | 20 | 33 | 43.2% | 52.9% | 73.1% |
| 1985 | 18 | 25 | 41.3% | 47.3% | 42.6% |
| 1986 | 47 | 74 | 38.5% | 44.7% | 47.4% |
| 1987 | 25 | 40 | 36.9% | 44.9% | 43.8% |
| 1988 | 13 | 19 | 41.5% | 42.5% | 51.8% |
| 1989 | 9 | 19 | 47.3% | 46.9% | 50.3% |
| 1990 | 17 | 23 | 30.5% | 33.0% | 48.5% |
| 1991 | 27 | 34 | 24.2% | 28.9% | 31.8% |
| 1992 | 36 | 75 | 41.9% | 47.0% | 51.7% |
| 1993 | 51 | 110 | 46.9% | 49.9% | 53.3% |
| 1994 | 31 | 48 | 31.9% | 38.4% | 42.0% |
| 1995 | 42 | 66 | 32.2% | 47.4% | 58.7% |
| 1996 | 17 | 22 | 31.5% | 34.5% | 44.3% |
| 1997 | 34 | 44 | 28.4% | 30.5% | 35.2% |
| 1998 | 14 | 21 | 35.0% | 39.8% | 49.4% |
| 1999 | 22 | 28 | 26.4% | 27.1% | 27.7% |
| 2000 | 13 | 15 | 18.0% | 22.9% | 31.9% |

[a] Excludes the highest and lowest deciles of indicated discounts.

Source: Pamela Garland and Ashley Reilly, "Update on the Willamette Management Associates Pre-IPO Discount for Lack of Marketability Study for the Period 1998 Through 2002," *Insights* (Spring 2004).

1. OPMs
2. DCF models

Option Pricing Models

OPMs are based on the premise that the cost to purchase a stock option is related to the DLOM adjustment. The following discussion summarizes four DLOM studies that rely on option-pricing theory.

The Chaffe Study

David Chaffe authored a 1993 study in which he related the cost to purchase a European put option¹³ to the DLOM adjustment.

Chaffe concluded that "if one holds restricted or non-marketable stock and purchases an option to sell those shares at the free market price, the holder has, in effect, purchased marketability for those shares. The price of that put is the discount for lack of marketability."¹⁴

Chaffe relied on the Black-Scholes option pricing model to estimate the option price. The inputs in the Black-Scholes model are as follows:

1. Stock price
2. Strike price
3. Time to expiration
4. Interest rate
5. Volatility

In the Chaffe model, the stock price and strike price equal the marketable value of the private company stock as of the valuation date; the time to expiration equals the time the securities are expected to remain nonmarketable; the interest rate is the cost of capital; and, volatility is a judgmental factor based on volatility of guideline publicly traded stocks.

To apply an OPM to a private company, each of these variables must be determined. Some variables, such as the interest rate and strike price, are relatively easy to measure. Other variables, such as the holding period and volatility, are more difficult to measure.

According to Chaffe, the volatility for small privately owned companies is likely to be 60 percent or greater. Chaffe reached this conclusion based on the volatility for small public companies that were traded in the over-the-counter market.

According to the study, the appropriate DLOM adjustment for a private practice or company security with a two-year required holding period and a volatility between 60 percent and 90 percent is between 28 percent and 41 percent.

According to Chaffe, "considering that volatility for shares of most smaller, privately held companies fit the 'VOL 60%-70%-80%-90%' curves, a range of put prices of approximately 28% to 41% of the marketable price is shown at the two-year intercept. At the four-year intercept, these ranges are 32% to 49%, after which time increases do not substantially change the put price."¹⁵

Chaffe indicated that his findings were downward-biased due to the reliance on European options

in the model. Chaffe concluded that his findings should be viewed as a minimum applicable DLOM adjustment.

The Longstaff Study

Francis Longstaff conducted a study that relies on stock options to estimate the DLOM adjustment.¹⁶

While Chaffe based his study on avoiding losses, Longstaff based his study on unrealized gains. Another difference between the two studies is that the Longstaff study provides an estimate for the upper limit on the value impact for marketability.

The Longstaff study is based on the price of a hypothetical “lookback” option.¹⁷

The Longstaff study assumes an investor has a single-security portfolio, perfect market timing, and trading restrictions that prevent the security from being sold at the optimal time. The value of marketability, based on these assumptions, is the payoff from an option on the maximum value of the security, where the strike price of the option is stochastic.

Exhibit 5 summarizes the Longstaff study results.

For a five-year holding period and 30 percent standard deviation, the indicated DLOM adjustment is over 65 percent. Longstaff analyzed securities with a volatility between 10 percent and 30 percent because “this range of volatility is consistent with typical stock return volatilities.”¹⁸

However, small capitalization stocks (such as those traded over the counter and analyzed by Chaffe) typically have greater volatility.

With volatility estimates greater than 50 percent, the Longstaff study indicated DLOM adjustment exceeds 100 percent. Some analysts have suggested that the percentage result from the Longstaff model (and other OPMs) is actually a price premium and not a price discount.

Ashok Abbott wrote that, “Often, however, the value of a put option premium, estimating the cost of liquidity, is presented incorrectly as the discount for lack of liquidity. This is similar to the merger premium being treated as a discount for lack of control. Neglecting to convert the option premium to the applicable discount creates the illusion that the estimated discounts are greater than 100%, an impossible solution.”¹⁹

Martin Greene wrote, “Frequently, appraisers compute the option and assume their result is a discount. In reality, the models produce a premium, which must then be converted to a discount.”²⁰

There is not universal agreement as to whether the OPM analyses indicate a price premium or a

| Exhibit 5 Longstaff Study Upper Bounds for the Implied DLOM Adjustment | | | |
|--|--------------------------------|--------------------------------|--------------------------------|
| Marketability Restriction Period | Standard Deviation = 10% | Standard Deviation = 20% | Standard Deviation = 30% |
| 1 Day | 0.421 | 0.844 | 1.268 |
| 5 Days | 0.944 | 1.894 | 2.852 |
| 10 Days | 1.337 | 2.688 | 4.052 |
| 20 Days | 1.894 | 3.817 | 5.768 |
| 30 Days | 2.324 | 4.691 | 7.100 |
| 60 Days | 3.299 | 6.683 | 10.153 |
| 90 Days | 4.052 | 8.232 | 12.542 |
| 180 Days | 5.768 | 11.793 | 18.082 |
| 1 Year | 8.232 | 16.984 | 26.276 |
| 2 Years | 11.793 | 24.643 | 38.605 |
| 5 Years | 19.128 | 40.979 | 65.772 |

price discount. Analysts who rely on the OPM analyses should carefully consider how to use these studies to estimate the DLOM adjustment.

The Finnerty Study

John Finnerty conducted an option-pricing study that “tests the relative importance of transfer restrictions on the one hand and information and equity ownership concentration effects on the other in explaining private placement discounts.”²¹

The Finnerty option-pricing study is an extension of the Longstaff study. Unlike Longstaff, Finnerty did not assume that investors have perfect market timing ability. Instead, Finnerty modeled the DLOM as the value of an average strike put option.

In addition to analyzing stock options, Finnerty analyzed 101 restricted stock private placements that occurred between January 1, 1991, and February 3, 1997.

The Finnerty private placement study concluded price discounts of 20.13 percent and 18.41 percent for the day prior to the private placement and for 10 days prior to the private placement, respectively.

With regard to his option-pricing study, Finnerty concluded that his model:

calculates transferability discounts that are consistent with the range of discounts observed empirically in letter-stock private placements for common stocks with volatilities between $\delta = 30$ percent and $\delta = 70$ percent but the implied discounts are greater than (less than) those predicted by the model for lower (higher) volatilities.²²

Finnerty reported the following observations about the importance of dividends, volatility, and the DLOM adjustment:

My model implies that when the stock price volatility is under 30 percent, the appropriate discount is smaller than the customary discount range of about 25 percent to 35 percent. For example, when δ is between 20 percent and 30 percent and there is a two-year restriction period, the proper discount is in the range from 15.76 percent to 20.12 percent for a non-dividend-paying stock and in the range from 11.50 percent to 15.96 percent for a stock yielding 3.0 percent. The halving of the initial restriction period under Rule 144 since February 1997 has roughly halved the transferability discount.²³

The Long-Term Equity Anticipation Securities Studies

In September 2003, Robert Trout published a study analyzing long-term equity anticipation securities (“LEAPS”) and the DLOM adjustment.²⁴

Ronald Seaman updated the Trout LEAPS study several times. The most recent update was published in September 2013.²⁵

Each LEAPS study was conducted using a similar research logic and research design. The following discussion summarizes these studies.

A long-term equity anticipation security is essentially a long-term stock option that offers price protection for up to two years into the future. Therefore, an investor who desires protection against stock price declines can purchase a LEAPS put option.

The LEAPS studies examined the cost of buying LEAPS put options and concluded that the cost of the LEAPS put option divided by the stock price indicates the DLOM adjustment.

Trout examined nine LEAPS as of March 2003 with options expiring January 2005. The nine LEAPS were for large companies with actively traded securities.²⁶

According to Trout, “The data concerning the relative cost of puts as an insurance premium indicate an insurance premium cost equal to about 24 percent of the price. This finding suggests that the minimum discount that one should assign for the lack of marketability of holding privately held stock is at least 24 percent.”²⁷

The 2013 Seaman study updated and extended the Trout study through November 2012.

The Seaman study considered the relationship between the price of the LEAPS (i.e., the price discount) and the following variables:

1. Company size
2. Company risk
3. Latest year profit margins
4. Latest year return on equity
5. Company industry

The Seaman study conclusions are summarized as follows:

1. Company size: Revenue size has a major effect on the cost of price protection with smaller levels of revenue associated with larger price discounts.
2. Company risk: Company risk has a large effect on discounts, with higher risk companies, as measured by a company’s beta, associated with a larger price discount.
3. Latest year profit margin: Company profitability has a mild (but not a major) effect on marketability discounts.
4. Return on equity: The company’s latest year return on equity has some effect on discounts particularly at the lower end of returns. For positive returns on equity, there is a minor effect on price discounts.
5. Industry: The size of the discount varies by industry, but the price discounts vary even more by the individual company.²⁸

The Seaman study presented the following observation with regard to the cost of price protection:

[T]he costs of price protection are not constant but vary significantly over time. Economic conditions in November 2008 (recession) caused discounts to double or more over the August 2006 period. By November 2009 economic conditions had moderated. The costs of price protection had gone down by about one-third but were still from 30% to 50% above August 2006 levels.²⁹

The LEAPS studies concluded that the observed DLOM adjustment may be viewed as benchmark minimum price discounts when applied to the private company valuation.

This LEAPS study conclusion is based on the following observations:

1. The underlying securities on which the LEAPS were based are often much larger than the privately held subject company.
2. The underlying securities on which the LEAPS were based are marketable.
3. The LEAPS themselves can be sold at any time during the holding period.
4. There is a known liquidity event (i.e., the sale of the underlying security) for LEAPS.

Option Pricing Model Studies Conclusions

The OPM studies indicate similar price discounts to the empirical studies discussed previously. In the Chaffe, Longstaff, and Finnerty studies, the appropriate DLOM adjustment for a private company ownership interest (given certain volatility assumptions) reaches 65 percent.

In the LEAPS studies, the concluded price discount is much lower. However, the authors conclude that the indicated price discount represents a minimum DLOM adjustment.

OPM studies generally only consider the factors that affect option pricing, including:

1. holding period and
2. volatility.

Although other factors are considered in the OPMs, the holding period and the volatility factors have the greatest impact on the option prices.

Therefore, OPM studies may understate the measurement of the DLOM adjustment. This is because OPM studies ignore other factors that may reduce the marketability for closely held company securities (e.g., contractual transferability restrictions).

Basing the size of the DLOM adjustment on the two OPM factors appears reasonable. The holding period relates to the duration of time restricted stock must be held and risk relates to volatility. As the restricted stock studies indicate, the longer the required holding period, the greater the price discount that a buyer expects.

Volatility is directly related to the DLOM adjustment. When an investor owns a security that is restricted from trading, that investor assumes the risk of:

1. not being able to sell the investment if the value begins to decline and



2. not being able to sell the investment to reallocate funds to another investment.

The first risk factor is affected by highly volatile stocks. As volatility increases, the risk of stock price depreciation increases. As volatility increases, the risk related to holding a nonmarketable security likewise increases.

Due to these factors, the OPM studies may provide a general methodology for analyzing the DLOM adjustment.

The Discounted Cash Flow Models

The DCF method is based on the financial principle that value equals the present value of future income.

Christopher Mercer and Travis Harms described how the DCF model relates to the DLOM adjustment:

Quantitative analyses therefore estimates the value of illiquid interests based on the expectation of benefits (distributions or dividends and proceeds of ultimate sales) over relevant expected holding periods using appropriate discount rates to equate with present values. The process of doing this analysis, in the context of valuing a business at the marketable minority interest level, determines the applicable marketability discount.³⁰

The following discussion summarizes two studies that rely on an application of the DCF method.

The Quantitative Marketability Discount Model

Developed by Christopher Mercer, the quantitative marketability discount model (“QMDM”) is a shareholder-level DCF model that uses a quantitative analysis to calculate the DLOM adjustment.

The QMDM calculates the DLOM adjustment based on the following:

1. The expected growth rate in the subject company value
2. The expected interim cash flow
3. The expected holding period
4. The required holding period return

Mercer provides guidance with regard to estimating these four factors in the book *Quantifying Marketability Discounts*.³¹

In the application of the QMDM, the analyst values the closely held company at the entity level, resulting in a value as if the closely held security was readily marketable.

Next, the analyst estimates a shareholder level value. The shareholder level value represents the nonmarketable value of the closely held security.

To calculate the shareholder level value, the analyst increases the value of the subject company by the growth rate during the expected holding period.

Next, the analyst discounts the closely held company future value using the required holding period return. Then, the analyst adds the present value of the dividend stream received during the holding period to this present value.

The resulting value equals the shareholder level value. The calculation of one minus the ratio of shareholder level value to entity level value equals the DLOM adjustment.

The DLOM adjustment measured using the QMDM model is highly subject to the model inputs. In the federal estate tax matter *Estate of Weinberg v. Commissioner*, the U.S. Tax Court noted that, “slight variations in the assumptions used in the model produce dramatic differences in the results.”³²

In the federal estate tax matter *Estate of Janda v. Commissioner*, the Tax Court was concerned with the magnitude of the DLOM adjustment calculated using the QMDM model. In the *Janda* decision, the Tax Court noted, “We have grave doubts about the reliability of the QMDM model to produce reasonable discounts, given the generated discount of over 65%.”³³

The Tabak Model

David Tabak developed a DCF model used to estimate the DLOM adjustment based on the capital asset pricing model (“CAPM”).

The Tabak model “focuses on the extra risks imposed on the owner of a security or interest in a business enterprise, and not on the lack of access to capital. In brief, the theory uses market data on the additional return that investors require in order to hold a risky asset, measured by the equity risk premium, to extrapolate the extra return that the holder of an illiquid asset would require.”³⁴

Discounted Cash Flow Model Conclusions

The DCF models provide an analysis regarding the cause and the measurement of the DLOM adjustment. The QMDM results are particularly sensitive to the model inputs.

In addition, the model inputs used in the QMDM and in the Tabak model require the application of analyst judgment.

SPECIFIC TRANSFERABILITY RESTRICTION CONSIDERATION

The restricted stock studies discussed above present a multitude of factors that may affect the DLOM for private practices and professional services companies. Certain factors that affect the DLOM adjustment appear frequently. For example, many of the restricted stock studies indicate that professional practice or company size, block size, and dividends affect the DLOM adjustment.

There are other factors that affect a professional practice or professional services company that are not measurable in the restricted stock studies. These factors include contractual restrictions, such as a shareholder agreement, right of first refusal, buy-sell agreement, and the like.

Contractual restrictions can severely limit the marketability of the ownership in a private professional practice or professional services company.

The following list presents some of the contractual restrictions that may affect the DLOM adjustment:

1. Buy-sell agreements
2. Shareholder, limited liability company member, or partnership agreements
3. Rights of first refusal
4. Other contractual transferability restrictions

The more restrictive the agreement or provision, the greater the amount of the DLOM adjustment, all other factors held equal.

OTHER FACTORS AFFECTING THE DLOM MEASUREMENT

The studies discussed above describe a starting point to measure the DLOM adjustment. However, the specific facts and circumstances of each analysis suggest the appropriate DLOM adjustment.

It is a matter of analyst judgment to select a DLOM adjustment based on the following:

1. The empirical DLOM evidence
2. The theoretical DLOM evidence
3. The specific facts and circumstances of each analysis

In the U.S. Tax Court case *Mandelbaum v. Commissioner*,³⁵ Judge David Laro cited nine specific (but nonexclusive) factors for analysts to consider in developing a DLOM adjustment:

1. Financial statement analysis
2. Dividend history and policy
3. Nature of the company, its history, its position in the industry, and its economic outlook
4. The company management
5. The amount of control in the transferred shares
6. The restrictions on transferability
7. The holding period for the stock
8. Subject company's redemption policy
9. Costs associated with a public offering

Even though it is not a family law precedent, the *Mandelbaum* decision is cited frequently by family law analysts with regard to the measurement of a DLOM adjustment. The *Mandelbaum* factors are intuitive, and they reconcile with the empirical studies discussed above.

Analyses of the *Mandelbaum* factors, the empirical studies, the theoretical studies, and other DLOM literature indicate that many company-specific and security-specific factors affect the magnitude of the DLOM adjustment.



These specific factors generally fall into three categories:

1. Expected dividend payments
2. Expected investment holding period
3. The subject closely held company risk

Expected Dividend Payments

The textbook *Valuing a Business*³⁶ explains the relevance of dividends:

Stocks with no or low dividends suffer more from lack of marketability than stocks with high dividends. Besides being empirically demonstrable, this makes common sense. If the stock pays no dividend, the holder is dependent entirely on some future ability to sell the stock to realize any return. The higher the dividend, the greater the return the holder realizes without regard for sale of the stock.

An investor in a professional practice or professional services company would generally prefer some dividends to no dividends. When the subject is a noncontrolling ownership interest, the analyst should also consider that the future dividends may not equal the historical dividends.

Let's assume that a professional services company makes an annual dividend payment equal to 100 percent of its annual cash flow. And, let's assume that all company shareholders are related. Under the fair market value standard of value, the willing buyer of a noncontrolling interest in this company will not be a family member.

In order for the economic benefits to remain within the controlling family, the professional practice or professional services company may perform the following:

1. Discontinue paying dividends
2. Otherwise allocate the cash previously used for dividends to family members

In this example, the presence of historical dividends is not the only factor for the analyst to consider regarding the dividends of a professional practice or professional services company. The private company expected future dividends may be considered in the DLOM measurement.

Expected Investment Holding Period

The second factor that affects the DLOM is the expected investment holding period. Both the *Mandelbaum* decision and Internal Revenue Service Revenue Ruling 77-287³⁷ indicate that the expected holding period affects the DLOM adjustment.

The restricted stock studies, the pre-IPO studies, the OPM studies, and the DCF models all consider investment holding period as a factor.

This investment holding period factor is associated with the DLOM adjustment for the following reasons:

1. It is clearly measured in empirical studies
2. It is intuitive
3. It encompasses a variety of other factors

In Exhibit 6, the DLOM adjustment magnitude is related to the expected investment holding period. As the investment holding period increases, so does the DLOM adjustment.

Subject Practice or Company Risk

The third factor that affects the DLOM adjustment is the individual professional practice or professional services company risk. The restricted stock studies and the OPM studies conclude that the size of the DLOM adjustment is related to the stock price volatility (one measure for risk). The studies also associate company size (another measure for risk) with the DLOM adjustment size.

For example, the McConaughy, Cary, and Chen restricted stock study indicates, “There are three factors that remain significant: size, stability of revenue growth, and stock price volatility. These three factors clearly reflect the riskiness of investing in a company.”³⁸

Each of these three factors relates to the subject professional practice or professional services company risk.

A large company is a “safer” investment than a similar small company, all other factors being equal. This conclusion is illustrated by comparing the expected rates of return on large-capitalization companies to small-capitalization companies.

Ibbotson Associates makes this comparison:

One of the most remarkable discoveries of modern finance is the finding of a relationship between company size and return. . . . The relationship between company size and return cuts across the entire size spectrum. . . . Small-cap stocks are still considered riskier investments than large-cap stocks. Investors require an additional reward, in the form of additional return, to take on the added risk of an investment in small-cap stocks.³⁹

Large private companies are perceived as safer investments than are small private companies.

A larger earnings base typically enables a professional practice or professional services company to do the following:

1. Withstand downturns in the economy and in the subject industry
2. Capitalize on growth opportunities

Factors in addition to size can also affect the subject practice or company risk. The following list includes some of the factors that may affect the professional practice or the professional services company risk:

- Historical financial ratios
- Historical earnings trends/volatility
- Management depth

Exhibit 6
Emory Studies for 1980 to 2000 (after a 2002 revision)
Price Discounts vs. Time between Transaction and IPO

| Number of Days | Price Discount Average | Price Discount Median | Transaction Count |
|----------------|------------------------|-----------------------|-------------------|
| 0–30 | 30% | 25% | 18 |
| 31–60 | 40% | 38% | 72 |
| 61–90 | 42% | 43% | 162 |
| 91–120 | 49% | 50% | 161 |
| 121–153 | 55% | 54% | 130 |
| Total | | | 543 |

Source: Institute of Business Appraisers Annual National Conference, June 2, 2003.

- Product line diversification
- Geographic diversification
- Market share
- Supplier dependence
- Customer dependence
- Deferred expenditures
- Lack of access to capital markets

SUMMARY AND CONCLUSION

A valuation analyst may be asked to value a non-controlling ownership in a professional practice or professional services company for various reasons.

Depending on the professional practice valuation approaches and methods applied and on the benchmark empirical data used in the quantitative analysis, the analyst may initially conclude the value of the ownership interest on a marketable basis.

That is, the ownership interest is valued as if it was freely traded on an organized stock exchange. This situation occurs when the analyst relies on public company capital market data to extract pricing multiples, discount rates, or capitalization rates.

In such an instance, the analyst may have to apply a valuation adjustment (or DLOM) in order to reach the final (i.e., nonmarketable level) value conclusion.

This discussion summarizes the various factors that the analyst typically considers in the DLOM measurement associated with the ownership interest in a private professional practice or professional services company.

In measuring the DLOM adjustment for the non-controlling ownership interest, the analyst should consider all of the facts and circumstances relevant to the professional practice or professional services company ownership interest.

Based on the facts of the analysis, there are times when one study is more relevant than another. This is because marketability and lack of marketability are relative (and not absolute) terms.

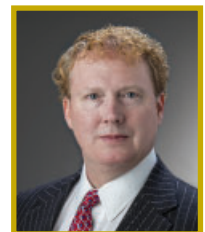
Ultimately, the DLOM adjustment selection and application in the professional practice or professional services company valuation will be influenced by the analyst's experience and judgment.

Notes:

1. John Downs and Jordan Elliot Goodman, eds., *Barron's Dictionary of Finance and Investment Terms*, 6th ed. (Hauppauge, NY: Barron's, 2003), 406.
2. 17 CFR 230.144 (revised April 1, 1990).

3. SEC website: <http://www.sec.gov/investor/pubs/rule144.htm>
4. On February 18, 1997, the SEC adopted amendments to reduce the holding period requirements under Rule 144 of the Securities Act from two years to one year for the resale of limited amounts of restricted securities (the amendment became effective April 29, 1997). Further, on November 15, 2007, the SEC adopted similar amendments which reduced the holding period requirements from one year to six months (effective February 15, 2008).
5. See, for example, Bruce Johnson, "Restricted Stock Discounts, 1991-95," Shannon Pratt's *Business Valuation Update* (March 1999); Rod Burkert, "Cure for Declining Discounts, Deconstruct the Studies," *Trusts & Estates* (March 2004); and Robert Reilly, "Willamette Management Associates' Discount for Lack of Marketability Study for Marital Dissolution Valuations," *American Journal of Family Law* (Spring 2005).
6. 17 CFR Parts 230 and 239, December 17, 2007.
7. John A. Menicucci Jr., "SEC Adopts Amendments to Rule 144 & Rule 145," *The Nebraska Lawyer* (April 2008).
8. Emory was formerly with Robert W. Baird & Co. where the studies prior to April 1997 were conducted.
9. John D. Emory, "The Value of Marketability as Illustrated in Initial Public Offerings of Common Stock—January 1980 through June 1981," *Business Valuation News* (September 1985): 21-24, also in *ASA Valuation* (June 1986): 62-66; "The Value of Marketability as Illustrated in Initial Public Offerings of Common Stock, January 1985 through June 1986," *Business Valuation Review* (December 1986): 12-15; "The Value of Marketability as Illustrated in Initial Public Offerings of Common Stock (August 1987-January 1989)," *Business Valuation Review* (June 1989): 55-57; "The Value of Marketability as Illustrated in Initial Public Offerings of Common Stock, February 1989-July 1990," *Business Valuation Review* (December 1990): 114-16; "The Value of Marketability as Illustrated in Initial Public Offerings of Common Stock, August 1990 through January 1992," *Business Valuation Review* (December 1992): 208-212; "The Value of Marketability as Illustrated in Initial Public Offerings of Common Stock, February 1992 through July 1993," *Business Valuation Review* (March 1994): 3-5; "The Value of Marketability as Illustrated in Initial Public Offerings of Common Stock, January 1994 through June 1995," *Business Valuation Review* (December 1995): 155-160; "The Value of Marketability as Illustrated in Initial Public Offerings of Common Stock, November 1995 through April 1997," *Business Valuation Review*

- (September 1997): 123–131; John D. Emory Sr., F.R. Dengel III, and John D. Emory Jr., “The Value of Marketability as Illustrated in Initial Public Offerings of Common Stock, May 1997 through December 2000,” *Business Valuation Review* (September 2001): 15–19; and “Underlying Data in Excel Spreadsheet for 1980-2000 Pre-IPO Discount Studies, as Adjusted October 10, 2002,” located at <http://www.emorybizval.com/valuation-studies.shtml>.
10. See John D. Emory Sr., F.R. Dengel III, and John D. Emory Jr., “Discounts for Lack of Marketability: Emory Pre-IPO Discount Studies 1980–2000, as Adjusted October 10, 2002,” www.emoryco.com/valuation-studies.shtml.
 11. The database is available on a subscription basis from www.bvmarketdata.com.
 12. The specific analytical procedures performed in the various WMA pre-IPO DLOM studies are detailed in Shannon P. Pratt, Robert F. Reilly, and Robert P. Schweihs, *Valuing a Business*, 4th ed. (New York: McGraw-Hill, 2000), 408–411.
 13. European options have a single exercise date. In contrast, the holder of an American option can exercise the option at any time during the existence of the option.
 14. David B.H. Chaffe III, “Option Pricing as a Proxy for Discount for Lack of Marketability in Private Company Valuations,” *Business Valuation Review* (December 1993): 182–6.
 15. *Ibid.*: 184.
 16. Francis A. Longstaff. “How Much Can Marketability Affect Security Values?” *The Journal of Finance* (December 1995): 1767–74.
 17. A “lookback” option differs from most other options in that the holder can look back at the end of the option’s life and retroactively exercise the option at either the lowest stock price (for a call option) during the holding period or the highest stock price (for a put option) during the holding period.
 18. Longstaff, “How Much Can Marketability Affect Security Values?”: 1771.
 19. Ashok Abbott, “Discounts for Lack of Liquidity: Understanding and Interpreting Option Models,” *Business Valuation Review* 28, no. 3 (Fall 2009): 145.
 20. Martin Greene, “Do Maximum Strike Price Lookback (Longstaff) and Other Put Option Models Produce a Marketability Premium or a Discount?” *Business Valuation Update* (October 2010): 26.
 21. John D. Finnerty, “The Impact of Transfer Restrictions on Stock Prices,” *Analysis Group/Economics* (October 2002).
 22. *Ibid.*: 28–29.
 23. *Ibid.*: 30.
 24. Robert R. Trout, “Minimum Marketability Discounts,” *Business Valuation Review* (September 2003).
 25. Robert M. Seaman, “Latest LEAPS Study Sheds Light on Company Size and DLOMs,” *Business Valuation Update* 19, no. 9 (September 2013).
 26. Companies examined included Amazon, Ford Motor, General Motors, Morgan Stanley, Microsoft, Nextel, Qlogic, Qualcomm, and Tyco.
 27. Trout, “Minimum Marketability Discounts”: 124–5.
 28. Seaman, “Minimum Marketability Discounts—5th Edition,” March 2010.
 29. Seaman, “Minimum Marketability Discounts—4th Edition,” whitepaper issued March 2009: 14.
 30. Z. Christopher Mercer and Travis W. Harms, “Marketability Discount Analysis at a Fork in the Road,” *Business Valuation Review* (December 2001): 23.
 31. Z. Christopher Mercer, *Quantifying Marketability Discounts* (Memphis: Peabody Publishing, 1997).
 32. Estate of Weinberg v. Commissioner, T.C. Memo 2000-51 (February 15, 2000).
 33. Donald J. Janda and Dorothy M. Janda v. Commissioner, T.C. Memo 2001-24 (February 2, 2001).
 34. David Tabak, “A CAPM-Based Approach to Calculating Illiquidity Discounts,” NERA Economic Consulting publication (November 11, 2002), www.nera.com.
 35. Mandelbaum v. Commissioner, T.C. Memo 1995-255 (June 13, 1995).
 36. Shannon P. Pratt, *Valuing a Business: The Analysis and Appraisal of Closely Held Companies*, 5th edition, (New York: McGraw-Hill 2008), 495.
 37. According to Rev. Rul. 77-287, Section 6.02, “the longer the buyer of the shares must wait to liquidate the shares, the greater the discount.”
 38. Daniel L. McConaughy, David Cary, and Chao Chen, “Factors Affecting Discounts on Restricted Stock,” *Valuation Strategies* (November/December 2000): 46.
 39. *Ibbotson SBBi 2015 Classic Yearbook* (Chicago: Morningstar, 2015), 99, 113.



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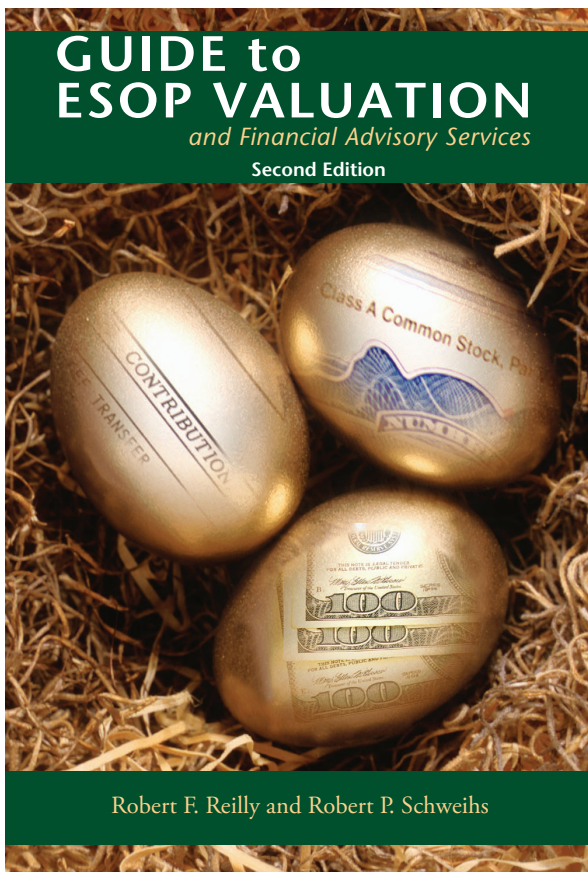
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Criteria for Claiming a Worthless Security Loss Deduction

Samuel S. Nichols and Robert F. Reilly, CPA

Many taxpayers are familiar with the Internal Revenue Code Section 165 worthless stock deduction. Taxpayers often call on valuation analysts to analyze and to document the worthlessness of the stock of a private company, corporate subsidiary, or some other common stock equity interest. The Section 165 loss deduction also applies to the worthlessness of a partnership interest, limited liability membership interest, or similar equity interest. Many taxpayers may not be aware that the taxpayer typically does not need to actually abandon the worthless security interest in order to claim the loss deduction. This discussion summarizes the requirements applied by the Internal Revenue Service and by the courts that allow taxpayers to claim the worthless security loss deduction (particularly when the worthless business ownership interest is not abandoned).

INTRODUCTION

Taxpayers often apply Internal Revenue Code Section 165(a) to claim an income tax deduction for an uncompensated loss sustained during the tax year. An uncompensated loss occurs when the taxpayer does not receive insurance proceeds, a reimbursement, or any other compensation related to the loss.

The tax character of the uncompensated loss can be an ordinary income deduction or a capital loss, depending on the facts and circumstances of the loss event.

Regulation Section 1.165-1(b) provides that in order for the loss to be allowable as an income tax deduction, the loss must be:

1. evidenced by a closed and completed transaction,
2. fixed by identifiable events, and
3. actually sustained during that tax year.

In order to satisfy the Regulation 1.165-1(b) requirements for claiming a loss deduction, the taxpayer must typically walk away from—or otherwise abandon—the property that suffered the loss.

Another taxpayer application of Section 165(a) is what is typically called the worthless stock deduction. This description is often used because the taxpayer is claiming a tax deduction related to the worthlessness of the stock of a private company or of a similar ownership interest.

Valuation analysts are often called on by the taxpayer to help prove that the equity ownership interest—usually the stock of the private company (or the stock of a corporate company)—is worthless.

As this discussion will illustrate, the Section 165(a) “worthless stock” deduction is not limited to the stock of a corporation. The Section 165(a) deduction is also available with regard to the worthlessness of a partnership interest, a limited liability

company (“LLC”) membership interest, or a similar equity interest.

Regardless of the type of equity interest, the Section 165(a) deduction becomes available when the security ownership interest becomes worthless.

This discussion describes the criteria that taxpayers and the Internal Revenue Service (“Service”) consider to determine worthlessness. In particular, this discussion explains that the actual abandonment of the equity ownership interest is not a requirement for the taxpayer to claim a Section 165(a) worthless security tax deduction.

Valuation analysts are also called on to prove—and to document—the worthlessness of a partnership interest, a limited liability membership interest, or any similar equity ownership interest.

THE MCM INVESTMENT MANAGEMENT, LLC, DECISION

A taxpayer can prove that it is entitled to a Section 165(a) loss deduction for the worthlessness of a partnership interest without abandoning the business interest. In the fairly recent judicial decision in *MCM Investment Management, LLC*, T.C. Memo 2019-158, the Tax Court agreed with this taxpayer position and allowed the Section 165(a) loss deduction for a worthless partnership interest.

This *MCM Investment* judicial decision provides practical guidance both for taxpayers and for tax advisers with regard to the legal requirements in order to sustain a tax deduction for business ownership interest worthlessness.

This judicial decision also provides practical guidance for valuation analysts with regard to the analysis and the documentation of the equity ownership interest worthlessness.

This *MCM Investment* Tax Court decision supports the tax position taken by the taxpayer: that the actual abandonment of the partnership interest (or other equity ownership interest) is not required in order to claim a Section 165(a) loss deduction.

THE ECHOLS DECISION AND THE ABANDONMENT DISPUTE

Historically, the Service has taken the position that an actual abandonment is a required condition for an equity ownership interest worthlessness deduction. The Service’s historical position was that:

1. worthlessness equated to abandonment and
2. only worthless securities would qualify for the Section 165(a) loss deduction.

The courts did not always accept the Service’s very limited interpretation of Section 165(a).¹

The question of a business ownership interest abandonment was definitively addressed by the Court of Appeals in its decision in *Echols*.² In the *Echols* decision, the Fifth Circuit reversed a Tax Court decision and rejected the Service’s position with regard to the abandonment requirement.

The Court of Appeals concluded that a taxpayer married couple could claim a Section 165(a) loss deduction with regard to a real estate partnership interest ownership interest. The couple had claimed the loss deduction under Section 165(a) based on their conclusion of the worthlessness of the partnership interest.

The taxpayer couple claimed that the equity interest was worthless even though the partnership had not abandoned an unimproved tract of land, the partnership’s only asset.

In the *Echols* decision, the Appeals Court noted that the worthlessness determination of a security ownership interest is based on a combination of both objective criteria and subjective criteria.

With regard to the objective criteria, a property that subjectively has a substantial value cannot be considered worthless for loss tax deduction purposes. With regard to the subjective criteria, this consideration typically relates to the question of when the property actually became worthless.

With regard to the worthless security, the taxpayer is expected to exercise judgment in the determination as to when the security interest became worthless. Such taxpayer judgment implies that there is not an absolute objective test as to when a subject security became worthless. That is, another taxpayer (exercising its own judgment) may conclude that a subject security became worthless in an earlier tax year or in a later tax year.

However, the taxpayer’s subjective determination of when a subject security became worthless should be supported by credible evidence and analysis documenting when the security actually became worthless. That is, the taxpayer’s judgmental selection of the tax year in which the security became worthless should be supported by objective evidence.

The Service never acquiesced to the above-mentioned Fifth Circuit *Echols* decision. The

Service decision not to acquiesce is documented in 1993 FSA Lexis 353 (August 31, 1993).

Nonetheless, just a few months after the FSA was issued, the Service issued Revenue Ruling 93-80. Revenue Ruling 93-80 described whether a taxpayer loss incurred with regard to the abandonment or the worthlessness of a partnership interest would be considered an ordinary loss or a capital loss. The determination of the character of the loss (ordinary versus capital) is an important consideration of this ruling.

However, Revenue Ruling 93-80 also implies that a worthless stock deduction may be available without the actual abandonment of the security ownership interest—in this case, the underlying partnership interest.

As mentioned above, the Service did not acquiesce to the *Echols* decision. Nonetheless, Revenue Ruling 93-80 keeps alive the question of whether the Service would accept a taxpayer tax deduction claim for a worthless security deduction (for a partnership interest) when the taxpayer has not abandoned the security ownership interest.

MCM INVESTMENT MANAGEMENT, LLC

The *MCM Investment* decision provides important guidance with respect to the Tax Court's consideration of both (1) the subjective determination of worthlessness and (2) the objective determination of worthlessness.

This 2019 Tax Court decision involved a “parent” partnership and a “subsidiary” partnership. The taxpayer and parent partnership was MCM Investment Management, LLC (“MCM”). MCM owned a controlling interest in McMillan Companies LLC (“McMillan”).

McMillan operated in the home building and residential remodeling segment of the construction industry. In 2007, the subprime mortgage crisis began and residential real estate values generally decreased. The McMillan business operations became unprofitable, and the amount of the company liabilities exceeded the value of the company assets.

The tax year at issue in *MCM Investment* was 2009. By 2009, an internal McMillan analysis indicated that an orderly liquidation of company assets would generate more cash to pay off the \$70 million of senior debt than a plan of ongoing business operations. Of course, this five-year orderly liquidation plan resulted in no residual value to pay either the

McMillan controlling interest owner or any other company equity owners.

MCM claimed an approximately \$41 million worthless security loss deduction on its 2009 income tax return. This loss deduction was based on the taxpayer's determination that its partnership equity interest in McMillan had become worthless during that tax year.

That taxpayer determination was based on two factors. First, McMillan began the process of liquidating its business operations in July 2009. Second, the McMillan cash flow projections (prepared during 2009) indicated that there would be insufficient cash flow to pay off all of the company senior debt—and no cash flow available for any of the company equity holders.

Upon audit, the Service agreed with the taxpayer that the character of the loss would be ordinary income. However, during the audit, the issue of liability relief was not addressed.

The dispute that arose during the audit was: When did the investment in McMillan become worthless? That is, what was the correct year in which taxpayer MCM should recognize the worthless security loss deduction?

In *MCM Investment*, the Tax Court had to decide whether the taxpayer MCM met all of the requirements for the Section 165(a) loss deduction in 2009. MCM did not abandon its partnership interest in McMillan in 2009.

Therefore, the court had to determine if the taxpayer was entitled to the worthless security deduction in 2009. In other words, the court had to decide if the MCM equity interest in McMillan became worthless in that tax year.

THE TAXPAYER'S SUBJECTIVE DETERMINATION OF SECURITIES WORTHLESSNESS

In *MCM Investment*, the Tax Court applied the two-part test from the *Echols* decision.

First, the Tax Court analyzed whether taxpayer MCM subjectively concluded that the McMillan equity ownership interest was worthless in 2009.

Based on the evidence presented at the trial, the Tax Court decided that MCM did subjectively conclude that the McMillan partnership interest was worthless for two reasons.

The first reason the court decided that MCM subjectively concluded that McMillan was worthless was the taxpayer's filing of its 2009 partnership

income tax return. That 2009 tax return claimed a worthlessness loss deduction.

The second reason the court decided that MCM subjectively concluded that McMillan was worthless was the fact witness testimony of the MCM managers and partners. The MCM managers and partners credibly testified about the devastating impact that the financial crisis had on the residential real estate market.

In addition, the court was persuaded by the McMillan financial projections that demonstrated the company's inability:

1. to pay off its senior lender in full or
2. to have any assets remaining for the MCM partners and other equity owners.

Finally, the court was persuaded by the McMillan plan to gradually wind down its business operations over a five-year period—a plan that was designed to maximize the amount of cash flow available to pay the company's creditors.

THE TAXPAYER'S OBJECTIVE DETERMINATION OF SECURITIES WORTHLESSNESS

Second, the Tax Court analyzed whether the objective evidence confirmed the MCM subjective determination that the McMillan equity interest became worthless in 2009. In concluding if this objective determination test was met in *MCM Investment*, the Tax Court relied on the principles for objectively determining the worthlessness of private corporation stock.

While applied many times over the years, those "worthless stock" determination principles were first applied in the 1938 Board of Tax Appeals decision in *Morton*.³

In the *MCM Investment* decision, the Tax Court specifically referred to the following language from the *Morton* decision:

The ultimate value of stock, and conversely its worthlessness, will depend not only on its current liquidating value, but also on what value it may acquire in the future through the foreseeable operations of the corporation. Both factors of value must be wiped out before we can definitely fix the loss. If the assets of the corporation exceed its liabilities, the stock has a liquidating value. If its assets are less than its liabilities but there is a reasonable hope and expectation that the assets will exceed the

liabilities of the corporation in the future, its stock, while having no liquidating value, has a potential value and cannot be said to be worthless. The loss of potential value, if it exists, can be established ordinarily with satisfaction only by some "identifiable event" in the corporation's life which puts an end to such hope and expectation.

There are, however, exceptional cases where the liabilities of a corporation are so greatly in excess of its assets and the nature of its assets and business is such that there is no reasonable hope and expectation that a continuation of the business will result in any profit to its stockholders. In such cases, the stock, obviously, has not liquidating value, and since the limits of the corporation's future are fixed, the stock, likewise, can presently be said to have no potential value. Where both these factors are established, the occurrence in a later year of an "identifiable event" in the corporation's life, such as liquidation or receivership, will not, therefore, determine the worthlessness of the stock, for already "its value had become finally extinct."

In the *MCM Investment* case, the court decided that the McMillan financial projections were both (1) conservative and (2) based on market condition assumptions.

The McMillan financial projections indicated that an immediate company liquidation would result in the senior creditor receiving only about 40 percent of its loan balance. This scenario would also result in no residual assets or cash being available for distribution either (1) to MCM or (2) to the preferred equity holders.

In contrast, the McMillan gradual liquidation of company operations resulted in a higher percentage payoff of the senior creditor debt (and still no residual payment either to MCM or the preferred equity holders). That financial projection scenario represented the highest and best use of the McMillan assets.

The Tax Court also commented on the balance sheet test for business enterprise solvency or insolvency. The court noted that balance sheet insolvency was not necessarily required when preferred equity interests (including corporation preferred stock or partnership preferred interests) are involved with the subject debtor entity.

That is, a subordinate entity equity interest may become worthless if the entity cannot satisfy the preferred equity holder's preferential claim in

liquidation. This principle was articulated in the *Mahler* decision.⁴

In *MCM Investment*, the Tax Court concluded that the combination of the McMillan debt and the impact of the financial crisis on the residential real estate market objectively established that McMillan had no liquidation value. The court concluded that McMillan objectively had no liquidation value, either in 2009 or in the foreseeable future.

FACTS AND CIRCUMSTANCES IMPACT THIS JUDICIAL DECISION

Taxpayer MCM was successful in claiming a worthless security loss deduction related to its equity investment in McMillan. The Tax Court allowed the tax deduction based on its assessment of:

1. the impact of the financial crisis on the residential real estate market and
2. the McMillan contemporaneously prepared financial projections documenting the company's worthlessness.

The Tax Court also mentioned the lack of a McMillan liquidation value (for both the preferred equity interests and the nonpreferred equity interests) as evidence of the worthlessness of the MCM equity interest. Specifically, the Tax Court noted the evidence that McMillan objectively had no liquidation value in 2009 or in the foreseeable future.

The Tax Court concluded that taxpayer MCM passed both (1) the subjective determination of the worthlessness test and (2) the objective determination of the worthlessness test. Therefore, the Tax Court upheld the taxpayer's worthless security loss deduction for the MCM equity investment in McMillan.

SUMMARY AND CONCLUSION

Taxpayers more frequently apply the provisions of Section 165(a) to claim a worthless security loss deduction for the stock of a private company or for the stock of a corporation's subsidiary.

Although it is typically referred to as the "worthless stock deduction," Section 165(a) is not restricted to the worthlessness of private company stock or of subsidiary corporation stock. Section 165(a) may also be applied to claim a loss deduction related to a partnership interest, an LLC membership interest or any other equity ownership interest.

The regulations related to Section 165 provide regulatory guidance with regard to the requirements

to claim a Section 165(a) worthless security loss deduction.

In addition, the courts have applied a two-test procedure with regard to allowing such an income tax deduction:

1. the taxpayer's subjective determination of worthlessness and
2. the taxpayer's objective determination of worthlessness.

In the *MCM Investment Management, LLC*, decision, the Tax Court provided guidance to taxpayers—and to their tax advisers—with regard to the justification of a Section 165(a) worthless loss deduction. In particular, the *MCM Investment* decision is important because it supports the principle that the abandonment of a partnership ownership interest is not a requirement for claiming the Section 165(a) worthless deduction.

The *MCM Investment* decision also provides guidance with regard to the valuation analysis of—and the documentation of—the worthlessness of the subject equity interest.

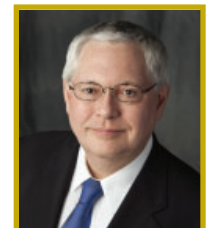
The *MCM Investment* decision also illustrates the importance of how the specific facts and circumstances of a case may influence the court's decision. In the *MCM Investment* case, the McMillan contemporaneously prepared analyses (including the preparation of credible and supportable financial projections) convinced the Tax Court that taxpayer MCM had passed both the subjective determination test and the objective determination test.

Notes:

1. See *Zeeman*, 175 F. Supp. 235 (S.D. NY, 1967) affirmed on this issue and remanded in part on other issues, 395 F.2d 861 (2d Cir. 1968); 146 B.R. 464 (Bankr. D. Colo. 1991); *Tejon Ranch Co.*, T.C. Memo 1985-207; and *In re: Kreidles*.
2. *Echols v. Commissioner of Internal Revenue*, 935 F.2d 703 (5th Cir. 1991).
3. *Morton v. Commissioner of Internal Revenue*, 38 B.T.A. 1270, 1278-1279 (1938), aff'd 112 F.2d 320 (7th Cir. 1940).
4. *Mahler v. Commissioner of Internal Revenue*, 119 F.2d 869 (2d Cir. 1941).

Samuel Nicholls is a vice president in our Atlanta practice office. Sam can be reached at (404) 475-2311 or at ssnicholls@willamette.com.

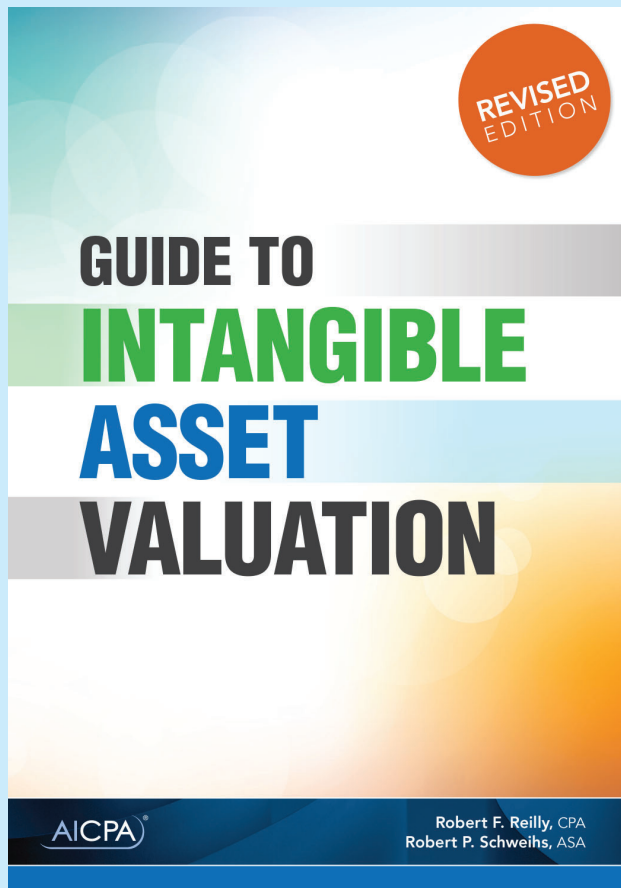
Robert F. Reilly is a managing director in our Chicago practice office. Robert can be reached at (773) 399-4318 or at rfreilly@willamette.com.



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Guide to Intangible Asset Valuation

by Robert F. Reilly and Robert P. Schweih



This 745-page book, originally published in 2013 by the American Institute of Certified Public Accountants, has been improved! The book, now in hardback, explores the disciplines of intangible asset valuation, economic damages, and transfer price analysis. *Guide to Intangible Asset Valuation* examines the economic attributes and the economic influences that create, monetize, and transfer the value of intangible assets.

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Guide to Intangible Asset Valuation

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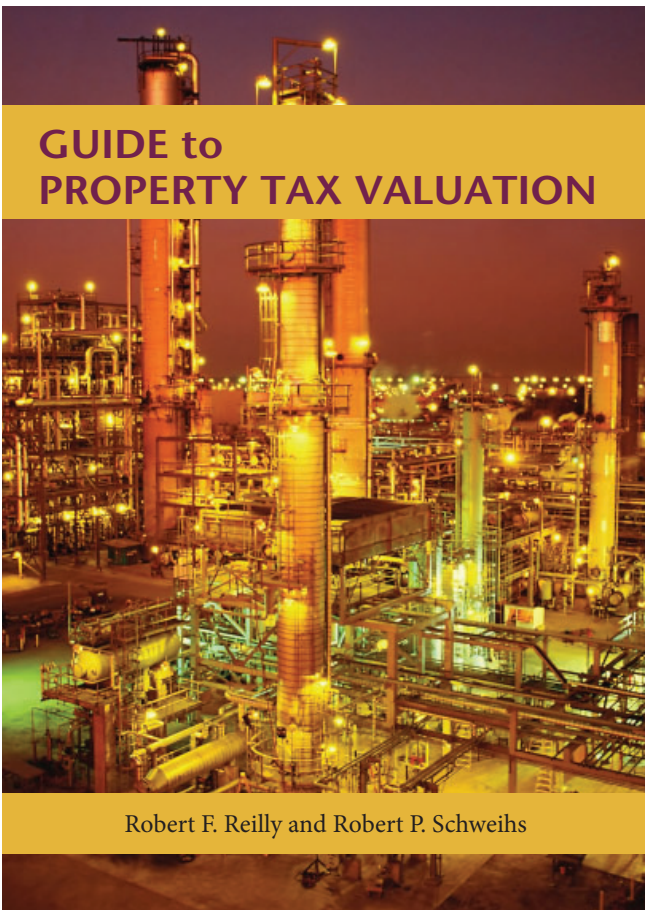
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Who Should Buy This “Must-Have” Book

- Tax directors and tax managers of taxpayer corporations
- State and local tax assessors
- Property owners of centrally assessed or locally assessed real estate and personal property
- Lawyers who practice in the state and local tax area
- Valuation analysts who prepare valuation analyses and valuation reports for ad valorem tax compliance, appeal, or litigation purposes
- Property tax consultants



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On Our Website

Recent Articles and Presentations

Robert Reilly, a managing director of our firm, authored an article that appeared in the November-December 2021, issue of the *Journal of Multistate Taxation and Incentives*. The title of Robert's article is "Intellectual Property Valuations and Unit Valuation Principle Assessments."

Valuation analysts are often called on to value intellectual property (IP) for various state and local taxation purposes. Analysts consider, and often apply, all three generally accepted property valuation approaches when valuing intellectual property. The approach(es) used depends on many factors. Many analysts, however, have less experience with the cost approach to IP valuation. Robert's article focuses on the conceptual principles and the practical applications of the cost approach in IP valuations for ad valorem property tax purposes. The article includes an illustrative example.

Robert Reilly also authored an article that appeared in the January-February 2022, issue of *Construction Accounting & Taxation*. The title of Robert's article is "Noncompete Agreement Considerations in Construction Company Acquisitions."

Corporate acquirers typically expect that seller noncompete agreements will be part of the construction company acquisition negotiations. Robert's article summarizes the taxation and other structuring considerations related to transactions where employee/shareholders are selling private C corporation stock to a C corporation acquirer. Some of these consideration also apply to the corporate acquirer's purchase of the corporate subsidiary stock of a parent corporation seller.

Robert Reilly also authored an article that appeared in the March 2022 issue of *Practical Tax Lawyer*. The title of Robert's article is "The F Reorganization as Part of the S Corporation Acquisition Transaction Structure"

Many baby boomers are thinking about selling their companies. One popular transaction tax structure for these acquisitions is an Internal Revenue Code section 368(a)(1)(F) reorganization of the private S corporation. Robert's article considers several of the reasons why owners may want to sell and why private equity firms may want to buy the S corporation target company. The articles describes the benefits to both sides of the transaction of the F reorganization. Robert summarizes the procedures for implementing the F reorganization and the tax planning considerations for the transaction participants.

Connor Thurman and Robert Reilly authored an article that appeared in the March 2022 issue of *Practical Tax Lawyer*. The title of their article is "What Legal Counsel Need to Know about Cost of Capital Calculations in Valuation and Damages Disputes."

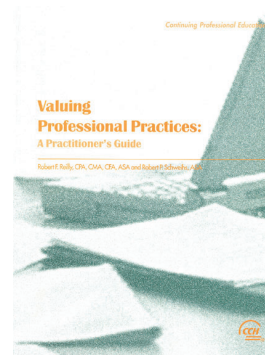
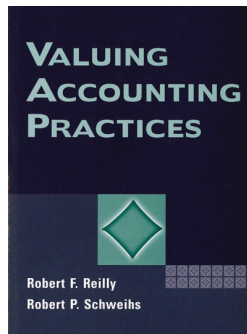
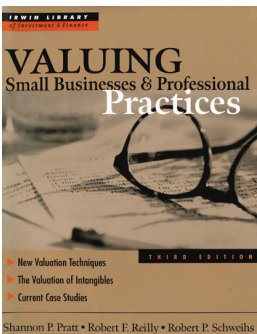
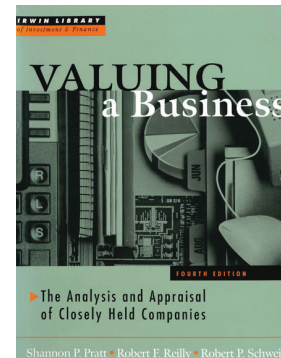
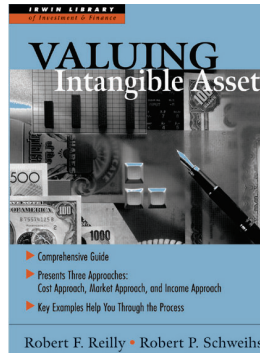
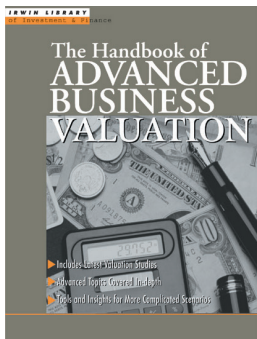
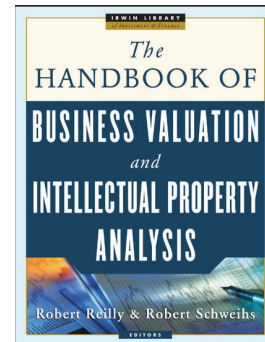
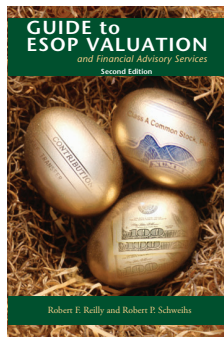
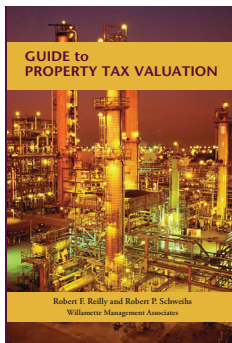
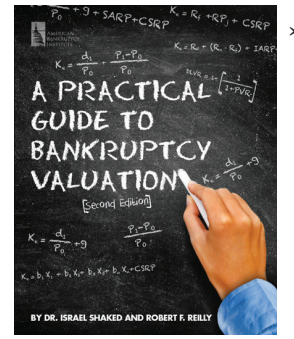
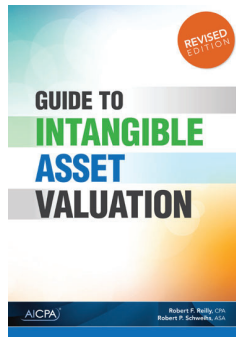
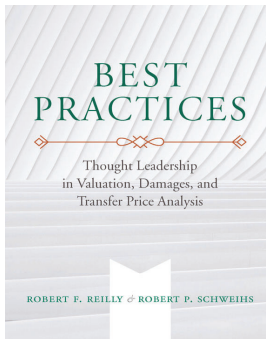
Estimating the discount rate or the direct capitalization rate is one component of just about every dispute-related private company valuation, damages, or transfer price analysis. The measurement of this component can have a material impact on the analyst's valuation, damages measurement, or transfer price determination opinion. Connor and Robert's article summarizes what legal counsel need to know about the discount rate/capitalization rate measurement process.

Robert Reilly also authored an article that appeared in the March 9, 2022 issue of *QuickRead*, published by National Association of Certified Valuators and Analysts® (NACVA®). The title of Robert's article is "Valuation Considerations Related to Equity Incentive Compensation Plans."

Robert's article summarizes what analysts need to know about the taxation issues and the security valuation issues related to private company equity incentive compensation programs. It focuses on both the taxation aspects and the valuation aspects of implementing an equity incentive compensation plan at a private company. The scope of Robert's article is limited to stock awards, stock options, and partnership profits interests.

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Valuation, Damages, and Transfer Price Textbooks Authored by Willamette Management Associates Authors



* Authored by Robert Reilly and Israel Shaked, Ph.D.

** Authored with Shannon Pratt

*** Edited by Robert Reilly and Robert Schweihs



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Communiqué

IN PRINT

Robert Reilly, Chicago office managing director, authored an article that appeared in the March/April 2022 issue of *Construction Accounting and Taxation*. The title of Robert's article is "Compensation Consultant Considerations Related to Equity Incentive Compensation Programs." Robert is proud to continue to serve as an editor of the professional journal *Construction Accounting and Taxation*.

Robert Reilly authored an article that appeared in the April 2022 issue of *Compensation & Benefits Review*. The title of Robert's article is "Compensation Consultant Considerations Related to Equity Incentive Compensation Programs."

Robert Reilly authored an article that appeared in the March 9, 2022, issue at the National Association of Certified Valuators and Analysts ("NACVA") online publication at www.quickreadbuzz.com. The title of Robert's article is "Valuation Considerations Related to Equity Incentive Compensation Plans."

Robert Reilly authored an article that was published in the January/February 2022 issue of *Construction Accounting and Taxation*. The title of Robert's article is "Noncompete Agreement Considerations in Construction Company Acquisitions"

Robert Reilly authored an article that appeared in the May/June 2022 issue of *Construction Accounting and Taxation*. The title of Robert's article is "Income Tax Consequences regarding Damages Awards."

Robert Reilly authored an article that appeared in the May 2022 issue of *Journal of Taxation*. The title of Robert's article is "Intellectual Property Valuations for Property Tax Purposes."

Robert Reilly authored an article that appeared in the NACVA online publication at www.quickreadbuzz.com on May 5, 2022. The title of Robert's article is "Criteria for Claiming a Worthless Security Income Tax Deduction—A Claim That Is Not Just for Corporations."

IN PERSON

Robert Reilly and Atlanta office managing director Weston Kirk jointly presented a four-hour webinar on May 26, 2022. The webinar was sponsored by Business Valuation Resources. The webinar was titled "Best Practices in Developing Intangible Asset Valuations and Asset-Based Approach Business Valuations." The webinar focused on developing individual intangible asset valuations when applying the asset-based approach to value industrial and commercial operating companies. In particular, the presentation focused on the development of cost approach and market approach intangible asset valuation analyses.

Robert Reilly will deliver a speech at the Wichita State University Ad Valorem Property Taxation Conference on July 25, 2022. This conference celebrates the 50th anniversary of this annual property taxation conference. The title of Robert's presentation is "Functional Analysis Best Practices: How We Deal with Disruption and Disequilibrium in the Unit Principle Valuation."

Robert is proud to serve as a member of the planning committee that organized the 50th anniversary Wichita State University Ad Valorem Property Taxation Conference.

Robert Reilly will deliver a presentation to the NACVA 2022 Business Valuation and Financial Litigation Conference. This year, this annual conference is being held in Salt Lake City, Utah. Robert's speech will be presented on August 18, 2022. The title of Robert's speech is "Asset-Based Approach to Business Valuation: Conceptual Foundations and Practical Applications." This presentation focuses on best practices related to the application of the asset-based approach to value operating companies on a going-concern premise of value basis. Such asset-based approach business valuations are often developed for transaction, taxation, financial accounting, litigation, and many other client purposes.

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