

Willamette Management Associates

Insights

Issue 130

Autumn 2021

Business Valuation, Forensic Analysis, and Financial Opinion Insights



THOUGHT LEADERSHIP IN INTELLECTUAL PROPERTY VALUATION,
DAMAGES, AND TRANSFER PRICE ANALYSES



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Insights

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Insights is intended to provide a thought leadership forum for issues related to the Willamette Management Associates business valuation, forensic analysis, and financial opinion services.

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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
INTELLECTUAL PROPERTY VALUATION, DAMAGES, AND TRANSFER PRICE ANALYSES
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Forethoughts

This *Insights* issue focuses on the economic analysis of intellectual property. In particular, this issue focuses on intellectual property valuation, damages, and transfer price analyses. In each of these three related economic disciplines, practitioners apply discipline-specific generally accepted approaches, methods, and procedures.

Most analysts who practice in each discipline are generally familiar with income-based methods to analyze intellectual property. And, most analysts in each discipline are generally familiar with market-based methods to analyze intellectual property. However, many analysts who practice in each discipline are not sufficiently familiar with cost-based methods to analyze intellectual property.

Therefore, this *Insights* issue presents several discussions related to the application of the cost approach to intellectual property valuation, damages, and transfer price analyses.

Several of these thought leadership discussions relate generally to the valuation of intellectual

property—and of other intangible personal property. Several of these discussions focus specifically on the fair value measurement of intellectual property—analyses developed for various financial accounting purposes.

Other thought leadership discussions focus on the development of, the reporting of, and the defense of intellectual property damages measurements. These damages measurements (particularly related to the cost to cure damages measurement method) related to both tort claims and breach of contract claims.

And, one thought leadership discussion focuses on the intercompany transfer price arm's-length price determination of intellectual property.

Finally, this *Insights* issue presents a discussion related to income taxation thought leadership. That discussion presents planning and structuring considerations related to the acquisition of a tax loss target company.

About the Editor



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Robert Reilly, CPA, is a managing director of Willamette Management Associates, a Citizens company. He resides in our Chicago office.

Robert's practice includes the valuation of intangible assets and particularly, of intellectual property. These valuations are often developed for financial accounting, taxation, transaction, financing, planning, and controversy purposes.

Robert's practice also includes forensic accounting and damages analysis with regard to intellectual-property-related breach of contract disputes and tort disputes.

And, Robert's practice includes intercompany transfer price analysis—particularly with regard to intangible property—for financial accounting, federal and state income taxation, licensing, controversy, and other purposes.

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Application of the Cost Approach to Intellectual Property Valuation

Robert F. Reilly, CPA, and Nathan P. Novak

Intellectual property includes several specific types of intangible personal property. These types of intellectual property are patents, trademarks, copyrights, and trade secrets.

Valuation analysts may be asked to value an owner/operator's intellectual property for various transaction, taxation, accounting, planning, and controversy purposes. The cost approach is applicable to the valuation of intellectual property in many instances and for many purposes. Damages analysts may be asked to value an owner/operator's intellectual property as part of a cost to cure damages measurement method analysis. This method is sometimes applied with regard to the measurement of damages related to intellectual property breach of contract and tort claims. Transfer price analysts may be asked to conclude an arm's-length price ("ALP") related to the intercompany transfer of a multinational owner/operator's intellectual property. The application of the cost approach to conclude an ALP is an example of an "other method" of transfer pricing, as allowed by the Regulations related to Internal Revenue Code Section 482. This discussion summarizes the conceptual principles and the practical applications of the cost approach to estimate value, measure damages, or determine an ALP for intellectual property—and related intangible personal property.

INTRODUCTION

Intellectual property includes patents, trademarks, copyrights, and trade secrets. This discussion—and the other thought leadership discussions in this *Insights* issue—encompass those four categories of intellectual property. Most of the methods and procedures—and illustrative examples—included in this discussion—and the other discussions in this *Insights* issue—are also applicable to other categories of general intangible personal property.

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

respectively, are familiar with generally accepted intellectual property valuation, damages measurement, and intercompany transfer price approaches, methods, and procedures.

Typically, such analysts often have particular experience and expertise with regard to the generally accepted income-based and market-based methods and procedures. However, such analysts often have less experience and expertise with regard to the application of cost-based valuation, damages, and transfer price analyses.

This discussion focuses on the conceptual principles and the practical applications of the cost approach. In particular, this discussion focuses on

the cost approach valuation of intellectual property. Much of this discussion also applies to the valuation of the other types of general intangible personal property.

In addition, much of this discussion also applies to the valuation aspects of intellectual property damages analysis and Intellectual property inter-company transfer price analysis.

Intellectual property is one category of intangible property. This discussion distinguishes between the terms intangible property and intangible assets.

Property is a legal term. Property is anything that an owner/operator can own under state law. That is, the owner/operator has legal rights to property.

Asset is an accounting term. An asset is anything that is reported in the asset section of a balance sheet. Not all types of property are recorded as an asset under U.S. generally accepted accounting principles (“GAAP”). Not all assets that are recorded on a balance sheet also qualify as property under the relevant state law.

Generally, the topic of this discussion is intellectual property—and related types of intangible property. When this discussion refers to items that are reported on a balance sheet (and particularly to the fair value measurement of such items), the discussion text will use the term intangible assets.

INTELLECTUAL PROPERTY VALUATION

There are various situations in which analysts develop and report intellectual property valuations—and other intangible personal property valuations. These situations include the following:

1. Sale (or other transfer) transaction pricing determination
2. Regulatory compliance; taxation planning and compliance and controversies
3. Fair value measurement (“FVM”) for financial accounting purposes
4. Collateral value appraisal for asset-based financing
5. Appraising the intangible asset of a component of an asset-based approach business valuation analysis
6. Use or other commercial exploitation
7. License fee (royalty rate) negotiation
8. Forensic analysis and dispute resolution

This final category of situations—forensic analysis and dispute resolution—include the application

of the cost to cure damages measurement method related to an intellectual property tort and breach of contract claims.

Intellectual property valuations are more typical in industries where intellectual property significantly contributes to either:

1. the owner/operator business value or
2. the owner/operator business operating income.

Such industries include technology, financial services, professional services, and many others.

In certain industries—such as health care—intellectual property valuations are often developed for purposes of compliance with statutory or regulatory requirements. For instance, a business sale and/or an intellectual property license transactions between a for-profit entity and a not-for-profit entity in the health care industry may require an intangible property valuation for regulatory and tax compliance.

One reason such an intangible property valuation may be required is to ensure that sale or license transactions are conducted fairly and within regulatory guidelines (for example, to ensure that a not-for-profit entity sells or licenses its intellectual property to a for-profit entity at a price that is less than a fair market value price).

As indicated in the American Institute of Certified Public Accountants (“AICPA”) Statement on Standards for Valuation Services (“SSVS”), *Valuation of a Business, Business Ownership Interest, Security, or Intangible Asset* (“VS section 100”), there are three generally accepted intellectual property (and other intangible property) valuation approaches:

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

Most analysts are generally familiar with the application of the income approach and the market approach intellectual property valuation methods. These generally accepted valuation methods include the multiperiod excess earnings method, the capitalized excess earnings method, the relief from royalty method, and the sales comparison method.

Unlike real estate and tangible personal property appraisers, analysts often have less experience and less expertise in the application of the cost approach intellectual property valuation methods. Accordingly, this discussion focuses on the conceptual principles

of—and the practical applications of—the cost approach intellectual property valuation methods.

As this discussion will explain, the cost approach is particularly applicable:

1. to certain types of intellectual property and related general intangible personal property,
2. in certain instances, and
3. for certain types of analyses purposes.

This discussion summarizes professional best practices related to the application of the cost approach to intellectual property valuation. This discussion describes a theoretical framework for the intellectual property cost approach valuation case studies.

This discussion is intended to achieve the following objectives:

- Present a review of the typical categories of intangible personal property (including examples of intellectual property).
- Describe the scope and the characteristics of several typical intangible personal property valuation assignments.
- Consider the suitability and the implementation of a cost approach valuation analysis for specific categories of intangible personal property, including intellectual property.

This discussion presents professional best practices and procedures related to the following:

1. Developing cost measurement metrics
2. Measuring appraisal depreciation and obsolescence
3. Concluding the cost approach value indication
4. Reconciling the cost approach value indication with value indications developed from other intangible property valuation approaches

Other discussions in this *Insights* issue provide a broad range of practical illustrations of the application of the cost approach to intellectual property valuation. These other discussions include considerations specific to FVM and financial accounting purposes as described in the Financial Accounting Standards Board (“FASB”) Accounting Standards Codification (“ASC”) topic 820, *Fair Value Measurements*.

These other *Insights* discussions also summarize the professional guidance provided by the

Mandatory Performance Framework (“MPF”) related to the Certified in Entity and Intangible Valuations™ (“CEIV”) professional credential. Those discussions include consideration of how the MPF procedures are intended to ensure that intellectual property fair value measurements are appropriately supported.

The fair value standard related to U.S. GAAP is only one of the valuation standards (or definitions) of value considered in this discussion. The fair value standard of value is relevant with regard to the development of the FVM of acquired intangible assets for acquisition accounting purposes.

However, the primary focus of this *Insights* issue is not related to an FVM for financial accounting purposes. Rather, this *Insights* issue is intended to describe the application of the cost approach to intellectual property valuation for alternative valuation purposes and across alternative standards of value.

REASONS TO VALUE INTELLECTUAL PROPERTY

Exhibit 1 presents many of the reasons why an analyst may be engaged to value an intellectual property (or a related intangible property).

ELEMENTS OF THE INTELLECTUAL PROPERTY VALUATION ENGAGEMENT

Before selecting the generally accepted valuation approach (or approaches) to apply to value the intellectual property, the analyst should develop a complete understanding of the valuation engagement.

Some of the typical elements of an intellectual property valuation assignment follow:

- Objective and purpose of the valuation
- Standard of value
- Premise of value
- Valuation date
- Description of the subject intellectual property
- Description of the subject bundle of legal rights
- Parties that may rely on the valuation
- Identification of any special reporting requirements

Exhibit 1

Typical Reasons to Value Intellectual Property

1. Transaction pricing and structuring
 - Pricing the arm's-length sale of an individual intellectual property or of a portfolio of two or more intellectual properties
 - Pricing the arm's-length inbound or outbound license of an individual intellectual property or of a portfolio of two or more intellectual property
 - Calculating an exchange ratio between two owners for the exchange of their two respective intellectual property portfolios
 - Measuring the equity allocations in a new business enterprise or joint venture when one or more parties contribute an intellectual property to the new entity
 - Measuring the asset distribution in a liquidating business enterprise or joint venture when one party (or more) receives an intellectual property in exchange for an equity interest or the payment of a liability
 - Pricing the intercompany transfer of the ownership of an intellectual property (or of the use of an intellectual property) between two wholly owned subsidiaries (or between two unequally owned subsidiaries) of a consolidated business enterprise
2. Owner/operator financing collateralization and securitization
 - Pledging an intellectual property as the collateral in either a cash-flow-based or an asset-based debt financing
 - Arranging the sale/license-back financing of a commercialized intellectual property
3. Taxation planning and compliance
 - Forming an intellectual property holding company and structuring the intercompany use license of the intellectual property to the subsidiary operating companies of a parent corporation
 - Performing an income tax basis allocation of a business acquisition purchase price (among the acquired tangible assets and intangible assets) in a taxable business acquisition transaction (such as in a transaction structured as an Internal Revenue Code Section 1060 asset acquisition)
 - Quantifying the amortization income tax deduction associated with a purchased intellectual property
 - Valuing owned intellectual property as part of a taxpayer corporation insolvency analysis in order to quantify the Section 108 exemption related to the recognition (or nonrecognition) of cancellation of debt income
 - Valuing a corporation's intellectual property related to the built-in-gain tax deferral on the corporate taxpayer's election to convert from C corporation to S corporation income tax status
 - Supporting the amount of a charitable contribution deduction related to a donated intellectual property
 - Estimating the arm's-length price for the cross-border transfer-and-use license for a multinational taxpayer corporation's intellectual property (for example, for Section 482 compliance)
 - Complying with state and local ad valorem property taxation requirements related to intellectual property that is either subject to—or exempt from—property taxation
 - Defending against any Service allegations of private inurement, excess benefits, or intermediate sanctions with regard to intellectual property transfers between a for-profit entity and a not-for-profit entity at less than (or more than) fair market value
4. Regulatory compliance and corporate governance
 - Estimating the fair market value of an intellectual property related to the sale, license, or other transfer between a for-profit entity and a not-for-profit entity
 - Estimating the fair market value of a going-concern business enterprise related to the sale or other transfer between a for-profit entity and a not-for-profit entity based on the application of the asset-based business valuation approach
 - Documenting the custodial inventory and the management of an entity's owned or licensed intellectual property
 - Assessing the adequacy of property insurance coverage for an entity's owned or licensed intellectual property

Exhibit 1 (cont.)

Typical Reasons to Value Intellectual Property

- Defending against (or prosecuting) litigation claims of infringement, misappropriation, diversion of corporate assets, or of other tort claims—or of breach of contract claims—related to alleged wrongful acts involving intellectual property
 - Defending against (or prosecuting) allegations of shareholder oppression and other claims related to the dissipation of corporate assets
5. Bankruptcy and reorganization
- Valuing a debtor's intellectual property that is pledged as collateral for secured creditor financing
 - Pledging an intellectual property as collateral for debtor-in-possession ("DIP") secured financing
 - Opining on the fairness (to the creditors) of the sale or license of an intellectual property as a DIP cash-generation spin-off opportunity
 - Valuing the debtor's intellectual property in the performance of the debtor company solvency or insolvency tests (particularly the balance sheet test) with respect to fraudulent transfer claims and to preference actions
 - Measuring the impact of the debtor company owned or licensed intellectual property on the proposed plan of reorganization of the bankrupt owner/operator
6. Fair value measurement and financial accounting
- Developing the acquisition accounting method for acquisition, transaction purchase price allocation among the acquired tangible assets and intangible assets—including intellectual property—in compliance with FASB ASC 805, *Business Combinations*
 - Testing for reporting entity goodwill impairment and for other intangible asset—including intellectual property—impairment in compliance with FASB ASC 350, *Intangibles — Goodwill and Other* and FASB ASC 360, *Property, Plant, and Equipment*
 - Preparing the postbankruptcy "fresh start" accounting for the emerging entity's tangible assets and intangible assets FASB ASC 852, *Reorganizations*
 - Valuing the intellectual property investments owned by (and reported on the balance sheet of) a portfolio company
 - Preparing valuations of all investments—including investments in intellectual property—for investment-company financial accounting FASB ASC 946, *Financial Services — Investment Companies*
7. Forensic analysis and dispute resolution
- Measuring lost profits, reasonable royalty rate, or other economic-damage measurements related to intellectual property infringement or other intellectual property tort claims
 - Measuring lost profits or other economic damages measurements related to intellectual-property-related breach of contract, use or commercialization or development license, or noncompete/nondisclosure agreement damage claims
 - Estimating the owner/operator's intellectual property value in a condemnation, expropriation, eminent domain, or dissipation of corporate assets litigation claim
8. Owner/operator strategic planning and management information
- Drafting and implementing an intellectual property joint venture agreement, joint development agreement, or joint-commercialization agreement
 - Negotiating an inbound or an outbound intellectual property use, development, commercialization, or exploitation license agreement
 - Identifying and negotiating intellectual property license, spin-off, joint venture, and other commercialization opportunities
 - Valuing intellectual property as one component of an asset-based approach business valuation of an early-stage company for private investment-planning purposes

The analyst should document an understanding of the engagement by defining its objective and purpose. Typically, the objective of an intellectual property valuation engagement is to estimate a defined value of a specified ownership interest in the intellectual property as of a specified date.

The standard of value and the premise of value should be identified. The subject ownership interest and the subject property itself should be understood. Intellectual property values are developed and reported as of a specific valuation date.

Finally, the purpose of the intellectual property valuation assignment should both:

1. explain the intended use of the valuation work product and
2. identify the intended users of the valuation work product.

Sometimes a valuation is not the type of analysis that the client actually needs. That is, some types of financial or economic analysis other than a valuation may better address the client's issue or informational needs.

For example, instead of developing an intellectual property valuation, the analyst may better serve the client by developing a different type of analysis, such as one of the following:

- An inbound or outbound license royalty rate analysis
- An arm's-length price analysis
- A damages measurement of lost profits or reasonable royalties due to an alleged infringement
- The fairness analysis of a proposed sale, license, or other transfer transaction
- An exchange ratio analysis when intellectual properties are being transferred
- The assessment of the intellectual property useful economic life

Whether the assignment calls for the valuation of an intellectual property or whether the assignment calls for another type of financial or economic analysis, the scope of the engagement should always be clearly defined and agreed on by the analyst and the client.

The intellectual property value developed for a particular purpose often may be different than the same intellectual property value developed for another purpose. Depending on the specific purpose of the valuation, the client (or the client's legal counsel) will instruct the analyst regarding the appropriate standard (or definition) of value. In

simple terms, the analysis standard of value answers the question: Value to whom?

The following list presents some typical alternative standards of value that may apply to an intellectual property valuation analysis:

- Fair value
- Fair market value
- Use value
- User value
- Owner value
- Investment value
- Acquisition value
- Collateral value
- Strategic value
- Intrinsic value

The analysis premise of value answers the question: How will the assumed transaction (between the parties specified in the standard of value) take place? Often, the client (or the client's legal counsel) will instruct the analyst regarding the appropriate premise of value to apply in the analysis. When there is no such client instruction, the analyst may select the appropriate premise of value based on his or her conclusion of the highest and best use ("HABU") of the subject intellectual property.

The following list presents some of the alternative premises of value that may apply in an intellectual property valuation analysis:

- Value in continued use
- Value in place (but not in current use)
- Value in exchange—on an orderly disposition basis
- Value in exchange—on an voluntary liquidation basis
- Value in exchange—on an involuntary liquidation basis

Depending on the purpose and objective of the valuation assignment, the analyst may conclude the subject intellectual property HABU to be with:

1. the current owner/operator,
2. a new owner/operator, or
3. a willing licensor/willing licensee.

The valuation date is a fundamental element of every valuation assignment. The client (or the client's counsel) will instruct the analyst regarding the appropriate valuation date. As with any intellectual

property economic analysis, the valuation date can be any of the following:

- Historical
- Current
- Prospective

The analyst should have a clear understanding of the particular intellectual property subject to the valuation. The description of the intellectual property should be clear and sufficient to avoid any confusion about which intellectual property types—and which intellectual property rights—are included in—or excluded from—the valuation analysis.

The intellectual property description may refer to license or contract dates, registration or other intellectual property numbers, physical locations, descriptive listings, or any other designation that would enable the analyst (and any party who may rely on the valuation report or value conclusion) to identify the intellectual property.

To the extent possible, the description should include all associated intangible property. For example, the subject intellectual property may include the copyrights and trade secrets related to all internally developed computer software owned and operated at a professional services company, including its source code and all associated code listings, system documentation, and operator or user manuals.

The next element of the valuation engagement is the identification of the particular bundle of intellectual property legal rights that should be included in the valuation analysis.

The following list presents some of the various bundles of rights that may be included in the intellectual property valuation:

- Fee simple
- Term/reversion interest
- Licensor/licensee interest
- Sublicensee's interest
- Domestic/international interest
- Product line/industry interest
- Life/residual interest
- Use rights
- Development rights
- Commercialization rights

The analyst should also have a complete understanding of what party or parties will rely on the intellectual property valuation report. Any limitations on the distribution of the valuation analysis

and/or the valuation report (to the extent a written report is prepared and delivered to the client) are typically described in the client engagement letter.

These distribution limitations are described again in the resulting valuation report. An intellectual property valuation prepared for one use and for one user may not be applicable to a different use and a different user.

The analyst also should have a clear understanding regarding the client's (or the client's legal counsel) expectations regarding the valuation report. For example, the analyst needs to know whether the client requires a valuation report or a summary report.

Likewise, the analyst should know whether the valuation report should meet any statutory, judicial, or administrative reporting requirements. An example of such a valuation report would be an expert report prepared in accordance with the Federal Rules of Evidence Rule 26.

SUMMARY AND CONCLUSION

Valuation analysts apply generally accepted approaches and methods to value intellectual property. Damages analysts apply generally accepted approaches and methods to measure intellectual property damages. And, transfer price analysts apply generally accepted approaches and methods to determine an intellectual property arm's-length price.

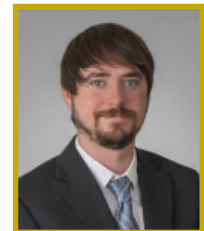
This discussion summarized the conceptual foundations and the practical applications of the cost approach in the development of intellectual property valuation, damages, and transfer price analyses.

Additional discussions in this *Insights* issue consider the reporting of—and the analyst's defense of—the cost approach valuation, damages, or transfer price analysis.

And, additional discussions in this *Insights* issue consider the application of the cost approach to intellectual property analyses developed for specific purposes—such as for fair value measurements and financial accounting purposes.

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Intellectual Property Valuation Considerations Specific to Fair Value Measurement Assignments

Nathan P. Novak and Robert F. Reilly, CPA

Fair value measurements are rules-based analyses. Fair market value valuations are judgment-based analyses. This discussion focuses on the fair value measurement of intellectual property for various purposes related to U.S. generally accepted accounting principles ("GAAP"). In particular, this discussion considers the application of the cost approach in the development of intellectual property fair value measurements prepared in order to comply with various GAAP financial accounting provisions.

INTRODUCTION

This *Insights* issue does not focus primarily on intellectual property valuations prepared for fair value measurement ("FVM") financial accounting purposes. Such FVM analyses are developed based on the fair value standard of value.

This discussion, however, summarizes many of the analyst considerations related to intellectual property fair value measurements developed for financial accounting purposes.

FAIR VALUE MEASUREMENTS

Typical FVM assignments involving intellectual property include the following:

1. The intellectual property FVM developed in the context of the acquisition accounting for a business combination (in compliance with Financial Accounting Standards Board ["FASB"] Accounting Standards Codification ["ASC"] Topic 805)

2. The intellectual property FVM developed in the context of testing for intangible asset impairment and goodwill impairment (in compliance with FASB ASC topic 350)

The FVM of private equity or venture capital fund portfolio investments may also involve analysis of the intellectual property developed and owned by the portfolio company. Such an intellectual property analysis may be included in a valuation analysis of the portfolio company that applies the asset-based approach and the asset accumulation method of business valuation.

Each of the above-mentioned assignments typically involves the FVM of intellectual property as a component of the financial accounting analysis.

Acquisition accounting FVM assignments are developed after a business combination transaction. With few exceptions, FASB ASC 805 business combination provisions require the FVM of the acquired assets and the assumed liabilities—to be recognized at acquisition date.



Related to post-acquisition accounting, the impairment testing of the carrying amount of an owner/operator's intangible assets (including the intellectual property) is typically developed on an annual basis.

Under U.S. generally accepted accounting principles ("GAAP"), the guidance for the impairment testing of indefinite-lived intangible assets and goodwill is provided in FASB ASC Topic 350.

Both purchase accounting FVM and indefinite-lived intangible asset or goodwill impairment testing assignments involve the fair value standard of value—as provided for in the FASB ASC Topic 820, *Fair Value Measurements* guidance.

FASB ASC Topic 820-10-20 defines fair value as "the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date."

Accordingly, the fair value standard of value will often differ from other standards of value. The FVM should reflect all assumptions that market participants would use in pricing an asset or a

liability. The FVM does not necessarily reflect the specific reality or assumptions of the actual intellectual property owner/operator or of a particular intellectual property willing buyer/seller or willing licensor/licensee.

When developing an FVM for a financial accounting assignment, there are often additional procedures that the analyst should consider in order to develop the perspective of a market participant.

The following list provides some FVM-specific procedures that the analyst may undertake when developing an intellectual property FVM for financial accounting purposes:

- Select the appropriate market for the intellectual property.
- Identify the market participants.
- Apply market participant assumptions.
- Determine the highest and best use ("HABU") for the intellectual property.

Because the definition of fair value is an exit price that uses market participant assumptions, the intellectual property's actual intended use by its

actual owner/operator is rarely considered relevant for purposes of FVM under FASB ASC Topic 820.

Typically, the analyst begins with the actual circumstances or assumptions that may be applicable to the subject intellectual property owner/operator. The analyst then performs procedures to assess whether evidence exists that market participants would make different assumptions.

In addition, in accounting for the perspective of a market participant, the analyst may analyze and quantify certain components of a cost approach valuation analysis differently in an FVM assignment.

For example, an analyst developing an FVM should consider whether a market participant would be willing to pay for the developer's profit or the entrepreneurial incentive components of the cost approach valuation analysis.

When developing an FVM in accordance with FASB ASC Topic 820, it is important for analysts to comply with this guidance (and with any other applicable FASB ASC topic). Accordingly, analysts should refer to the relevant FASB guidance when developing an FVM for financial accounting purposes.

FASB ASC Topic 820, *Fair Value Measurement* establishes specific guidance for FVM reporting. While such guidance is generally formulaic, it also allows for some professional judgment. In circumstances that require professional judgment, it is possible for two analysts—given the same facts and circumstances—to arrive at different value conclusions that result in different financial reporting for the intellectual property owner/operator.

For example, the analyst's treatment of the income tax amortization benefit ("TAB") adjustment exemplifies a circumstance (1) that requires professional judgment and (2) that may produce different financial reporting outcomes. However, relevant FASB ASC guidance should be adhered to when preparing and documenting the processes and procedures performed in developing an FVM—even when analyst professional judgment is applied.

THE MANDATORY PERFORMANCE FRAMEWORK

Analysts should be aware of all recent developments related to FVMs and to financial accounting assignments. Some of these developments include:

1. the Certified in Entity and Intangible Valuations ("CEIV") credential and

2. the publication of the *Mandatory Performance Framework* ("MPF"), developed by the Performance Framework Task Force.

The CEIV credential is offered by several valuation professional organizations ("VPOs"). These VPOs include the American Institute of Certified Public Accountants, the American Society of Appraisers, and the Royal Institute of Chartered Surveyors.

The CEIV credential was developed specifically to address FVMs performed for financial accounting purposes. An important consequence of the development of the CEIV credential is the implementation of the MPF.

The MPF is defined in the *Mandatory Performance Framework for the Certified in Entity and Intangible Valuations Credential* as "a document for valuation professionals that provides guidance on how much support, in terms of scope of work and documentation, should be prepared or obtained when designing, implementing, and conducting valuations of businesses, business interests, intangible assets, certain liabilities, and inventory used for management assertions made in financial statements issued for financial reporting purposes."

Only CEIV credential holders are required to comply with the provisions of the MPF. For valuation analysts who do not hold the CEIV credential, however, the consensus of the valuation profession is that the MPF (1) represents best practices and (2) provides instructional guidance and parameters that will improve the quality of documentation and work related to FVMs and other financial accounting valuation assignments.

This MPF professional guidance specifically relates to:

1. due diligence procedures and
2. valuation work paper documentation and analysis support.

The MPF document includes the following four sections:

1. *Preamble*. This MPF section provides an overview of the framework's scope and purpose.
2. *Valuation engagement guidance*. This MPF section establishes the parameters of documentation requirements that valuation professionals should adhere to.

3. *Mandatory performance framework glossary.* This MPF section sets forth the definitions of terms that may be unique to the framework and, when necessary, defines their meaning within the context of the MPF.
4. *Authoritative and technical guidance.* This MPF section lists accounting, auditing, and valuation standards and certain technical literature applicable to the MPF guidance.



In addition, as a separate document, the *Application of the Mandatory Performance Framework for the Certified in Entity and Intangible Valuations Credential* (the “Application”), provides professional guidance related to applying the MPF to specific subject matter interests.

Both the MPF and the Application emphasize intellectual property valuation procedures that relate to the market approach and the income approach within the context of the fair value standard for FVM purposes.

The MPF and the Application also provide relevant guidance concerning the application of the cost approach to intellectual property FVM purposes.

Among other topics, the MPF includes professional guidance related to the following topics:

- The application and measurement of the TAB
- The derivation of a present value discount rate
- The application of valuation discounts and premiums
- The estimation of useful economic life (“UEL”)
- The valuation of the assembled workforce as a contributory intangible asset
- The reconciliation of intellectual property value indications when several valuation approaches are applied

Beyond providing guidance regarding the factors for an analyst to consider when developing intellectual property FVMs, the MPF describes minimum scope of work and due diligence procedures. The analyst should apply the procedures described in

the MPF guidance when selecting and applying the cost approach.

Whether the analyst holds the CEIV credential and is required to adhere to the MPF or the analyst is not a CEIV credential holder but is applying the MPF to follow the profession’s best practices, the MPF provides guidance on how much work to do for the valuation, not how to develop the valuation.

The analyst’s professional judgment is important to ensure that relevant inputs, procedures, and assumptions are applied to each FVM engagement. The MPF provides professional guidance to assist the analyst to develop an FVM that is transparent and auditable.

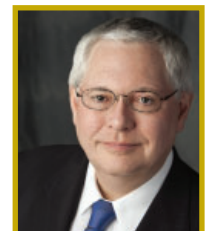
SUMMARY AND CONCLUSION

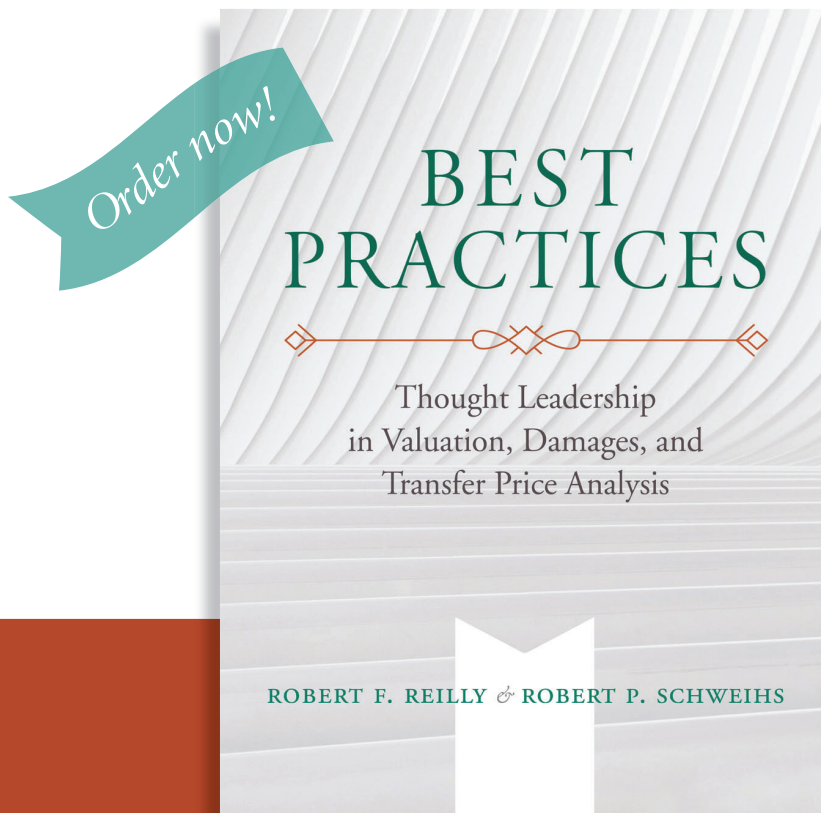
A fair value measurement is a rules-based analysis. A fair market value valuation is a judgment-based analysis. This discussion considered (1) the GAAP accounting guidance and (2) the other professional guidance related to the fair value measurement of intellectual property.

In particular, this discussion considered the application of the cost approach in a fair value measurement developed for various financial accounting purposes.

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Generally Accepted Intellectual Property Valuation Approaches

Nicholas J. Henriquez and Robert F. Reilly, CPA

Valuation analysts (“analysts”) may be retained to value an owner/operator’s intellectual property for various accounting, taxation, financing, controversy, planning, and other purposes. This discussion summarizes the generally accepted intellectual property valuation approaches and methods. This discussion primarily focuses on the conceptual development for—and the practical application of—the cost approach in the development of an intellectual property valuation. In addition, this discussion considers the professional standards and other professional guidance available to analysts related to developing the intellectual property valuation.

INTRODUCTION

There are three generally accepted intellectual property valuation approaches: the cost approach, the market approach, and the income approach. The valuation analyst (“analyst”) should consider the application of each generally accepted approach in the development of an intellectual property valuation.

In each intellectual property valuation, the analyst should apply the generally accepted approach or approaches that best fit the particular needs and circumstances (including data availability) of the assignment.

Applying multiple valuation approaches provides the analyst with multiple value indications that may be reconciled into a range of intellectual property values. The analyst can then consider mean, median, mode, interquartile measures, and other central tendency measures with regard to the various intellectual property value indications.

The synthesis and reconciliation of the various value indications should support the analyst’s final value conclusion. However, such a reconciliation of several value indications is not always possible.

When data are limited, intellectual property valuations are often based on only one generally accepted valuation approach.

For each intellectual property valuation, the analyst typically selects the particular valuation approach or approaches that:

1. are supported by the greatest quantity and quality of available data;
2. best reflect the actual transactional negotiations of market participants in the intellectual property owner/operator’s industry;
3. best fit the particular characteristics of the subject intellectual property, such as its use and its age; and
4. are most consistent with the practical experience and professional judgment of the individual analyst.

Within each valuation approach, there are several valuation methods that the analyst may consider. Further, within each valuation method, there are various procedures that the analyst may perform. To conclude an intellectual property value indication, the analyst develops valuation procedures within a

valuation method and valuation methods within a valuation approach.

If, after developing the intellectual property valuation approaches, methods, and procedures, the analysis provides several value indications, then the analyst considers and reconciles the various value indications. This process of the reconciliation of alternative value indications results in the final value conclusion.

COST APPROACH FUNDAMENTAL PRINCIPLES

The economic principle of substitution is fundamental to the intellectual property valuation cost approach. That is, the value of a fungible intellectual property is influenced by the cost to create a substitute (typically, a new) intellectual property.

As discussed further in the Cost Measurement Procedures section of this discussion, all cost approach property valuation methods apply a comprehensive definition of cost. Such a definition of cost typically includes consideration of an opportunity cost during the intellectual property development stage.

After considering all cost components, the value of the new substitute intellectual property should be adjusted in order to make the hypothetical (new) intellectual property more comparable to the actual (seasoned) intellectual property.

In valuation terminology, such an adjustment to the cost measurement (as in, a *decrease* in value) is referred to as *depreciation*. We note that *appraisal depreciation* should not be confused with *accounting depreciation*.

Some analysts (and some intellectual property owner/operators—and their legal counsel) erroneously believe that the cost approach relies exclusively on historical information. For example, one typical misinterpretation is that the cost approach should be based on the accounting book value of the intellectual property. This misconception implies that the intellectual property value should be calculated based on the property's historical cost—adjusted for any accounting amortization or recognition of impairment.

It is important that analysts recognize that cost approach valuation methods are forward-looking estimates. For example, the expected cost of a developing a new intellectual property typically involves estimates of developer's profit and entrepreneurial incentive, resulting in a value indication that has little resemblance to the historical-cost-

based accounting book value of the subject intellectual property.

It is noteworthy that not all intellectual property is fungible. Legally, some intellectual properties are unique and, therefore, cannot be replaced. For intellectual properties considered to be unique, a substitute or replacement intellectual property may not actually be available at any cost.

In such an instance, the cost approach is still applicable to the valuation of that unique intellectual property. This is because the cost approach involves the analysis of a hypothetical intellectual property. In developing the hypothetical analysis, the analyst (and the cost approach methodology) assumes that the actual intellectual property does not exist.

In the application of the cost approach, the hypothetical (new) intellectual property does not compete with the actual intellectual property. This is because, in the hypothetical cost approach scenario, the actual (seasoned) intellectual property does not exist.

In a cost approach analysis, the actual (or seasoned) intellectual property is “assumed away.” That is, the actual intellectual property is assumed not to exist. Therefore, the assumed hypothetical (new) intellectual property never exists in the same space as the actual “assumed away” intellectual property.

For an intellectual property valuation, the analyst should note that the cost approach considers the cost to replace the utility of the actual intellectual property. That is, the application of the cost approach assumes that the actual intellectual property does not already exist.

Real estate appraisers call this assumption the greenfield premise. Based on the assumed greenfield (or empty field) premise, the subject building and improvements are assumed not to exist. That is, the real estate appraiser faces an undeveloped greenfield (as in, a vacant site) in the appraiser's application of the cost approach analysis.

In the intellectual property valuation, the replacement intellectual property provides the same utility as the actual (seasoned) intellectual property. Because the analyst assumes a greenfield, the hypothetical (new) intellectual property does not infringe on the actual (seasoned) intellectual property.

An FCC license may be an example of a fungible intangible property. A buyer may refuse to accept

“It is important that analysts recognize that cost approach valuation methods are forward-looking estimates.”

the seller's asking price for, say, an FCC broadcast license.

Instead, the buyer can go to the marketplace (or to the FCC) and buy a perfectly identical substitute license. In this case, even though there is really only one (the actual) license, the cost of the hypothetical alternative—or substitute—license is relevant to the valuation of the actual FCC license.

Accordingly, the cost approach may still be an appropriate valuation approach for an intellectual property that is not fungible. In the case of a patent, the willing buyer may buy a functionally similar patent or develop a new noninfringing invention. Let's assume this noninfringing invention results in a substitute patent. This is because the actual invention is "assumed away."

A perfectly identical substitute patent would by definition infringe on the actual patent. However, the actual (or seasoned) patent is "assumed away." Therefore, in applying the cost approach, the analyst considers the cost for a market participant to develop a noninfringing substitute with the equivalent utility to the actual patent. Accordingly, the cost approach may be applied in the patent—or similar intellectual property—valuation.

MARKET APPROACH FUNDAMENTAL PRINCIPLES

Applying the market approach, the intellectual property value may be estimated by reference to prices paid in the marketplace for the arm's-length sale or license of either a comparable—or a guideline—intellectual property.

A comparable intellectual property is one that is very similar to the actual intellectual property. A comparable intellectual property is approximately the same age, is at approximately the same place in its life cycle, and is used in approximately the same way that the actual intellectual property is used.

The comparable intellectual property may be used in the same industry, performing about the same function, at about the same size company as the actual intellectual property.

Sales or licenses of a comparable intellectual property provide direct pricing evidence to the analyst with regard to the actual intellectual property. Accordingly, the analyst may be able to calculate central tendency (e.g., mean, median, mode) pricing metrics from the comparable sale or license transactional data. The analyst may be able to apply the comparable-transaction-derived central tendency pricing metrics to the actual intellectual property.

However, regardless of what pricing metric the analyst selects from the transactional data (e.g., mean, median, first quartile, third quartile, etc.), that selection should be documented and supported. That selection should be based on both qualitative and quantitative comparisons between (1) the actual intellectual property and (2) the sample of comparable intellectual property.

In contrast, a guideline intellectual property is generally similar (but not identical) to the subject intellectual property. The guideline intellectual property should be subject to the same general risk and expected return investment characteristics as the actual intellectual property.

However, compared to the owner/operator's actual intellectual property, the guideline intellectual property may be operated in a different industry, at a company of different size, with a different function, and so forth.

Nonetheless, sales or licenses of guideline intellectual property provide meaningful (albeit indirect) pricing guidance to the analyst with regard to the actual intellectual property.

To obtain meaningful pricing guidance from guideline intellectual property sale or license transactions, the analyst should compare the guideline intellectual property functions to the actual intellectual property functions. Such a functional analysis is often based on such measures as relative growth rates, relative profit margins, relative returns on investment, and the like. These comparative analyses allow the analyst to select subject-specific valuation pricing metrics.

With regard to a valuation, a damages measurement, or a transaction pricing analysis, the analyst may consider comparable uncontrolled transaction ("CUT") pricing data related to comparable intellectual property sales or licenses and/or to guideline intellectual property sales or licenses.

After screening for, identifying, and supporting the selection of CUTs, the analyst considers the CUT data in order to extract (1) pricing multiples or (2) capitalization rates. Such CUT-derived pricing multiples or capitalization rates can be applied to the owner/operator's actual intellectual property.

INCOME APPROACH FUNDAMENTAL PRINCIPLES

The generally accepted intellectual property income approach valuation methods are based on the economic principle of anticipation. That is, the value of any property is the present value of the income that

the owner/operator expects to receive from the owning or operation of that property.

All income approach valuation methods involve projecting some measure of owner/operator income over the intellectual property's expected useful economic life ("UE")L.

This intellectual-property-related income measure may relate to:

1. the income earned from operating the intellectual property in the owner/operator's business enterprise; this income is called operating income) and/or
2. the income earned from the outbound license of the intellectual property from the owner/licensor to an operator/licensee that will pay a royalty (or some other payment) for use of the intellectual property; this income is typically called ownership income.

This projection of the intellectual-property-related income is converted to a present value by using a risk-adjusted present value discount rate (or an annuity period direct capitalization rate).

APPLICATION OF THE COST APPROACH

Cost approach valuation methods are particularly applicable for the valuation of a recently developed intellectual property. With a relatively new intellectual property, the owner/operator's development cost and development effort data may still be available (or can be accurately estimated).

Cost approach valuation methods are also particularly applicable to the valuation of (1) an in-process intellectual property and (2) a noncommercialized, defensive intellectual property.

An example of a noncommercialized intellectual property is a patent or a trademark held primarily for its strategic defensive use (to ensure that the owner's competitors' cannot own or operate the actual patent or trademark, for instance).

When applying the cost approach, the analyst should realize that the intellectual property value



does not derive solely from the current cost measure. Rather, intellectual property value derives from:

1. the current cost measure (however defined) less
2. appropriate allowances for all forms of appraisal depreciation and obsolescence.

APPLICATION OF THE MARKET APPROACH

The generally accepted intellectual property market approach valuation methods are particularly applicable when there is a sufficient quantity of comparable (almost identical) transaction data or guideline (similar from a risk and expected return perspective) transaction data. These intellectual property transactions may relate to either sale or inbound/outbound license transactions.

The analyst extracts market-derived valuation pricing metrics (e.g., pricing multiples or capitalization rates) from these CUT data. After (1) developing a statistical analysis of the CUT pricing metrics and (2) developing a functional analysis of the subject intellectual property, the analyst selects (and documents the selection of) subject-specific pricing metrics.

Finally, the analyst applies the subject-specific pricing metrics to the corresponding metrics of the actual intellectual property—in order to develop a market approach value indication.

APPLICATION OF THE INCOME APPROACH

Income approach valuation methods may particularly apply to situations in which the actual intellectual property is used to generate a measurable amount of either business enterprise (i.e., operating income) or license (i.e., ownership) income.

Income approach valuation methods may also be applied when the owner/operator elects to not commercialize the intellectual property. For example, the owner/operator may elect to develop and maintain the intellectual property for defensive purposes. This may be the case when such deliberate forbearance of use is for the purpose of protecting the income produced by the owner/operator's other intellectual property.

The applicable measure of income in this analysis would be the "opportunity cost" related to the noncommercialized, defensive intellectual property. Opportunity cost is often measured as:

1. the actual income generated by the "protected" intellectual property less
2. the hypothetical income that the protected intellectual property would generate "but for" the defensive protection of the actual noncommercialized intellectual property.

INTELLECTUAL PROPERTY VALUATION PROCESS: DATA GATHERING AND DUE DILIGENCE

Before selecting and applying each generally accepted valuation approach, method, and procedure, the analyst should perform due diligence with respect to the intellectual property. Legal counsel may sometimes participate in the due diligence process, especially when the intellectual property valuation relates to a transaction, financing, or litigation matter.

However, the due diligence procedures discussed herein are designed to help the analyst identify and obtain information for the valuation analysis. The analyst's due diligence process is a *supplement to*—not a *replacement for*—the legal counsel's due diligence process.

Typically, the analyst first gathers and analyzes information related to the current intellectual property owner/operator.

This information usually relates to both the historical development and the current use of the intellectual property. This information typically includes the following:

- The owner/operator's historical and prospective financial statements (related to the line of business or business unit that operates the intellectual property)
- The owner/operator's historical and prospective intellectual property development and maintenance costs
- Any current and expected owner/operator resource/capacity constraints (such as those related to raw materials, production, storage, distribution, sales, etc.)
- A description and estimate of intellectual property economic benefits to the current owner/operator; these typically include the following components:
 - Any associated revenue increase (such as that related to product unit price/volume, market size/position)
 - Any associated expense decrease (such as expenses related to product returns; cost of goods sold; selling, general, and administrative; and research and development)
 - Any associated investment decrease (such as that related to inventory and capital expenditures)
 - Any associated risk decrease (for example, the existence of any intellectual property licenses or contracts, a decrease in cost of capital components, the defensive use of the intellectual property)
 - Any assessment of the impact of the intellectual property on the owner/operator's strategic/competitive strengths, weaknesses, opportunities, and threats

The analyst may consider the intellectual property's market potential outside the current owner/operator. For example, the analyst may consider the following factors from the perspective of an alternative owner/operator (such as a hypothetical willing buyer or market participant):

1. A change in market definition or market size for an alternative owner/operator
2. A change in alternative/competitive uses of the intellectual property to an alternative owner/operator
3. The intellectual property's ability to create inbound/outbound license opportunities for an alternative owner/operator

4. Whether the current owner can operate the intellectual property while outbound-licensing it (in different products, different markets, different territories, and so forth)

To the extent that the intellectual property is subject to an inbound or outbound license (or other contract), the analyst may look for the more typical contract terms. Many typical contract terms associated with intellectual property use licenses or development/commercialization agreements are listed in Exhibit 1.

The analyst also may review and challenge:

1. any owner/operator-prepared financial projections related to the intellectual property or to the owner/operator entity and
2. any owner/operator-prepared measures of intellectual property economic benefits.

In particular, the analyst may test (1) the performance risk of such financial projections and (2) the reasonableness of such economic benefit measures. The analyst may develop comparisons of the financial projections or the benefit measures against the owner/operator's actual historical performance, industry performance, guideline company performance, and other benchmarks.

For example, the analyst may develop the following benchmark comparative analyses:

1. Compare any owner/operator-prepared prior financial projections to the actual historical results of operations.
2. Compare any owner/operator-prepared current financial projections to the owner/operator's current capacity constraints.
3. Compare any owner/operator-prepared current financial projections to the current total market size (such as demand, capacity, and so on).
4. Consider any published industry average comparable profit margin data for the owner/operator's industry.
5. Consider selected publicly traded guideline company comparable profit margin data for the owner/operator's industry.
6. Consider the quality and quantity of available guideline or comparable intellectual property license data for the owner/operator's industry.
7. Perform an expected UEL analysis, with consideration of the following intellectual property life measurements:
 - Legal/statutory life
 - Contract/license life

Exhibit 1

Intellectual Property Licenses and Other Agreements

Typical Intellectual Property Contract Terms

1. Intellectual property licenses – typical contract terms:
 - Identity of the licensor and the licensee
 - Term of the agreement (including any renewal options)
 - Intellectual property legal protection requirements
 - Amount and responsibility for research and development expenditures
 - Amount and responsibility for marketing, advertising, or other promotional expenditures
 - Responsibility to obtain and maintain any licenses, permits, or other regulatory approvals
 - Milestone dates for regulatory approvals, commercialization, sales levels, and so on
2. Other intellectual property contracts – typical contract terms:
 - Minimum use, production, or sales requirements
 - Minimum marketing, promotion, or commercialization expense requirements
 - Research and development technology-development payments and development-completion payments
 - Party responsible for obtaining required regulatory approvals
 - Milestone license payments
 - Rights to any future developments
 - Rights to sublicense

- Technology obsolescence life
- Economic obsolescence life
- Lives of prior generations of the subject intellectual property
- Position of the subject intellectual property in its current life cycle

The analyst typically compares the owner/operator's historical and projected results of operations to the selected guideline public companies. The analyst may also compare the owner/operator's results of operations to industry data. Exhibit 2 presents some of the published sources of industry data that analysts may consider for these industry-related benchmark comparative analyses.

The list of industry-related data sources presented in Exhibit 2 is not intended to be comprehensive.

The industry-related data sources provided in Exhibit 2 may enable the analyst to compare (1) the owner/operator's financial results to (2) benchmark industry expense ratios, profit margins, returns on investment, and so forth. These industry benchmark comparisons may assist the analyst to assess the reasonableness of:

1. the owner/operator's intellectual-property-related financial projections and/or
2. the owner/operator's assessment of any intellectual property economic benefits.

Exhibit 3 lists some of the automated databases that analysts may access in order to obtain information related to individual owner/operator companies. These databases typically include information about both:

1. publicly traded companies and
2. privately owned companies.

Such databases are often considered by analysts in the intellectual property:

1. due diligence process and
2. the benchmark comparative analysis process.

The list of databases presented in Exhibit 3 is not intended to be comprehensive.

REASONS TO APPLY THE COST APPROACH IN THE INTELLECTUAL PROPERTY VALUATION

For the most part, the analyst's selection of the intellectual property valuation approach or approaches to apply in any particular analysis is a process of elimination. The analyst usually attempts to apply all intellectual property valuation approaches for which reliable data are available.

When there are sufficient reliable data with which to develop all three valuation approaches, the analyst will typically apply all three approaches.

Exhibit 2

Sources of Industry Financial and Operational Ratio Data Applicable in the Intellectual Property Due Diligence and Benchmark Comparative Analysis

- The Risk Management Association — *Annual Statement Studies: Financial Ratio Benchmarks*
- FirstResearch — *Industry Profiles*
- IBISWorld — *Industry Reports*
- BizMiner (The Brandow Company) — *Industry Financial Profiles*
- CCH, Inc. — *Almanac of Business and Industrial Ratios*
- IndustriousCFO (formerly Fintel, LLC) — *Industry Average Ratios*
- MicroBilt Corporation (formerly IntegraInfo) — *Integra Financial Benchmarking Data*
- ValuSource — *IRS Corporate Ratios*
- Schonfeld & Associates, Inc. — *IRS Corporate Financial Ratios*
- S&P Capital IQ — *Industry Profiles*
- S&P Global — *Industry Surveys*
- Duff & Phelps, LLC — *Valuation Handbook: U.S. Industry Cost of Capital*

Exhibit 3

Databases Guideline Intellectual Property Owner/Operators

Applicable to the Intellectual Property Due Diligence and Benchmark Comparative Analysis

S&P Capital IQ — This database provides the analyst with numerous screening criteria, including, but not limited to, industry; business description; geographic location; financial data, such as revenue, EBITDA, or assets; and stock closing price. The database contains information on more than 88,000 companies worldwide and provides more than 5,000 unique financial data items. SEC filings and some foreign annual reports can be accessed directly from S&P Capital IQ. Analyst reports are available for an additional fee. More information can be found at www.capitaliq.com.

Thomson ONE — This database provides the analyst with numerous screening criteria, including, but not limited to, industry; business description; financial data, such as revenue, EBITDA, or assets; geographic location; and closing price. The database contains information on more than 70,000 companies worldwide. Analyst reports are also available. More information can be found at www.thomsonone.com.

FactSet — This database provides the analyst with numerous screening criteria, including, but not limited to, industry; business description; financial data such as revenue, EBITDA, or assets; geographic location; and closing price. The database contains information on more than 73,000 companies worldwide and provides more than 2,000 unique financial data items. More information can be found at www.factset.com.

Bloomberg Professional— This database provides the analyst with numerous screening criteria, including, but not limited to, industry; business description; financial data such as revenue, EBITDA, or assets; geographic location; and closing price. The database contains information on every publicly traded U.S. company and on more than 45,000 foreign companies. More information can be found at www.bloomberg.com/professional/.

MergentOnline — This searchable database provides the analyst with information on more than 35,000 active and inactive companies. Companies can be screened with numerous criteria, including, but not limited to, industry; business description; financial data such as revenue, EBITDA, or assets; geographic location; and closing price. More information can be found at www.mergentonline.com.

BVR Guideline Public Company Comps Tool — This database provides the analyst with information on all publicly traded U.S. companies. Users can screen with numerous criteria, including, but not limited to, industry; business description; financial data such as revenue, EBITDA, or assets; geographic location; and closing price. More information can be found at www.bvmarketdata.com.

Hoovers — This database, owned by D&B, provides the analyst with information on more than 85 million private and public companies. Data availability varies widely depending on the size of the company and whether it is publicly traded or privately held. Researchers can screen companies with more than 70 search criteria. More information can be found at www.hoovers.com.

Sentio — This database provides the analyst with information on over 70,000 global equity securities. The platform allows the analyst to perform an intelligent document search through millions of SEC filings, transcripts, and presentations for tens of thousands of publicly traded companies. More information can be found at www.sentio.com.

Pitchbook — This database contains a screening function that allows the analyst to perform customized searches for companies or transactions. Pitchbook database identifies comparable companies and transactions, and provides financial information on each company or deal. Venture capital and private equity information is also available on this platform. More information can be found at www.pitchbook.com.

“The development of the cost approach is particularly applicable to certain types of intellectual property.”

When there are sufficient reliable data with which to develop only two valuation approaches, the analyst will develop those two approaches. Similarly, when there are sufficient reliable data with which to develop only one valuation approach (for example, the cost approach), then the analyst develops that one

valuation approach only.

If sufficient guideline sale or license transaction data are not available or if the intellectual property is not the type of property that generates a measurable amount of income (however defined), then the analyst may have to rely on the application of the cost approach by default.

The development of the cost approach is particularly applicable to certain types of intellectual property. These types of intellectual property generally include the following:

1. Intellectual property that are recently developed (as in, relatively new)
2. Intellectual property that are fungible or may be easily exchanged or substituted
3. Intellectual property for which the owner/operator's historical development cost data are still available
4. Intellectual property that are operated by an owner with the expertise to assist the analyst in the estimation of a current development cost
5. Intellectual property that are operated by an owner with the expertise to assist the analyst in the estimation (a) of an expected UEL and (b) of obsolescence
6. Intellectual property that are used (or used up) in the production of income but which themselves do not produce any income; examples of such contributory intellectual property include trade secrets—in the form of product formulae, employee or workstation training/operator manuals, operating procedures, computer software, the proprietary knowledge of an assembled workforce, and so forth (such contributory intellectual property types are sometimes referred to as “back room” intellectual property)

When considering the application of the cost approach, the analyst should consider whether there are sufficient reliable data available in order to estimate both:

1. the intellectual property current cost metric (such as replacement cost new or reproduction cost new) and
2. all forms of intellectual property appraisal depreciation and obsolescence (including economic obsolescence).

The estimation of obsolescence often involves an analysis of the intellectual property's expected UEL. The topic of UEL analysis is considered in a later discussion in this *Insights* issue.

SUMMARY AND CONCLUSION

This discussion summarized the generally accepted intellectual property valuation approaches. This discussion considered the fundamental principles of—and the application of—all three generally accepted intellectual property valuation approaches.

In particular, this discussion summarized the generally accepted cost approach valuation methods and procedures. This discussion described the many instances when the cost approach is particularly applicable to the development of the intellectual property valuation. And, this discussion described the types of intellectual property for which the development of the cost approach is particularly applicable.

Finally, this discussion summarized the analyst's due diligence process—and the analyst's benchmark comparative analysis process—in the development of the cost approach to intellectual property valuation.

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Intellectual Property Cost Approach Valuation Methods

John C. Ramirez

The cost approach is particularly applicable to the valuation of certain types of intellectual property—and of related general intangible property. And, the cost approach is particularly applicable in the development of intellectual property valuations—and damages measurement analyses and transfer price analyses—performed for certain purposes. This discussion describes—and illustrates—the individual cost approach methods and procedures that analysts generally consider in an intellectual property valuation, damages measurement, or transfer price analysis.

INTRODUCTION

There are several generally accepted intellectual property valuation methods within the category of the cost approach. Each of these generally accepted valuation methods applies a definition (or measurement metric) of cost. These specific various cost measurement definitions include the following:

1. Reproduction cost new
2. Replacement cost new

Reproduction cost new (“RPCN”) measures the total cost, in current prices as of the date of the analysis, to develop an exact duplicate of the actual intellectual property. The reproduction intellectual property is developed using the same types of materials (if any) and labor, development standards, design, layout, and quality of workmanship as the actual intellectual property.

The reproduction intellectual property includes all of the inadequacies, superadequacies, and other indicia of obsolescence (if any) of the actual intellectual property.

The RPCN cost measurement metric is often applied (1) when the actual intellectual property is

fairly new or (2) when the actual intellectual property could still be considered a reasonable replacement for itself.

Replacement cost new (“RCN”) measures the total cost, in current prices as of the date of the analysis, to develop a new intellectual property having the same functionality or utility as the actual (seasoned) intellectual property.

Functionality is an engineering concept that means the ability of the intellectual property to perform the task for which it was designed.

Utility is an economics concept that means the ability of the intellectual property to provide an equivalent amount of satisfaction to the owner/operator.

The replacement intellectual property is developed using modern materials (if any) and labor, development standards, design, layout, and quality of workmanship. The replacement intangible asset typically excludes all curable inadequacies, superadequacies, and obsolescence that may be present in the actual intellectual property.

The RCN cost measurement metric is more often applied (1) when the actual intellectual property is fairly old or (2) when the actual (seasoned)

intellectual property would no longer be considered a reasonable replacement for itself.

There are other cost measurement definitions that may also be applicable to an intellectual property cost approach valuation. Some valuation analysts (“analysts”) consider a measure of cost avoidance as a cost approach method. However, in the professional literature, a cost avoidance valuation method is more appropriately categorized as an income approach valuation method.

Some analysts apply trended historical cost as a cost measurement metric in the application of the cost approach. In this method, the historical development costs are identified, these historical costs are trended to the valuation date by applying an appropriate inflation-related index factor.

This trended historical cost measurement metric is particularly applicable when:

1. the actual intellectual property is relatively new or
2. the owner/operator has fairly complete records related to the historical development costs and efforts related to the actual intellectual property.

In addition, the specific inflation-related trend index applied in the analysis should be appropriate to the type of intellectual property development costs that are being indexed to current costs.

This trended historical cost method often provides an indication of the RPCN of the actual intellectual property.

There are two principles that analysts should be aware of with regard to the application of the cost approach to intellectual property valuation.

First, regardless of the specific cost definition applied in the cost measurement analysis, all cost measurement metrics (including RPCN, RCN, or any other cost measurement metric) should consider a comprehensive cost analysis.

Second, regardless of the cost measurement metric applied, all cost approach valuation methods should develop approximately the same value indication for the same intellectual property. That is, there will be a different cost metric quantified for each cost approach valuation method. There will also be a different appraisal depreciation and obsolescence measurement quantified for each cost approach valuation method.

The differences in the various cost metrics are generally offset by the differences in the appraisal depreciation and obsolescence metrics. And, therefore, the intellectual property value indication

developed from the alternative cost approach valuation methods should be similar.

COST MEASUREMENT PROCEDURES

Any intellectual property cost measurement metric should consider the following four cost components:

- Direct costs (such as materials, labor, and internal owner/operator overhead)
- Indirect costs (such as engineering and design expenses and legal and consulting fees)
- The intellectual property developer’s profit (as in, a profit margin percentage applied to the direct cost and indirect cost investment)
- An opportunity cost/entrepreneurial incentive (such as a measure of lost income or other opportunity cost during the intellectual property development period adequate to motivate the development process)

Intellectual property direct costs and indirect costs are typically easy to identify and quantify. The developer’s profit cost component can be estimated using several generally accepted procedures. This cost component is often estimated as a profit margin percentage applied to the developer’s investment in the material, labor, and owner/operator overhead costs.

The entrepreneurial incentive cost component is often measured as either:

1. the income that the developer would lose during the intellectual property replacement/development period or
2. a fair rate of return on the amount of the investment in the total intellectual property cost metric—during the intellectual property replacement/development period.

The lost income concept of entrepreneurial incentive is often considered in the context of a willing buyer’s “make versus buy” decision. For example, consider a hypothetical willing buyer and a hypothetical willing seller (as in, the current owner) of a patent.

Let’s assume that it would require a two-year period for a hypothetical willing buyer to develop a replacement patent (as in, the elapsed amount time required to develop a new noninfringing invention).

If the buyer decided to buy the seller’s actual patent, then the buyer could start earning income from

it (either operating income or ownership license income) immediately. In contrast, if the buyer decided to make and register its own hypothetical, noninfringing replacement patent, then the buyer would earn no income (either operating income or ownership license income) from the replacement patent during the two-year replacement/development period.

The total of the two years of lost income during the hypothetical replacement patent development period represent the opportunity cost of making (i.e., developing) a de novo, noninfringing replacement patent.

All four cost components—direct costs, indirect costs, developer's profit, and entrepreneurial incentive—should typically be considered in the intellectual property cost approach valuation analysis. The cost approach applies a different set of analyses than does the income approach. However, the cost approach does include certain economic analyses.

These economic analyses can help indicate which of the two related cost approach components should be measured—either:

1. entrepreneurial incentive or lost income opportunity cost (if any) or
2. economic obsolescence or an inadequate return on investment ("ROI") (if any).

The intellectual property development cost metric (however measured) should be adjusted for any value decreases due to:

1. physical deterioration,
2. functional obsolescence, and/or
3. external obsolescence.

All types of physical deterioration and obsolescence are collectively referred to as depreciation. This is the valuation profession's term for a reduction in value, and the term depreciation is applied to both tangible property and intangible property. Appraisal depreciation should not be confused with accounting depreciation.

Physical deterioration is a reduction in property value due to physical wear and tear. It is unlikely (but not impossible) that an intellectual property will experience physical deterioration. Nonetheless, the analyst should consider the existence of any physical deterioration in any cost approach valuation analysis.

For example, physical deterioration can be considered in the cost approach valuation of the

trade secrets component of a trained and assembled workforce (with consideration of whether some employees are nearing retirement age, for instance).

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

Let's consider the valuation of computer software copyrights and trade secrets, for example. If the source code is written in an obsolete programming language, then the software may suffer from functional obsolescence.

External obsolescence is a reduction in intellectual property value caused by effects, events, or conditions external to—and not controlled by—the current use or condition of the property. The impact of external obsolescence is usually beyond the control of the intellectual property owner/operator.

There are two types of external obsolescence:

1. Locational obsolescence
2. Economic obsolescence

Locational obsolescence is a decrease in the intellectual property value caused by changes in neighborhood conditions. This type of obsolescence typically affects intangible property related to real estate, such as easements, drilling rights, air rights, construction permits or rights, environmental operating permits, water extraction rights, and the like. Locational obsolescence typically does not affect intellectual property.

Economic obsolescence relates to the inability of the intellectual property owner/operator to earn a fair rate of ROI related to the intangible property. Economic obsolescence can affect most types of intellectual property. The measurement of economic obsolescence is described later in this discussion.

Obsolescence of any type is considered curable when the owner/operator's cost to cure (as in, resolve) the inefficiency is less than the decrease in value caused by the inefficiency. Obsolescence of any type is considered incurable when the owner/operator's cost to cure the inefficiency is greater than the decrease in value it causes.

Let's say that an owner/operator operates an inefficient copyrighted computer software that

was written in an inefficient third-generation language). It would cost the owner/operator \$1 million to reprogram software using a more efficient fifth-generation language. For the owner/operator, the new software system would create a savings in both computer hardware and clerical support expenses that exceeds \$1 million (on a present value basis).

Therefore, that intellectual property's obsolescence is considered to be curable. Had the savings been projected to be less than the cost to reprogram the software, then the intellectual property functional obsolescence would be considered to the incurable.

In any cost approach analysis, the analyst should estimate the amount (if any) of physical deterioration, functional obsolescence, and external (potentially economic) obsolescence related to the actual intellectual property.

In estimating the above-mentioned components of appraisal depreciation, the analyst may consider both:

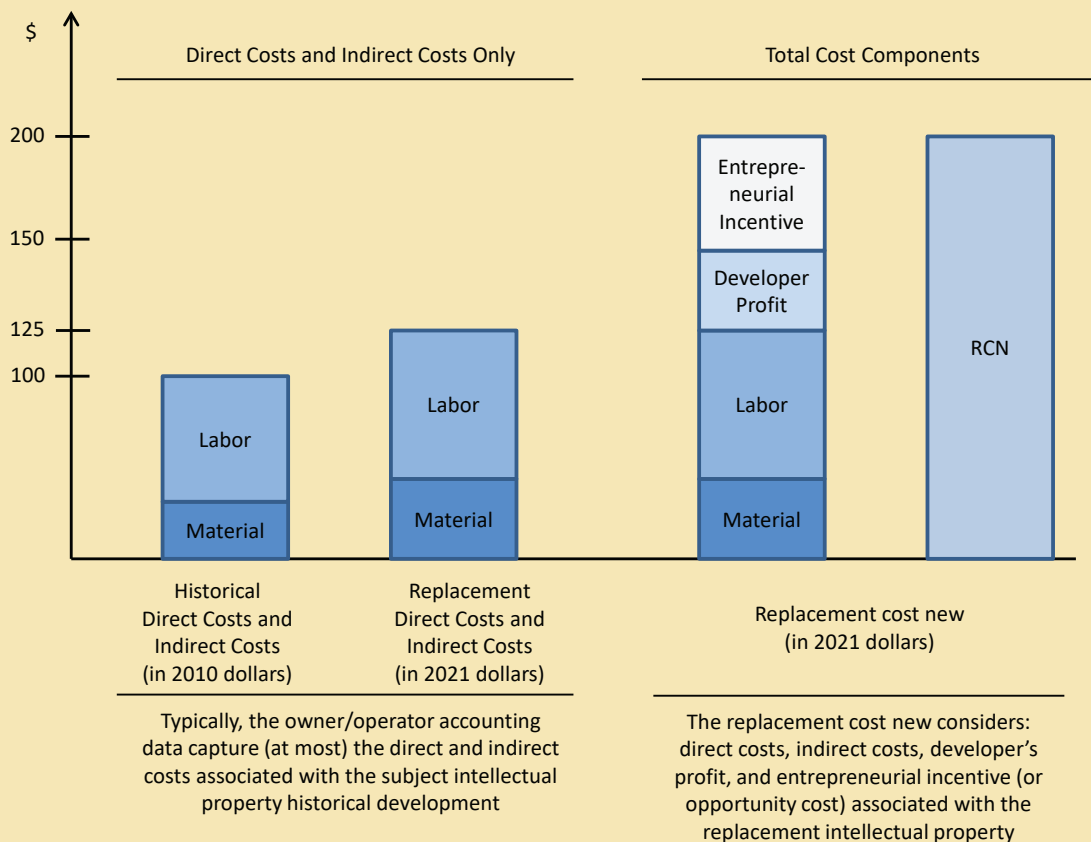
1. the intellectual property's expected useful economic life ("UEL") and
2. the intellectual property's actual ROI.

Figure 1 illustrates the consideration of direct costs and indirect costs (such as material and direct labor) and of developer's profit and entrepreneurial income in the cost approach valuation of an illustrative intellectual property. Figure 1 also considers the comparison of historical costs to current (as in, valuation date) replacement cost new ("RCN").

As presented in Figure 1, total historical direct costs and indirect costs are \$100 when the illustrative intellectual property was originally developed in 2010. The total of the current direct and indirect replacement costs is \$125, as of a 2021 valuation date.

Figure 1 also illustrates how the owner/operator typically does not consider developer's profit or entrepreneurial incentive cost components, even

Figure 1
Comparison of Historical Cost to RCN
In the Intellectual Property Development Process



though the owner/operator did keep track of the historical (2010) direct material and labor development costs.

The 2021 developer’s profit and entrepreneurial incentive cost components (estimated at \$75) are then added to the 2021 direct cost and indirect cost components (estimated at \$125).

The sum of all these cost components (\$200) is the year 2021 RCN for the intellectual property.

The analyst should note that the cost components represented in Figure 1 are typically considered as capitalizable costs (i.e., capital expenditures), and not as period costs (i.e., expenses).

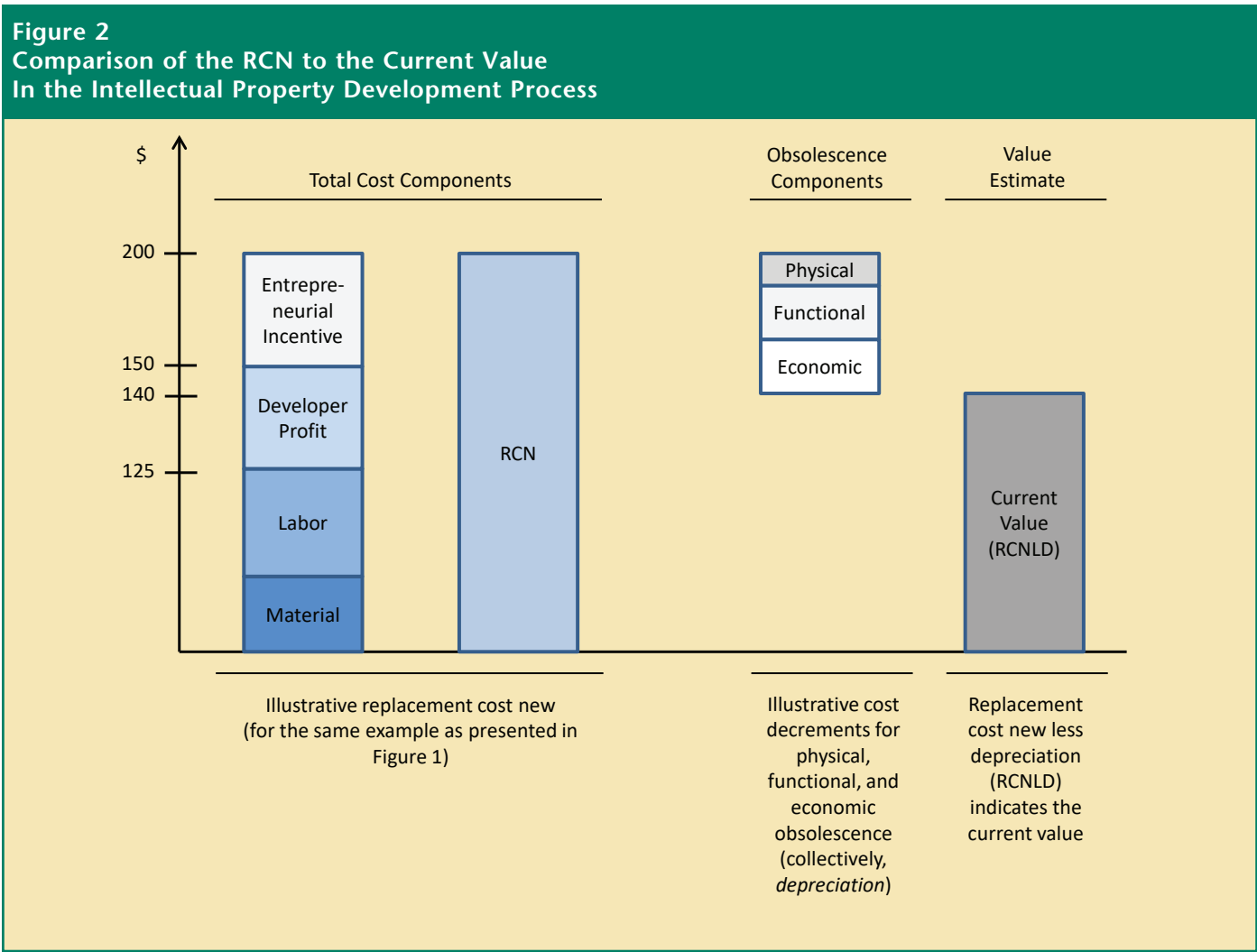
As discussed further in the “Errors and Misconceptions in the Application of the Cost Approach” section of this discussion, the costs considered in the application of the cost approach should not be considered either pre- or post-tax expenses. Rather, the costs considered in the application of the cost approach should be considered as capitalizable expenditures.

There is no “tax-affecting” that should be applied to the development of the cost metrics that are considered in the intellectual property cost approach valuation analysis.

Figure 2 illustrates the relationships between RCN and replacement cost new less depreciation (“RCNLD”). Figure 2 presents the intellectual property RCN as \$200, which is the same RCN estimate concluded in Figure 1.

To estimate the intellectual property current value (or RCNLD), total appraisal depreciation is subtracted from the RCN. The three appraisal depreciation components include physical deterioration (typically a de minimis consideration for an intellectual property), functional obsolescence, and economic obsolescence.

In Figure 2, the sum of these three appraisal depreciation components is \$60. In this simplified illustrative example, the intellectual property RCNLD is calculated as follows:



Cost Approach—RCNLD Method Analysis

\$200	RCN
– 60	less total depreciation
<u>\$140</u>	RCNLD

Figure 2 presents the current value (or RCNLD) of the hypothetical intellectual property to be \$140. The RCNLD (not the RCN) of the hypothetical intellectual property provides the cost approach value indication.

One typical cost approach formula for quantifying intellectual property RCN is as follows: $RPCN - \text{incurable functional obsolescence} = RCN$.

To estimate the intellectual property current value, the following cost approach formula is often applied: $RCN - \text{physical deterioration} - \text{economic obsolescence} - \text{curable functional obsolescence} = \text{value}$.

Obsolescence is considered to be curable if the cost to cure the intellectual property deficiency (such as the cost to rewrite the obsolete copyrighted software) is less than the cost of operating the deficient intellectual property (as in the cost of running multiple copyrighted software programs that do not share a common database).

Obsolescence is considered to be incurable if the cost of curing the intellectual property deficiency is more than the cost of operating the deficient intellectual property.

USEFUL ECONOMIC LIFE CONSIDERATIONS

After the analyst has selected the appropriate intellectual property valuation approaches and methods, the next procedure is to consider the intellectual property's expected UEL. The estimation of the intellectual property UEL (often called a *lifying analysis*) is one important consideration in any generally accepted intellectual property valuation approach.

A property's UEL is the total period of time over which the property is expected to generate economic benefits. In estimating an intellectual property's useful economic life, analysts typically consider the financial projections of the owner/operator entity (or the actual intellectual property), its industry, the economy or economies of the geographic regions in which the owner/operator entity operates, and other market participants or competitors.

In the application of the income approach, a *lifying analysis* may be performed to estimate the pro-

jection period for the intellectual property income subject to either yield capitalization or direct capitalization.

In the application of the cost approach, a *lifying analysis* may be performed to estimate the total amount of obsolescence, if any, from the estimated cost measurement metric—that is, the intellectual property RPCN, RCN, or other cost metric.

In the application of the market approach, a *lifying analysis* may be performed to select, reject, and/or adjust comparable or guideline intellectual property sale or inbound/outbound license transactional data.

For each intellectual property valuation approach, the UEL analysis could affect value. The likely expected effect of UEL on the intellectual property value is summarized below.

Normally, in the application of the income approach, a longer expected UEL estimate results in a greater intellectual property value. The intellectual property value is particularly sensitive to the UEL estimate when the UEL is less than 10 years but not when the UEL is more than 20 years.

Normally, in the application of the cost approach, a longer expected UEL estimate results in a greater intellectual property value. This result is because a longer UEL generally indicates less obsolescence in the intellectual property. Normally, a shorter UEL estimate results in a greater obsolescence allowance consideration in the intellectual property value.

The market should indicate an acceptance for the intellectual property's UEL. If the actual intellectual property UEL is materially different from the guideline sale or license transaction data UEL, then adjustments to market-derived transactional pricing multiples (or other pricing metrics) should be considered.

If the actual intellectual property UEL is more than materially different from the guideline sale or license transaction intellectual property UELs, this fact may indicate a lack market demand for an intellectual property with that property's age/life characteristics.

Some of the factors that the analyst may consider in the intellectual property expected UEL analysis follow:

- Legal factors
- Regulatory factors
- Contractual factors
- Functional factors
- Technological factors
- Economic factors
- Analytical factors

The analyst typically considers each of the above-listed categories of factors that influence the intellectual property's UEL estimation. Typically, the factor that indicates the shortest UEL deserves primary consideration in the intellectual property UEL estimate.

PHYSICAL DEPRECIATION MEASUREMENT PROCEDURES

There is no one individual formula or equation to quantify intellectual property physical depreciation (or deterioration). If possible, the analyst should physically inspect the intellectual property for any manifestation of physical deterioration.

One procedure related to quantifying intellectual property physical deterioration is to estimate the cost to cure the deterioration (if it is, in fact, curable).

Ultimately, an intellectual property is typically not subject to wear and tear—like tangible property is. However, an intellectual property can be “used up” over time. That is, the intellectual property UEL may become shorter over time. This decrease in UEL can decrease the intellectual property value.

For example, an intellectual property that is contract-related or otherwise has a legal UEL typically decreases in value as that UEL expires. Intellectual property licenses, permits, contractual rights, agreements, and franchises typically have legally determined finite lives. As that contract (or legal) life expires, the value of that intellectual property typically decreases.

Let's assume that the cost to obtain a Food and Drug Administration (“FDA”) license for a new drug product is \$10 million. That cost would include all drug development and laboratory work, all clinical tests, all application and documentation fees to the FDA, and a lost income/opportunity cost component during the drug development period.

Let's further assume that the FDA license period for the new drug is 10 years. On the date that the FDA license is granted, the license's value probably equals the RCN of \$10 million. Nine years later (with only one year remaining in the FDA license term), the license value will likely have decreased.

Even ignoring the effect of any economic obsolescence, the willing buyer will probably assume that it will soon need to incur new drug development costs in order to obtain a new FDA license for an improved drug product.

The analyst should decide whether the license value decrease is linear over the 10-year life. However, the license value typically decreases as the UEL decreases. The illustrative FDA license value at the end of year nine will typically be its RCNLD estimate, not its RCN estimate.

Some analysts may question whether this value decrease should be called technological obsolescence instead of physical deterioration. Regardless of the terminology used, the analyst should recognize the decrease in the value of contract-related or regulatory-related intellectual property as the UEL of each such property decreases.

The analyst should realize that some types of intangible property may actually experience physical deterioration. All intangible property have some physical manifestation.

Even institutional goodwill may be manifested by the owner/operator entity's financial statements (historical or prospective), articles of incorporation, books and records, and so on. Personal goodwill may be manifested by an individual's personal income tax returns, compensation statements, employment or other contracts, client lists, and so on.

The physical manifestation of some intangible property may experience wear and tear. For example, in an assembled workforce example, some employees may become old (and be ready to retire) or become injured (and be on disability leave). Laboratory notebooks and other technical documentation may become tattered over time. Non-CAD engineering drawings and designs or nonelectronic patient charts and records may show wear and tear over time.

The analyst should consider the occurrence of physical deterioration during the general intangible property cost approach valuation process. And, the analyst should at least consider the concept of physical deterioration with regard to an intellectual property cost approach valuation. The assembled workforce intangible property example in the following discussion illustrates the analyst's consideration of physical deterioration.

FUNCTIONAL OBSOLESCENCE MEASUREMENT PROCEDURES

For all property, both tangible and intangible, functional obsolescence is usually related to inefficiencies associated with the operation of the property. These inefficiencies typically involve either inadequacies or superadequacies.

An inadequacy occurs when there is not enough of the property (as in, the property is too small) for

it to operate efficiently. A superadequacy occurs when there is too much of a property (as in, the property is too large) for it to operate efficiently.

Regarding intellectual property functional obsolescence, the two factors that the analyst typically considers are as follows:

1. Excess capital costs
2. Excess operating costs

The consideration of excess capital costs compares the current cost to develop a reproduction intellectual property with the historical cost to develop the actual intellectual property.

In other words, if it would cost less to develop the replacement intellectual property today than it cost when the actual property was created, then that difference is one measure of functional obsolescence.

The consideration of excess operating costs compares the current cost of maintaining or using the intellectual property to the historical cost of maintaining or using the property when it was first developed or put into service. The present value of any relative excess operating costs over the intellectual property's UEL is another measure of functional obsolescence.

A trained and assembled workforce is an example of a general intangible property that can experience functional obsolescence. When the workforce is too small to serve the owner/operator entity, then the entity may operate inefficiently, with its work inadequately performed or performed behind schedule.

To complete the work, the owner/operator may have to incur overtime compensation expenses. In one way or another, the workflow will be inefficient. Either customer demand will not be met or the owner/operator entity will incur excess operating costs (compared to the costs associated with an optimal workforce).

Additionally, when the workforce is too large, the owner/operator entity may operate inefficiently, with employees having too little to do or performing the available work slowly in order to appear busy.

The owner/operator entity will incur excess overhead costs (e.g., rent, heat, electricity, etc.) to house the excess employees along with excess costs related to wages, payroll taxes, employee insurance benefits, other employee benefits, and so on.

In addition to being the wrong size, an assembled workforce can experience functional obsolescence by having an inappropriate mix of employees. If the workforce includes employees with inadequate

skills or insufficient experience, for example, then the work may be inadequately or inefficiently performed or both. This in turn could negatively affect the owner/operator business, giving rise to problems like poor quality control, a high return rate, customer loss, and reputational damage.

If the assembled workforce includes employees who are more highly skilled or experienced than is necessary to get the job done, then the owner/operator could incur higher compensation expense to pay those skilled employees.

At the same time, the overqualified employees may become bored and frustrated with the less demanding work. The owner/operator entity is then likely to experience a higher level of employee turnover than it would if it operated with more appropriately qualified employees.

Analysts often consider two methods for quantifying intellectual property functional obsolescence:

1. The excess capital cost method
2. The excess operating cost method

Although it is called the excess capital cost method, this method can be applied to measure obsolescence related to either an inadequacy or a superadequacy. This method is, however, more frequently applied to measure intellectual property superadequacy.

Let's assume that the analyst is asked to value an internal medicine professional practice called the Beta Group ("Beta"). The valuation date is December 31, 2020. A local not-for-profit hospital, Gamma Hospital ("Gamma"), intends to approach the physician owners of Beta with an unsolicited offer to buy the medical practice's assets.

Accordingly, the Gamma board of directors has retained the analyst to estimate a fair market value purchase price offer for the Beta assets.

Beta employs 10 physicians, 20 clinical staff members (registered nurses, medical technicians, and so forth), and 10 administrative employees (billing clerks, receptionists, and so forth). In valuing the Beta medical practice, the analyst should estimate the fair market value of Beta's assembled workforce.

In developing the assembled workforce fair market value valuation, the analyst decides to apply the cost approach and the RCNLD valuation method.

An assembled workforce is often considered a contributory intangible property, which the MPF defines as "any tangible or intangible [asset] used in the generation of the cash flows associated with the subject intangible asset that is being valued."

When applied to intellectual property and other intangible property, income approach valuation methods typically include consideration of any contributory asset charge. The contributory asset charge, for example, charges against revenue in a cash flow projection that reflect a return on (or of) contributory assets used in the generation of the cash flow from the intellectual property.

However, because the cost approach does not involve a projection of income or cash flow, it is typically unnecessary to consider contributory asset charges if the intellectual property is valued through application of the cost approach. Still, contributory assets—such as an assembled workforce—are often valued for other purposes and often for inclusion in a broader valuation engagement (such as the Beta professional practice valuation).

For example, a contributory asset may be valued in order to estimate a contributory asset charge for application to another intangible property valued by the application of an income approach valuation method.

Exhibit 1 presents a simplified illustration of the analyst's RCNLD method valuation of the Beta assembled workforce intangible property. The objective of the illustrative valuation is to estimate the fair market value of all of the Beta practice assets. This valuation will enable the Gamma board of directors to make an informed fair-market-value-based practice purchase offer.

The purpose of the illustrative valuation is to assist the Gamma board (and its legal counsel) in structuring the transaction so that Gamma does not pay more than fair market value for the total Beta practice assets.

Because it is a not-for-profit hospital, the Gamma board of directors is appropriately concerned that the purchase price should not result in either private inurement or excess benefits with regard to the physician/sellers.

The appropriate standard of value in this example is fair market value, as defined in the Treasury regulations. This pre-acquisition valuation is performed for regulatory compliance purposes, to ensure that the medical practice acquisition complies with Internal Revenue Service administrative guidelines and with statutory guidelines for not-for-profit entities.



Let's assume that there is no fair value measurement ("FVM") or other financial accounting considerations in this illustrative example.

If the practice acquisition transaction is consummated, Gamma will not report the Beta assembled workforce on its GAAP-basis financial statements. Gamma will, however, record the purchased assembled workforce as a Section 197 amortizable intangible asset on its income tax basis balance sheet.

For the above-described reasons, this illustrative example does not consider the actions of market participants (that is a FVM financial accounting concept). Instead, this example considers the actions of a hypothetical willing buyer and a hypothetical willing seller (that is a fair market value taxation concept).

Likewise, this illustrative example does not consider the investment value (such as the individual staffing needs) of the Beta practice workforce to the Gamma hospital.

As indicated in Exhibit 1, the analyst estimated the RCN for the 50-person Beta workforce to be \$3,652,000. Of course, this RCN measurement itself does not indicate the value of the Beta assembled workforce.

The RCN metric indicates the cost for the owner/operator to replace all the current 50 employees with new employees of comparable experience and expertise.

The RCN estimate considers the total amount of compensation paid to each practice employee, labeled as "average salary" in Exhibit 1. In an RCN analysis, these costs are typically called direct costs.

Exhibit 1
The Beta Group
Trained and Assembled Workforce Intangible Property
Cost Approach—RCNLD Method Valuation
RCN Estimate
As of December 31, 2020

Beta Assembled Workforce Employee Component	No. of Employees	Average Salary	Other Costs Factor	Full Absorption Cost	Percent of the Total Annual (Full Absorption) Cost Required to			Percent of Full Absorption Cost to Replace Employees	Average RCN Component	Total RCN Component
					Recruit Replacement Employees	Hire Replacement Employees	Train Replacement Employees			
Physicians	10	180,000	1.6	288,000	20%	20%	40%	80%	230,400	\$2,304,000
Clinical Staff	20	60,000	1.5	90,000	10%	10%	30%	50%	45,000	900,000
Administrative Staff	20	40,000	1.4	56,000	5%	10%	25%	40%	22,400	<u>448,000</u>
Total Employees	50									
Total Direct Cost and Indirect Cost Components										3,652,000
Add:										
Developer's Profit Cost Component:										
Developer's Profit Margin										<u>10%</u>
Developer's Profit Cost Component (rounded)										<u>365,000</u>
Total Direct Cost and Indirect Cost plus Developer's Profit										4,017,000
Add:										
Entrepreneurial Incentive Cost Component:										
Estimated Total Workforce Replacement Period					6 months					
Estimated Average Workforce Replacement Cost Investment (i.e., \$4,017,000 total cost ÷ 2)					\$2,009,000					
Required Annual Return on Investment (ROI)					16%					
Required ROI for 6-Month Replacement Period					8%					
Entrepreneurial Incentive Cost Component (i.e., \$2,009,000 × 8%) (rounded)					\$161,000					<u>161,000</u>
Total Replacement Cost New										<u>\$4,178,000</u>

The RCN estimate considers all other expenses that the owner/operator entity would incur related to each employee. Those costs are typically called indirect costs. These indirect costs can include the following employer-paid expenses:

- Payroll taxes
- Employee benefits
- Continuing professional education
- Annual license and credential fees
- Uniforms and lab coats
- Employee parties, gifts, etc.

Hence, the total annual cost that the owner/operator entity pays for an employee is called the full absorption cost in Exhibit 1. This full absorption cost metric includes the following:

- The compensation paid by the employer to the employee
- The expenses paid by the employer to others so that the employee can perform his or her job

The RCN estimate includes all costs that the employer would incur to replace the current Beta practice workforce with a new (but comparable) workforce. These RCN costs may include the following:

- Advertising for recruiting potential new employees to apply for each position
- Interviewing expenses, background checks and other pre-employment tests, and placement fees incurred to have the new employee show up on day one
- On-the-job training in the particular position, including first-month training, first-year training, and accumulated continuing education for long-term employees

In Exhibit 1, the analyst expressed the RCN components as a percentage of the employee full absorption cost. Alternatively, the analyst could calculate the RCN components as dollars per employee, dollars per year of employee tenure, or some other dollar or percentage metric.



The \$3,652,000 figure represents the direct cost and indirect cost components related to the Beta practice assembled workforce. There are two additional cost components for the analyst to consider:

1. Developer's profit
2. Entrepreneurial incentive

For the purpose of this illustrative example, the developer's profit considers the profit margin that a management consulting, human resources outsourcing, or professional staffing firm would earn if a willing buyer retained such a firm to create the assembled workforce.

Such a professional staffing or consulting firm would incur \$3,652,000 in out-of-pocket costs. That firm would expect the Beta workforce's willing buyer (as in, Gamma) to reimburse them for such out-of-pocket costs. In addition, the staffing firm would naturally expect to earn a profit.

Likewise, the Beta practice owners would obviously expect to earn a profit on the sale of their internally developed intangible property to the willing buyer.

For this example, let's assume that the analyst surveyed professional firms in the business of assembling a fully trained workforce for corporate or institutional employers. Examples of public companies in this industry include Inspireity, Inc.; GP Strategies Corp.; ManpowerGroup Inc.; and Cross Country Healthcare, Inc. Let's further assume the valuation analyst's survey indicated that such firms would expect to earn a 10 percent operating

profit margin on this type of staffing development assignment.

In Exhibit 1, the developer's profit cost component is calculated multiplying the \$3,652,000 total direct costs and indirect costs by the 10 percent developer's profit margin.

The analyst also considers entrepreneurial incentive in the RCN analysis. This cost component is what motivates the owner/operator entity to develop the actual intangible property instead of pursuing some other investment opportunity.

There are several alternative procedures for estimating entrepreneurial incentive. One procedure is to estimate the lost profits opportunity cost that the owner/operator entity would experience during the intangible property replacement period. When applying this procedure, the analyst should be careful to appropriately allocate the owner/operator's overall profit to all of the entity's intangible property.

For example, let's assume (1) that the Beta practice has five intangible property assets, each of which would require one year, on average, to recreate; and (2) that the Beta practice earns \$1 million in operating profits annually (typically measured as earnings before interest and taxes).

The analyst should be careful not to assign \$1 million as an entrepreneurial incentive opportunity cost to each of the five intangible property assets. Whether the Beta practice must replace one intangible property or all five, it would still suffer the same \$1 million opportunity cost from its inability to operate during the one-year replacement period.

In assigning the \$1 million opportunity cost to each of the five intangible property assets, the analyst would be overstating their value. Accordingly, the analyst should carefully allocate (or split) the total development period opportunity cost among all owner/operator's intangible property.

Another entrepreneurial profit measurement procedure is to calculate a fair rate of return on the total intangible property cost components (direct costs, indirect costs, and developer's profit). The principle behind this procedure is that the owner/operator would not develop the replacement intangible property were there no expectation of earning a fair rate of return on its total development investment.

Let's assume that the analyst applied this second entrepreneurial incentive measurement procedure to the assembled workforce valuation. Further, let's assume that the total elapsed workforce recreation period will be six months.

According to Exhibit 1, the average investment during the six-month period will be \$2,009,000. The analyst calculates a fair ROI for the Beta practice to be 16 percent. This ROI is often measured as the owner/operator entity's weighted average cost of capital ("WACC").

In Exhibit 1, the \$2,009,000 total investment is multiplied by the required annual rate of return of 16 percent and adjusted for the six-month development period.

Exhibit 1 indicates that the total entrepreneurial incentive is estimated at \$161,000. This amount represents the fourth RCN cost component. The total assembled workforce RCN is the sum of all four cost components: \$4,178,000.

Finally, in Exhibit 1, the analyst estimates the cost to replace the 50 current employees with 50 new employees of comparable experience and expertise. Because the RCN estimate includes a job training component, these 50 new employees (1) would know how to do their jobs and (2) could work together efficiently on the hypothetical replacement date.

Exhibit 1 summarizes the Beta practice assembled workforce RCN. To reach a value conclusion, the analyst should next estimate the RCNLD of the practice workforce. As in any cost approach analysis, the analyst should determine whether there is any deterioration or obsolescence related to this intangible property.

The reason for this valuation of the Beta practice total property is that Gamma will make an offer to buy the practice total assets. Because of income-tax-related private inurement and excess benefit considerations, Gamma cannot pay more than a fair market value price for the Beta practice total assets.

In performing due diligence on the possible acquisition, the analyst learns the following facts about the Beta practice assembled workforce:

- Two lab technicians (part of the practice's clinical staff) are scheduled to retire in the next year or so.
- One billing accountant (part of the administrative staff) is on disability leave and unlikely to return to work.
- The Beta practice is overstaffed with administrative personnel; in addition to the billing accountant on disability, any typical willing buyer would eliminate two administrative positions.
- The Beta practice's clinical staff has experienced very low turnover. Because of their long tenure, these nurses and technicians earn an average annual salary of \$60,000

(see Exhibit 1). If these actual clinical employees were replaced, they could be replaced with adequately qualified (but less tenured) employees earning an average annual salary of \$50,000.

The analyst now has all information necessary to calculate the appropriate physical deterioration and functional obsolescence allowances for the Beta practice assembled workforce.

In Exhibit 2, the analyst estimates the amount of physical deterioration and takes into consideration the coming retirement of two clinical staff employees. The value of an assembled workforce lies in the owner/operator's expectation that the employees will show up for work fully trained and able to do their jobs effectively and efficiently.

If a willing buyer will soon have to incur the cost to recruit, hire, and train employees to replace those who are retiring, then that buyer will not pay the seller for the value of those retiring employees. Exhibit 2 also considers that one administrative employee is on disability leave.

These two replacement cost adjustments relate to (1) age (with consideration of impending employee retirement) and (2) inability to work (with consideration of employee disability). Therefore, these two cost adjustments are appropriately classified as physical deterioration.

The developer's profit and entrepreneurial incentive cost components in Exhibit 2 are based on these same cost component relationships to total direct costs and indirect costs as in Exhibit 1.

Exhibit 3 presents the analyst's estimate of the Beta practice workforce functional obsolescence. This estimate considers that the Beta workforce has a superadequacy of two administrative employees.

The estimate also considers that the Beta practice workforce has a superadequacy of experience among clinical staff members, causing the average replacement salary for a clinical employee to be \$10,000 greater than the desired replacement salary. This excess causes the average annual full absorption cost to be \$15,000 greater than desired.

As a result, the excess full absorption cost causes the average RCN (direct cost and indirect cost component) per clinical employee to be \$7,500 greater than the desired replacement cost per employee.

Both excess capital costs (those related to excess number and quality of intangible property) relate to superadequacies. Therefore, these two cost adjustments are appropriately classified as functional obsolescence.

The developer's profit and entrepreneurial incentive cost components in Exhibit 3 bear the same relationship to total direct costs and indirect costs as presented in Exhibit 1.

Exhibit 4 summarizes the RCNLD method analysis for the Beta practice assembled workforce. This analysis concludes the value of (1) the appropriately sized workforce and (2) the appropriately experienced workforce. These depreciation and obsolescence adjustments are appropriate because a willing buyer would not pay the willing seller for:

- the value of employees who are neither needed nor working or
- the value of employees who are both over-compensated and overqualified to perform their jobs.

This RCNLD conclusion indicates what a willing buyer would pay to a willing seller for this Beta practice assembled workforce, under the assumption

Exhibit 2
The Beta Group
Trained and Assembled Workforce Intangible Property
RCNLD Method
Physical Deterioration
As of December 31, 2020

Beta Assembled Workforce Component	No. of Employees	Average Direct and Indirect RCN	Total Direct and Indirect RCN	Developer's Profit and Entrepreneurial Incentive Cost Components	Total RCN	Percent Depreciation	Accumulated Depreciation
Clinical Staff	2	\$45,000	\$90,000	\$13,000	\$103,000	100%	\$103,000
Administrative Staff	1	22,400	22,400	<u>3,200</u>	<u>25,600</u>	100%	<u>25,600</u>
Total				16,200	128,600		<u>\$128,600</u>

Exhibit 3
The Beta Group
Trained and Assembled Workforce Intangible Property
RCNLD Method
Functional Obsolescence
As of December 31, 2020

Workforce Component	No. of Employees	Excess Direct and Indirect RCN	Excess Developer's Profit and Entrepreneurial Incentive Components	Excess Total Replacement per Employee	Functional Obsolescence
Clinical Staff	18	\$7,500	\$1,100	\$8,600	\$154,800
Administrative Staff	2	22,400	3,200	25,600	<u>51,200</u>
Total					<u>\$206,000</u>

that there is no economic obsolescence related to this intangible property. Economic obsolescence is discussed later.

Exhibit 3 illustrates the excess capital cost method of measuring functional obsolescence. This method considers circumstances where a superadequacy exists in the Beta practice assembled workforce, such as the following:

- Excess employees
- Overpaid employees
- Overqualified employees

The analyst also can apply the excess capital cost method to quantify excess costs related to superadequate engineering drawings, computer software, laboratory notebooks, training manuals, technical documentation, and many other “backroom”-type intellectual property trade secrets.

In addition, the analyst can apply the excess capital cost method to measure functional obsolescence related to an intangible property's inadequacy.

In such situations, the functional obsolescence analysis considers deferred costs or capital costs that will be incurred, such as the following:

- Costs to add needed employees
- Costs to pay undercompensated employees more
- Costs to add adequately experienced employees

In instances related to the inadequacy of intangible property, the capital cost represents the cost to cure any functional obsolescence. Typically, these costs represent obsolescence allowances. This is because a willing buyer will reduce the price it is willing to pay to a willing seller for an assembled

Exhibit 4
The Beta Group
Trained and Assembled Workforce Intangible Property
Cost Approach
RCNLD Estimate
As of December 31, 2020

Cost Approach Analysis	Cost Component
RCN (all employees)	\$4,178,000
Less: Physical Deterioration Allowance (inadequate staff)	128,600
Less: Functional Obsolescence Allowance (superadequate staff)	<u>206,000</u>
Equals: RCNLD	<u>\$3,843,400</u>

workforce when the buyer will incur immediate costs to improve the quality of the acquired workforce.

Another method for measuring functional obsolescence is the excess operating cost method. In this method, the analyst estimates the annual expense associated with operating the deficient (whether inadequate or superadequate) intangible property. The analyst also estimates the period (usually, the intangible property expected UEL) during which excess operating costs are expected to be incurred.

Finally, the analyst calculates the present value of excess operating costs over the expected UEL. This present value represents the amount of functional obsolescence related to the intangible property-specific deficiency.

To illustrate this functional obsolescence measurement method, let's assume that the Delta Marketing Company ("Delta") operates a particular software system for billing and receivables. This software was written in COBOL, a third-generation programming language. Delta's other client records software and administrative systems software are written in Java or C++ (or other fourth- and fifth-generation programming languages).

Delta management plans to replace the actual software system for billing and receivables with a new customized software system. However, for the next five years the IT department will not have the resources to complete the new software development project.

In the meantime, Delta employs a COBOL programmer to maintain the current billing system. When a new billing system is installed, this COBOL

programmer position will be eliminated. The full absorption cost of the COBOL programmer is \$100,000 per year.

Let's assume that an analyst is retained to estimate the fair market value of the copyrights and trade secrets intellectual property related to the billing and receivables system as of December 31, 2020. The analyst decides to apply the cost approach and the RCNLD method to value this intellectual property.

The RCN for the current billing system is \$1.2 million. The RCN for the new customized billing system will be much greater than \$1.2 million. To simplify this example, let's assume that there is no physical depreciation or economic obsolescence related to the current computer software.

Applying the capitalized excess operating cost method to measure functional obsolescence, the analyst estimated the value of the current COBOL software intellectual property as summarized in Exhibit 5.

In Exhibit 5, the 2.99 present value annuity factor is based on a five-year UEL for the actual software and an assumed 20 percent (pretax) present value discount rate.

Theoretically, the analyst—if applying consistent valuation variables—should reach the same value conclusion for the same intellectual property no matter which functional obsolescence measurement method he or she applies. The intellectual property RCNLD should be the same whether the analyst applies the excess capital cost method or the excess operating cost method to measure functional obsolescence.

Exhibit 5
Delta Marketing Company
Computer Software Billing and Receivables System
Copyrights and Trade Secrets
Cost Approach—RCNLD Method
As of December 31, 2020

Cost Approach Component		\$
Current Computer Software RCN		1,200,000
Less: Functional Obsolescence:	\$	
Annual Excess Operating Cost	100,000	
Multiplied by: Present Value Annuity Factor	<u>2.99</u>	
Equals: Capitalized Excess Operating Costs	299,000	<u>299,000</u>
Equals: RCNLD		<u>901,000</u>
Fair Market Value of Billing and Receivables System Software (rounded)		<u>900,000</u>

In each of the above simplified examples, it is noteworthy that the cost approach value indications are presented before consideration of economic obsolescence. The analysis of economic obsolescence is integral to any cost approach valuation analysis. No cost approach valuation analysis is complete until the analyst considers the existence of economic obsolescence.

The next section considers the identification and measurement of economic obsolescence.

ECONOMIC OBSOLESCENCE MEASUREMENT PROCEDURES

The analysis of economic obsolescence is typically the last procedure in any intellectual property cost approach valuation analysis. This statement is generally also true for all intangible property and tangible property valuations.

The objective of the economic obsolescence analysis is to determine whether the owner/operator entity can earn a fair rate of return on the intellectual property cost approach value indication.

If the owner/operator entity can earn a fair rate of return, then the cost approach value indication (before an economic obsolescence allowance) provides the intellectual property value indication. If the owner/operator entity cannot earn a fair rate of return, then the cost approach value indication should be reduced by the amount of the economic obsolescence allowance.

The cost approach value indication should be reduced to the level at which the owner/operator can earn a fair rate of return. The cost approach value indication adjusted for economic obsolescence results in the cost approach final value indication.

It is usually fairly easy for the analyst to identify physical deterioration (if any) in the intangible property. It also is fairly easy for the analyst to identify functional obsolescence (if any) in the intangible property. This is because these forms of depreciation are inherent in the intangible property.

Economic obsolescence is more difficult to identify than physical deterioration or functional obsolescence. Typically, the causes of economic obsolescence are external to the intangible property.

The analysis of intangible property economic obsolescence is usually a two-step process:

1. Identify the existence of economic obsolescence.
2. Quantify the amount of economic obsolescence.

Procedures to Identify the Existence of Economic Obsolescence

It is appropriate for the analyst to consider economic obsolescence in every intellectual property cost approach valuation analysis. A number of conditions can indicate the existence of economic obsolescence. Exhibit 6 lists some of these conditions that may indicate the existence of economic obsolescence with regard to an intellectual property.

While none of the conditions in Exhibit 6 specifically measures the amount of economic obsolescence, the existence of one or more of these conditions may indicate the existence of economic obsolescence. To measure economic obsolescence, the analyst typically considers either (or both) of the following:

1. Owner/operator-specific factors
2. Industry factors

PROCEDURES TO MEASURE ECONOMIC OBSOLESCENCE

Most analyses that quantify economic obsolescence are performed on a comparative basis. The comparative basis can be:

1. the owner/operator entity's actual operating results with the economic obsolescence effect in place compared to
2. the owner/operator entity's hypothetical (e.g., historical or projected) operating results without the economic obsolescence effect in place.

Alternatively, the comparative basis can be:

1. the owner/operator entity's actual operating results with the economic obsolescence effect in place compared to
2. one (or more) comparable entity's operating results without the economic obsolescence effect in place.

Given the comparative nature of economic obsolescence analyses, a noncomparative analysis is unlikely to be adequate for measuring economic obsolescence.

To quantify many types of economic obsolescence, the analyst may need to review the owner/operator entity's financial documents or operational reports. Such intellectual property owner/operator documents can include the following:

- Financial statements or financial results of operations

Exhibit 6

Intellectual Property Owner/Operator Entity Conditions That Can Indicate the Existence of Economic Obsolescence Related to Intellectual Property

1. The owner/operator entity's income approach value indication is less than the entity's asset-based business valuation approach value indication.
2. The owner/operator entity's market approach value indication is less than the entity's asset-based approach business valuation value indication.
3. The owner/operator's revenue has been decreasing in recent years.
4. The owner/operator's profitability has been decreasing in recent years.
5. The owner/operator's cash flow has been decreasing in recent years.
6. The owner/operator's product pricing has been decreasing in recent years.
7. The industry/profession's revenue has been decreasing in recent years.
8. The industry/profession's profitability has been decreasing in recent years.
9. The industry/profession's cash flow has been decreasing in recent years.
10. The industry/profession's product pricing has been decreasing in recent years.
11. The owner/operator's profit margins have been decreasing in recent years.
12. The owner/operator's ROIs have been decreasing in recent years.
13. The industry/profession's profit margins have been decreasing in recent years.
14. The industry/profession's ROIs have been decreasing in recent years.
15. The industry/profession's competition has been increasing in recent years.
16. The industry/profession has experienced regulatory changes in recent years.

- Financial budgets, plans, projections, or forecasts
- Production statements, production cost analyses, or operating cost variance analyses
- Material, labor, and overhead cost of goods sold (or cost of services delivered) analyses
- Fixed expense versus variable expense operating statements
- Unit or total entity cost/volume/profit analyses
- Unit/dollar sales analyses or average selling price analyses

The analyst should consider the intellectual property owner/operator entity data and documents in the preceding list on a comparative basis, such as the following:

- Actual results versus historical results
- Actual results versus budgeted results
- Actual results versus specific comparative entity results
- Actual results versus specific competitor results

- Actual results versus industry/profession average or benchmark results
- Actual results versus the owner/operator's practical or normal production capacity

To identify the causes of the economic obsolescence, the analyst is most likely to analyze owner/operator entity's financial data. Regarding intellectual property specifically, the analyst often analyzes the following financial and operational data:

- Business enterprise profit margins
- Business enterprise ROIs
- Industrial/commercial product unit average selling price
- Industrial/commercial product unit cost of goods sold
- Industrial/commercial product unit sales volume

The analyst seeks to identify any external factors that could cause the owner/operator entity to earn less than a fair rate of return on the intellectual property cost approach value indication.

Economic Obsolescence Illustrative Example

Let's continue with our Beta practice assembled workforce example. For that Beta practice workforce, the analyst concluded an RCNLD value indication that considered functional obsolescence. To reach a final cost approach value conclusion, the analyst should also consider economic obsolescence.

To measure economic obsolescence, the analyst accumulates the comparative financial and operational data summarized in Exhibit 7. Exhibit 7 presents a type of economic obsolescence measurement analysis that is typically called the capitalization of income loss method ("CILM").

Based on the Exhibit 7 CILM analysis, the analyst concluded that Beta practice is experiencing economic obsolescence of about 20 percent.

Barring any specific economic obsolescence calculation related to an individual intangible property, the analyst should apply the 20 percent economic obsolescence to all Beta intangible property valued by the application of the cost approach.

Exhibit 8 summarizes the calculation of the allowance for economic obsolescence for the Beta practice assembled workforce intangible property.

CONCLUDING THE COST APPROACH VALUE INDICATION

By this point, the analyst has performed all the following intellectual property valuation procedures:

1. Concluded that the application of the cost approach is appropriate for the intellectual property
2. Confirmed that adequate current cost information is available to perform a cost approach analysis
3. Selected the appropriate cost measurement measure or metric for the intellectual property current cost
4. Included all appropriate cost components in the current cost measurement
5. Identified and quantified any necessary allowance for physical deterioration
6. Identified and quantified any necessary allowance for functional obsolescence
7. Identified and quantified any necessary allowance for economic obsolescence

To conclude a cost approach value indication, the only remaining procedure is to subtract all appraisal depreciation and obsolescence allowances

from the current cost measure. Continuing with the Beta practice illustrative example, this final procedure is illustrated in Exhibit 9.

Based on the RCNLD analysis summarized in Exhibit 9, the analyst would conclude the fair market value of the Beta practice assembled workforce to be \$3.1 million as of December 31, 2020.

The analyst would include this intangible property value conclusion in the asset-based approach business valuation of the Beta practice total assets. Based on this asset-based approach business valuation, the analyst would recommend to the Gamma board of directors that Gamma pay no more than the total indicated value (as in, the total fair market value) as the purchase price for the Beta assembled workforce.

Ideally, the analyst would also have income approach and market approach value indications to correlate with the cost approach value indication. However, as in many intangible property valuations, it is relatively uncommon for the analyst to be able to synthesize multiple valuation approach value indications.

Let's assume that the Beta practice owners will retain the practice's cash and accounts receivable balances in the proposed asset purchase transaction.

Let's further assume that the analyst concluded the following fair market values for each of the remaining Beta practice tangible property and intangible property categories:

- Tangible personal property: \$5 million
- Current patient relationships (the value of the current patients to the current practice): \$2 million
- Patient charts and records: \$1.5 million
- Employee training and procedure manuals trade secrets: \$500,000
- Goodwill: \$900,000

Based on these indicated fair market values, the analyst can integrate the value of the assembled workforce intangible property. The assembled workforce value was concluded by application of the cost approach. The analyst develops to practice total asset valuation by applying the asset-base business valuation approach and the asset accumulation business valuation method.

Based on that business valuation analysis, the analyst would recommend that the Gamma board of directors pay a purchase price no greater than the fair market value of the Beta practice total operating assets, as indicated in Exhibit 10.

Exhibit 7
The Beta Group
Trained and Assembled Workforce Intangible Property
Cost Approach
Economic Obsolescence Analysis
Selected Economic Obsolescence Data
As of December 31, 2020

Item	Financial or Operational Performance Metric	LTM Ended 12/31/20	Benchmark Measure	LTM Metric Percentage Deficiency	Benchmark Comparison Reference Source
1	Average Collected Revenue per Physician	\$340,000	\$420,000	19%	2020 Regional Internal Medicine Group Average
2	Number of Support Staff per Physician	4.0	3.2	25%	2020 Regional Internal Medicine Group Average
3	Average Salary per Physician	\$180,000	\$220,000	18%	2020 Regional Internal Medicine Group Average
4	Annual Growth Rate in the Practice Revenue	3.5%	4.5%	22%	Actual Beta Practice Average for 2016–20
5	Profit Contribution per Physician (pre-MD comp.)	\$200,000	\$280,000	29%	2020 Regional Internal Medicine Group Average
6	Profit Contribution Margin (pre-MD comp.)	59%	67%	12%	2020 Regional Internal Medicine Group Average
7	Average Patients Seen per Physician per Day	8.2	10	18%	The 2020 Beta Practice Budget
8	Average Revenue Billed per Patient Visit	\$80	\$100	20%	The 2020 Beta Practice Budget
9	Return on the Practice's Average Assets	10%	12.5%	20%	Actual Beta Practice Average for 2016–20
10	Return on the Practice's Average Equity	20%	25%	20%	Actual Beta Practice Average for 2016–20

Latest 12-Month Benchmark Financial or Operational Performance Metric Percentage Deficiency:

Mean Deficiency	20.3%
Median Deficiency	20.0%
Mode Deficiency	20.0%
Trimmed Mean Deficiency	20.3%
Trimmed Median Deficiency	<u>20.0%</u>
Selected Economic Obsolescence Indication	<u>20%</u>

SUMMARY AND CONCLUSION

This discussion described the application of the generally accepted cost approach valuation methods and procedures. These methods and procedures are generally applicable to the valuation of intellectual property—and to many other types of intangible property.

This discussion presented several illustrative examples of the application of cost approach methods in the development of an intellectual property valuation.

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Exhibit 8
The Beta Group
Trained and Assembled Workforce Intangible Property
Cost Approach
Economic Obsolescence Allowance
As of December 31, 2020

Cost Approach Analysis		Cost Component
RCNLD		\$3,843,400
Multiplied by:	Selected Economic Obsolescence Percentage	<u>20%</u>
Equals:	Economic Obsolescence Allowance (rounded)	<u>\$768,700</u>

Exhibit 9
The Beta Group
Trained and Assembled Workforce Intangible Property
Cost Approach—RCNLD Method
Valuation Synthesis and Conclusion
As of December 31, 2020

Cost Approach Analysis		Cost Component
RCN		\$4,178,000
Less: Physical Deterioration Allowance		128,600
Less: Functional Obsolescence Allowance		206,000
Less: Economic Obsolescence Allowance		<u>768,700</u>
Equals: RCNLD		<u>3,074,700</u>
Fair Market Value of the Assembled Workforce (rounded)		<u>\$3,100,000</u>

Exhibit 10
The Beta Group
Total Operating Assets
Asset-Based Approach Business Valuation
Asset Accumulation Valuation Method
Valuation Synthesis and Conclusion
As of December 31, 2020

Beta Practice Asset Category	Fair Market Value
Tangible Personal Property	\$5,000,000
Intangible Personal Property:	
Patient Relationships	2,000,000
Patient Charts and Records	1,500,000
Employee Training and Procedure Manuals	500,000
Trained and Assembled Workforce	3,100,000
Goodwill	<u>900,000</u>
Fair Market Value of the Beta Practice Total Operating Assets	<u>\$13,000,000</u>

The Application of the Income Tax Amortization Benefit Adjustment

Patrick M. Allen and Nathan P. Novak

There is some diversity of professional practice among valuation analysts (“analysts”) regarding the application of the so-called tax amortization benefit (“TAB”) adjustment in the development of the intellectual property cost approach valuation. For the numerous reasons presented in this discussion, the analyst’s application of such a TAB adjustment is typically not supportable in a cost approach valuation of intellectual property. However, TAB adjustments are sometimes applied in an intellectual property fair value measurement (“FVM”) developed for financial accounting purposes. Therefore, this discussion presents an illustrative example of the calculation of a TAB adjustment in an intellectual property FVM developed for financial accounting guidance compliance purposes.

INTRODUCTION

There is a diversity of practice among valuation analysts (“analysts”) regarding the application of the tax amortization benefit (“TAB”) adjustment as part of a cost approach valuation of intellectual property. While some analysts apply the TAB adjustment to the cost approach valuation of intellectual property prepared for various purposes, the application of the TAB adjustment is often inappropriate in a cost approach valuation of intellectual property (and other categories of intangible property). The application of the TAB adjustment is typically excluded from cost approach valuation analyses.

This exclusion of the TAB adjustment is because there are no income tax considerations (related to amortization income tax deductions or otherwise) when applying the cost approach. This statement is generally true whether the cost approach is applied in the valuation of tangible property or intangible property.

The direct costs and indirect costs included in any cost approach valuation method cost measurement should be considered expenditures. These expenditures should not be considered either before-tax or after-tax expenses.

COST APPROACH COST METRICS

The cost approach measures the current costs and indirect costs as expenditures that would be made by a hypothetical buyer or a hypothetical seller. The cost approach does not measure expenses, as that would be recognized for either financial accounting purposes or for income tax reporting purposes.

The costs included in the cost approach intellectual property valuation analysis are expenditures paid to create an alternative (as in, the replacement or the reproduction) intellectual property.

Therefore, it is not appropriate to tax affect (or to consider any income tax considerations related to) such intangible property development expenditures.

“Effectively, there are no income tax considerations when applying the cost approach to intellectual property valuation.”

It is not appropriate to consider any income tax considerations related to such intangible property development expenditures. These expenditures should be considered as “payments”—not as expenses (tax deductible or otherwise).

Effectively, there are no income tax considerations when applying the cost approach to intellectual

property valuation. In contrast, income tax considerations are relevant when applying the income approach to intellectual property valuations.

These income approach income tax considerations relate to both:

1. the measure of income subject to the analysis and
2. the present value discount rate and/or the direct capitalization rate applied in the analysis.

VALUATION PROFESSIONAL GUIDANCE

The Appraisal Foundation published *Appraisal Practices Board VFR Valuation Advisory 2: The Valuation of Customer-Related Assets* (“VFR 2”). VFR 2 states that, when applying the cost approach to estimate the fair value of customer-related intangible assets, “the costs estimated in this method are investment costs and not period costs, and therefore the conclusion of the cost approach should not be tax affected. Nor should the conclusion be adjusted for the TAB, as a pre-tax conclusion is consistent with an exit price that a market participant would receive for the asset.”

The logic of the preceding VFR 2 quote applies specifically to the fair value measurement (“FVM”) of customer-related intangible assets. FVMs are developed for financial accounting compliance purposes.

Nonetheless, this same VFR 2 logic is broadly applicable to application of the cost approach to other intangible property—and to intellectual property—in valuations developed for any other purposes.

The *Application of the Mandatory Performance Framework for the Certified in Entity and Intangible Valuations Credential* (“AMPF”) also

considers the application of the TAB with respect to development of the cost approach. The AMPF states that a TAB should be considered in the FVM of an intangible asset—but it should be applied only when appropriate. Again, the AMPF guidance only applies to FVMs developed for financial accounting purposes.

Specifically, the AMPF states, “a TAB is generally considered appropriate when estimating the fair value of an entity using an income approach for a presumed taxable transaction. However, when the cost approach (unless a cost savings method) . . . is used, a TAB is not appropriate (a) under a non-taxable transaction, (b) when pre-tax costs are expended, or (c) when the price paid reflects the full fair value of the entity.”¹

Ultimately, if a “pretax” cost measurement metric is applied in the cost approach analysis to estimate the value of an intangible property, the addition of a TAB is inappropriate. In contrast, the addition of a TAB adjustment is usually considered appropriate when applying the so-called cost savings method.

The so-called cost savings method is an income approach valuation method that may be applied to value an intangible property.

THE INTELLECTUAL PROPERTY VALUATION INCOME APPROACH

The TAB adjustment is typically appropriate in the application of the income approach to value intangible property—including an intellectual property.

Effectively the TAB adjustment in the income approach valuation analysis:

1. decreases the income tax expense related to the intangible property income projections and
2. increases the after-tax income projection associated with the intangible property.

However, neither income tax expense nor after-tax income is part of the application of a cost approach valuation analysis.

In some applications of the income approach to intangible property valuation, it may be appropriate for the analyst:

1. to project a pretax income measure and
2. to apply a pretax discount rate or capitalization rate.

Likewise, in some other income approach valuation applications, it may be appropriate for the analyst:

1. to project an after-tax income measure and
2. to apply an after-tax discount rate or capitalization rate.

In the latter instance (i.e., the after-tax valuation analysis), the application of the TAB recognizes the temporary additional income tax deductions associated with the Section 197 amortization of certain offered intangible property.

Effectively, that additional amortization income tax deduction corrects the (temporarily) understated after-tax income projection related to the intangible property. That tax deduction also corrects the (temporarily) overstated effective income tax rate in the intangible property income approach analysis.

In other words, the TAB adjustment is incorporated in order to correct an artificially overstated projection of income tax expense and an artificially overstated income tax rate that is applied in the unadjusted income approach valuation analysis.

Nonetheless, there is no income tax component (implicit or explicit) in the cost approach valuation analysis that needs such an adjustment. This is the case because there is no income tax amortization (or lack thereof) recognized as part of an intangible property cost approach valuation analysis.

In addition, this is the case because the cost approach considers capitalizable expenditures (e.g., intellectual property development costs). The cost approach does not consider current period expenses—whether tax deductible or otherwise.

No pretax income or expense projection variables—and no effective income tax rate variables—are applied in any cost approach valuation method. Therefore, there are no tax-related valuation variables to correct (or adjust) in the application of the cost approach to either tangible property valuation or intangible property valuation.

TANGIBLE PERSONAL PROPERTY VALUATION

As an analogy, let's consider an assignment to estimate the fair market value of an industrial machine (i.e., a tangible personal property). To estimate the



value of this machine, the analyst could apply the cost approach and could apply the same (or a similar) cost approach methodology as previously discussed for valuing an intangible personal property.

Let's assume that the analyst estimates the replacement cost new less depreciation ("RCNLD") for the subject machine to be \$600,000.

Let's assume that the tangible property owner/operator would have to pay the equipment manufacturer \$1 million for a new machine. That is, the machine's replacement cost new ("RCN") is \$1 million. Let's further assume that the subject equipment is four years old with a total expected useful economic life of 10 years.

Assuming straight line useful life depreciation for the machine, the physical depreciation adjustment would be \$400,000. For simplicity, let's assume that the analyst concludes that no functional obsolescence adjustment or external (economic) obsolescence adjustment is necessary in the cost approach valuation of the subject machine.

Accordingly, the machine's RCNLD would be \$600,000 (that is, \$1 million RCN less \$400,000 of physical depreciation equals a \$600,000 RCNLD).

In valuing that tangible property, the analyst would not further adjust the concluded RCNLD value indication for the present value of any income tax benefit. Nonetheless, the machine owner/operator will benefit from depreciation income tax deductions on that equipment over, say, a modified cost recovery system ("MCRS") tax depreciation period.

The tangible property valuation may in fact recognize that the owner/operator will be able to claim an annual income tax deduction related to tangible

property depreciation. If the analyst had applied an income approach valuation method in valuing the machine, it may be appropriate for the analyst to adjust the cash flow projection for the present value of the income tax benefit associated with the depreciation income tax deductions.

However, because the analyst applied the cost approach in this tangible personal property valuation analysis—and because no income tax component is considered in the cost approach—it would be inappropriate to adjust the cost approach value indication for that depreciation-related income tax benefit.

This tangible personal property valuation example is analogous to an intangible property valued through application of the cost approach.

Just as it is inappropriate to adjust the RCNLD value indication for the depreciation income tax deductions when applying the cost approach to value a *tangible property*, it is also inappropriate to adjust the RCNLD value property for the amortization income tax deductions when applying the cost approach to value an *intangible property*.

THE SO-CALLED COST SAVINGS METHOD

This clear distinction between the cost approach and the income approach can sometimes confuse analysts who apply the so-called cost savings method to value intangible property. However, the cost savings method (sometimes called the cost avoidance method) is, in fact, an income approach valuation method. The cost savings method is not a cost approach valuation method.

For example, let's assume that an intellectual property owner/operator owns a well-recognized and trusted trademark. The analyst concludes that, because of the current level of consumer awareness related to the trademark, the owner/operator will not need to spend \$1 million per year on institutional advertising for the next 10 years.

Therefore, the analyst may value the trademark by considering the present value of the \$1 million annual advertising “cost” avoided over the next 10 years. In this cost savings method valuation analysis, the analyst could apply an after-tax discount rate to an after-tax projection of advertising expense savings.

The analyst may also apply a TAB adjustment in order to conclude the income approach value indication for the trademark.

It is important to note that this trademark valuation example illustrates the application of the

income approach and the cost savings method. This trademark valuation example does *not* illustrate the application of any cost approach valuation method to value the trademark.

Some analysts may confuse the cost approach RCNLD method with the income approach cost savings (or cost avoidance) method. The cost savings method is an income approach valuation method. This income approach method is based on the present value of some avoided (tax deductible) operating (or period) expenses. These avoided period expenses may include advertising expenses, selling expenses, shipping and delivery expenses, research and development expenses, and so forth.

This cost-savings income approach method is not based on the measurement of the intangible property development costs.

Therefore, an adjustment for the TAB may be appropriate when applying the income approach cost savings method to value an intangible property. This is because the cost savings method will often apply after-tax expense savings and an after-tax present value discount rate.

In contrast, the cost approach RCNLD method has no income tax component. Therefore, it is inappropriate to apply a TAB adjustment when applying a cost approach valuation method.

The cost approach does not consider income taxes and, therefore, should not consider a TAB adjustment in most circumstances.

However, there are circumstances in which it may be appropriate for the analyst to apply a TAB adjustment to the cost approach value indication prepared for fair value measurement and financial accounting purposes.

FAIR VALUE MEASUREMENTS AND FINANCIAL ACCOUNTING

When developing a fair value measurement for financial accounting purposes, for example, the analyst may be asked by the owner/operator entity's auditor to include a TAB in the cost approach valuation of certain intangible property.

The consensus of analysts is that only when performing FVM for financial accounting purposes is it ever appropriate to include a TAB adjustment in an intangible asset valuation developed by the cost approach. Exhibit 1 illustrates this exceptional circumstance.

One formula that analysts can apply to quantify the TAB adjustment follows:

$$\text{TAB} = \text{Int} \times (n / (n \{ (PV(r, n, -1) \times (1+r)^{.5}) \} \times t) - 1)$$

where:

Int	= Intangible asset value
n	= Number of years
$\{(PV(r, n, -1) \times (1+r)^{.5})\}$	= Present value of an annuity of \$1 over n years, at the r present value discount rate
t	= Income tax rate
r	= Present value discount rate

TAB ADJUSTMENT ILLUSTRATIVE EXAMPLE

Let's assume that the analyst has estimated the RCNLD value of an intellectual property, say computer software copyrights and trade secrets, produced by the Epsilon Company ("Epsilon"), to be \$1.8 million as of the December 31, 2020, fair value measurement date.

Epsilon's auditor has asked the analyst to incorporate a TAB adjustment into the cost approach FVM of the computer software intellectual property.

The analyst estimates that an appropriate present value discount rate attributable to the software intellectual property is 17.5 percent. Epsilon management estimated the effective income tax rate to be 38 percent.

The analyst concludes that the internally developed computer software will be amortizable for federal income tax purposes over the Section 197 15-year amortization period.

As presented in Exhibit 1, by applying the TAB adjustment formula, the analyst estimates a 16.7 percent TAB adjustment. For purposes of this fair value measurement for financial accounting purposes, the analyst applied the TAB adjustment. Applying that TAB adjustment percentage to the computer software RCNLD of \$1.8 million, the analyst arrives at the TAB adjustment of \$300,200.

The concluded FVM of the Epsilon computer software intellectual property, as of December 31, 2020, is equal to the internally developed software RCNLD plus the amount of the TAB adjustment, or approximately \$2,100,000.

SUMMARY AND CONCLUSION

This discussion described analyst considerations related to the application of the TAB adjustment in an intellectual property valuation developed by the application of the cost approach. For the reasons described above, it is typically inappropriate for the analyst to incorporate a TAB adjustment in a cost approach valuation of intellectual property—or of other intangible property.

However, a TAB adjustment is sometimes included in intellectual property fair value measurements developed for financial accounting purposes. Therefore, this discussion presented an illustration of the application of a TAB adjustment in an intellectual property fair value measurement developed for financial accounting purposes.

Exhibit 1 Epsilon Company Computer Software Intellectual Property Fair Value Measurement Application of the TAB to a Cost Approach Value Indication As of December 31, 2020

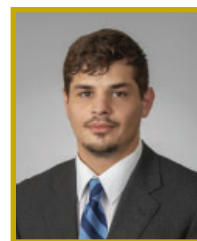
Cost Approach Fair Value Measurement Component	\$
Computer Software RCNLD	1,800,000
Plus: TAB	
Number of Years (n) =	15
Income Tax Rate (t) =	38.0%
Present Value Discount Rate (r) =	<u>17.5%</u>
Equals: TAB Adjustment	16.7% <u>300,200</u>
Equals Fair Value Measurement of the Computer Software Intellectual Property (rounded)	<u>2,100,000</u>

Note:

1. The cost savings method is actually an income approach valuation method, not a cost approach valuation method. Accordingly, while it is typically appropriate to consider and apply a TAB adjustment when applying an income approach valuation method, it is typically not appropriate to apply a TAB adjustment when applying a cost approach valuation method.

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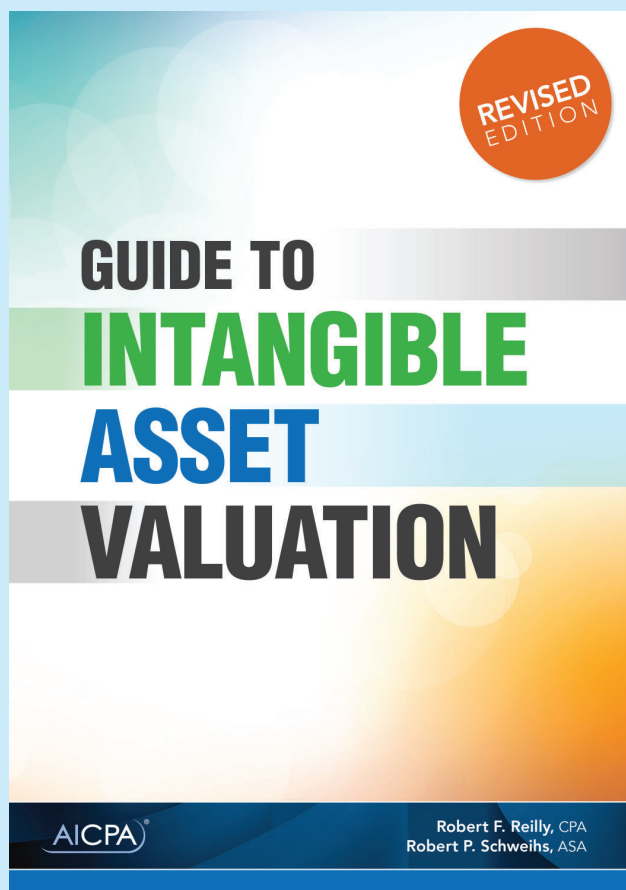
Nathan Novak is a vice president in our Chicago practice office. He can be reached at (773) 399-4325 or at npnovak@willamette.com.



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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.

Robert Reilly and Bob Schweih, Willamette Management Associates managing directors, discuss such topics as:

- Identifying intangible assets and intellectual property
- Structuring the intangible asset valuation, damages, or transfer price assignment
- Generally accepted valuation approaches, methods, and procedures
- Economic damages due diligence procedures and measurement methods
- Allowable intercompany transfer price analysis methods
- Intangible asset fair value accounting valuation issues
- Valuation of specific types of intangible assets (e.g., intellectual property, contract-related intangible assets, and goodwill)

Illustrative examples are provided throughout the book, and detailed examples are presented for each generally accepted (cost, market, and income) valuation approach.

Who Would Benefit from This Book

- Litigation counsel involved in tort or breach of contract matters
- Intellectual property counsel
- International tax practitioners
- Property tax practitioners
- Auditors and accountants
- Valuation analysts
- Licensing executives
- Multinational corporation executives
- Commercial bankers and investment bankers
- Merger & acquisition professionals
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Guide to Intangible Asset Valuation

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Confirming the Intellectual Property Cost Approach Value or Damages Conclusion

John H. Sanders and Connor J. Thurman

Valuation analysts may apply the cost approach in the development of an intellectual property valuation. Damages analysts may apply the cost approach in the development of an intellectual property damages measurement—particularly in the application of the cost to cure (or lost intellectual property value) damages measurement method. In either case, there are methods and procedures that such analysts can apply to confirm (or to otherwise support) the intellectual property cost approach value conclusion or damages measurement.

INTRODUCTION

In the application of the cost approach in an intellectual property valuation or damages analysis, the analyst will typically perform procedures to confirm the intellectual property value or damages measurement conclusion. For purposes of this discussion, the term “analyst” includes both a valuation analyst and a damages analyst.

These value (and value component of a cost to cure method damages measurement analysis) confirmation procedures will vary based on which of the following two alternative scenarios is applicable to the intellectual property analysis:

1. The intellectual property is valued as part of an assumed (hypothetical) independent sale or license transaction. In other words, the intellectual property is valued separately from any other owner/operator entity operating assets.
2. The intellectual property is valued as part of an assumed (hypothetical) aggregate sale or license transaction. In other words, the intellectual property is valued as part of the total assemblage of owner/operator entity operating assets.

There are many reasons for the analyst to value (or conclude the lost value of) the intellectual property in the first scenario. In the first scenario, the intellectual property is assumed to transfer independently from any other operating assets of the owner/operator entity.

There are also many reasons for the analyst to value (or conclude the lost value of) the intellectual property in the second scenario. Such analyses often involve valuing the intellectual property as part of an overall business valuation of an operating company (or professional practice).

Alternatively, such analyses can involve allocating an overall business entity value (such as a business combination purchase price) to its component assets for financial accounting, income tax, property tax, or other purposes.

The analyst may confirm the intellectual property cost approach value (or lost value) indication by applying either of the following procedures:

1. Valuing the individual intellectual property by applying the income approach and/or the market approach
2. Valuing the total business enterprise of the intellectual property owner/operator

Ultimately, to the extent that the analyst relies on multiple valuation approaches and methods to estimate the value (or the lost value) of an intellectual property, the analyst should reconcile the various valuation approaches into a supportable and reasonable value conclusion.

Confirming the Value of a Damages Conclusion by Applying Other Intellectual Property Valuation Approaches

If the income approach or market approach intellectual property value (or lost value) indications are greater than the cost approach intellectual property value (or lost value) indication, that may mean that the cost approach analysis:

1. understated the appropriate amount of entrepreneurial incentive or
2. overstated the appropriate amount of obsolescence (functional obsolescence and/or economic obsolescence).

If the income approach or market approach intellectual property value (or lost value) indications are less than the cost approach intellectual property value (or lost value) indication, that may mean that the cost approach analysis:

1. overstated the appropriate amount of entrepreneurial incentive or
2. understated (or failed to consider) the appropriate amount of obsolescence (functional obsolescence and/or economic obsolescence).

The application of intellectual property valuation approaches sometimes concludes materially different value (or lost value) indications for the same intellectual property. In these circumstances, it is often the case that, when reconciling seemingly different intellectual property value (or lost value) indications, the analyst discovers a misapplication of (or failure to apply) an integral procedure in the cost approach analysis.

Confirming the Intellectual Property Value or Damages by Valuing the Total Business Enterprise

The analyst may be able to confirm the intellectual property cost approach value (or lost value) indication when that valuation is a component of either:

1. an asset-based approach business valuation (developed to conclude a total business enterprise value) or
2. a total business enterprise purchase price (or other aggregate business enterprise value) allocation.

Analysts often apply the cost approach to value intangible property (and tangible property) when applying the asset-based valuation approach and the asset accumulation valuation method to conclude a business enterprise value. In that business valuation method, the analyst concludes a total equity value as the sum of all tangible property values and all intangible property values (less the value of all of the liability amounts).

To confirm the intellectual property cost approach value (or lost value) indication, the analyst can compare (1) the total business enterprise value indication derived from the asset-based approach asset accumulation method's total business enterprise value indication to (2) the total equity value indications derived from the income approach and/or the market approach.

In some instances, the analyst cannot (or is not engaged to) develop income approach or market approach valuations of the owner/operator's business entity. However, if there are income approach and/or market approach business enterprise value indications, then the analyst may reconcile those business value indications to the asset-based approach business value indication.

In the case of a business combination purchase price (or other total enterprise value) allocation, the analyst has the total entity price/value to reconcile to the sum of (1) all of the tangible property values and (2) all of the intangible property values.

When the income approach or the market approach business enterprise values (or the business combination total purchase price) materially exceeds the sum of all the entity's tangible property values and intangible property values, then the analyst should consider whether:

1. the cost approach property values are understated because (a) entrepreneurial incentive is understated or (b) obsolescence is overstated or
2. one or more intangible property is missing from the business enterprise valuation analysis. In other words, the analysis may have failed to identify and value one or more categories of intangible property that may exist in the business enterprise.

When the income approach or the market approach business enterprise values (or the total business combination purchase price) is materially less than the sum of all the entity's individual tangible property values and intangible property values, then the analyst should consider whether:

1. the cost approach property values are overstated because (a) entrepreneurial incentive is overstated or (b) obsolescence (particularly economic obsolescence) is understated (or ignored) or
2. one or more categories of intangible property is double-counted in the business enterprise valuation. In other words, the analysis may have assigned independent values to (for example) an enterprise software company's internally developed software, employee noncompete agreements, favorable lease contracts, and goodwill, when only one intangible property category materially contributes to the software company's business value.

Business valuation approaches sometimes conclude materially different value indications for the same entity. In these circumstances, it is often the case that, when reconciling seemingly different business enterprise value indications, the analyst discovers a misapplication of (or a failure to apply) an integral procedure in the intangible property cost approach valuation analysis.

Regarding a business valuation concluded by the asset-based approach asset accumulation method, it is not unreasonable for an entity to have some positive goodwill (often measured by some type of capitalized excess earnings method analysis).

If the entity's value indicates (1) a disproportionately large amount of unexplained goodwill or (2) a negative indication for the entity goodwill, then the analyst should consider whether the cost approach value indications for the tangible property or the intangible property categories are misstated.

In particular, negative goodwill value indications (or an asset-based valuation approach total value that exceeds the income approach or the market approach total value) often indicate that the valuation failed to adequately recognize economic obsolescence in the cost approach analysis.

ECONOMIC OBSOLESCENCE INDICATIONS

As part of the asset-based approach confirmation, the analyst should look for indicia of economic

obsolescence related to the owner/operator. Most occurrences of economic obsolescence affect the owner/operator's entity and are not intrinsic to the subject intangible property.

To confirm that any economic obsolescence was appropriately identified in the cost approach, the analyst should look for any indications of economic obsolescence.

Economic obsolescence is typically identified and quantified on a comparative basis. The analyst usually compares actual owner/operator business operations affected by obsolescence to hypothetical ideal business operations with no obsolescence (as in, the operations that the owner/operator would most desire). That difference in these financial or operational metrics may be applied to measure any economic obsolescence in the cost approach valuation analysis.

In the comparative financial or operational performance metric procedure, economic obsolescence is measured without reference to the income approach value indication (if any). Both (1) return on investment ("ROI") or cost of capital rates and (2) income ratios may be used in the economic obsolescence measurement analysis.

In this procedure, the analyst measures economic obsolescence by reference to one or more performance metrics that relate to the ownership or the operation of the intangible property.

For each metric, the intangible property is analyzed "as is" (in other words, with the effect of the economic obsolescence in place). Each metric is then calculated for the intangible property as if it were operating without the effect of the economic obsolescence in place.

The two measures—with and without the effect of the economic obsolescence—are then compared. The difference between the two measures of the selected financial or operational metric is one measurement of economic obsolescence.

The analyst should apply professional judgment to select the appropriate economic performance metrics related to the intangible property. Such economic performance metrics can include the following:

- Revenue (measured in units, dollars, or product selling price)
- Income (measured as gross income, net operating income, net income, net cash flow, and so on)
- Profit margin (using the various income measures)

- ROI (using various measures of gross/net income and various measures of gross/net investment)
- Size of the product/service market (measured in units, dollars, or market share percentage)

The appropriate “with economic obsolescence” measurement period for the intangible property could include the following:

- The actual current period operating results
- The average of several recent periods of operating results
- The expected near-term future operating results

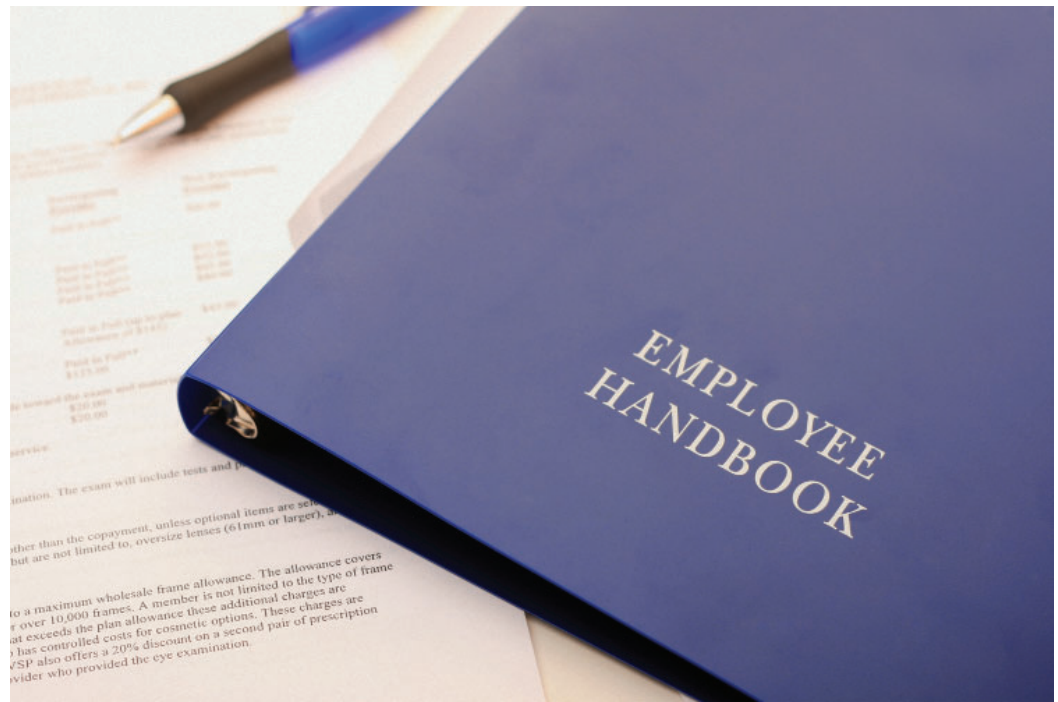
The appropriate “without economic obsolescence” measurement benchmark for the intangible property could include the following:

- Historical operating results from the time period when the intangible property was originally created
- Historical operating results from a time period before external influences caused the current economic obsolescence
- Projected operating results for a forecast period that excludes the effects of economic obsolescence (or a time period that assumes a return to normal levels of the owner/operator entity’s operating results)

INTELLECTUAL PROPERTY ECONOMIC OBsolescence ILLUSTRATIVE EXAMPLE

The economic obsolescence related to a hypothetical Zeta Company (“Zeta”) intellectual property is measured in the following illustrative example.

For the purposes of this example, let’s assume that the subject intellectual property includes the



trade secrets encompassed in the Zeta internally developed employee and workstation manuals and procedures (“manuals and procedures”).

One of the many different comparative economic performance metrics to measure economic obsolescence will be applied in this example. Let’s assume the analyst will measure economic obsolescence in this cost approach analysis to conclude the fair market value of this Zeta intellectual property as of December 31, 2020.

The Zeta market-derived cost of capital is 12.5 percent (the selected present value discount rate). Zeta actually earns (based on the entity’s historical net operating income) a 10 percent ROI (that is, its yield rate).

Based on this comparative economic performance metric—actual ROI versus the required rate of return—economic obsolescence can be measured based on the capitalization of income loss method (“CILM”) analysis presented in Exhibit 1.

Exhibit 1 presents an example of one application of the CILM to measure economic obsolescence.

Exhibit 2 applies this economic obsolescence measurement to the cost approach valuation analysis of the Zeta trade secrets manuals and procedures.

With this \$48,000,000 fair market value, Zeta should generate a sufficient level of economic support for the intellectual property. That is, Zeta should earn an exact 12.5 percent ROI, consistent with the Zeta cost of capital of 12.5 percent.

Exhibit 1
Zeta Company
Trade Secrets Intellectual Property
Employee and Workstation Manuals and Procedures
Capitalization of Income Loss Method
Economic Obsolescence Measurement
As of December 31, 2020

Market-Derived Required Rate of Return (i.e., yield capitalization discount rate)	12.5%
Less: Actual ROI	<u>10.0%</u>
Equals: Income Loss regarding the Return Measure (based on the deficiency of the selected performance metric)	2.5%
Divided by: Market-Derived Required Rate of Return	<u>12.5%</u>
Equals: Economic Obsolescence Percentage (i.e., 2.5% actual return deficiency divided by 12.5% required return)	<u>20.0%</u>

Exhibit 2
Zeta Company
Trade Secrets Intellectual Property
Employee and Workstation Manuals and Procedures
Cost Approach Analysis
Replacement Cost New less Depreciation Method
As of December 31, 2020

Employee and Workstation Manuals and Procedures RCNLD (before the recognition of any economic obsolescence)	\$60,000,000
Less: Economic Obsolescence Percentage at 20% (i.e., \$60,000,000 RCNLD multiplied by 20% economic obsolescence)	<u>12,000,000</u>
Equals: Fair Market Value of the Employee and Workstation Manuals and Procedures	<u>\$48,000,000</u>

RCNLD = Replacement cost new less depreciation

When applying the cost approach, the analyst should look for various indicia of economic obsolescence from the intellectual property owner/operator. If there is evidence of owner/operator economic obsolescence, then the analyst can consider any number of comparative financial or operational metrics in order to measure that obsolescence allowance.

Any of these financial or operational metrics can be considered in the application of the capitalization of income loss method to measure the economic obsolescence.

To conclude an intellectual property value or damages (lost value) indication, the analyst should adjust the cost approach analysis for an appropri-

ate economic obsolescence allowance.

SUMMARY AND CONCLUSION

Analysts may apply the cost approach to conclude an intellectual property value. Analysts may also apply the cost approach to measure damages (i.e., lost value) suffered by the intellectual property. This damages measurement method is often called the cost to cure method.

This discussion described and illustrated the methods and procedures that analysts can apply to confirm the conclusions of the intellectual property cost approach valuation or damages measurement analysis.

This discussion described the various procedures that analysts can apply to test the reasonableness of—or to adjust—the intellectual property cost approach value or damages conclusion.

Finally, this discussion presented an illustrative example of the measurement of economic obsolescence in an intel-



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Defending the Intellectual Property Cost Approach Value or Damages Conclusion

Kevin M. Zanni

One objective of the valuation analyst is to prepare an intellectual property valuation report that is clear, convincing, and cogent. One objective of the damages analyst is to prepare an intellectual property damages measurement report that is clear, convincing, and cogent. Regardless of which valuation approaches (including the cost approach) the analyst applied, the analyst should prepare a valuation report that supports a credible value conclusion. Regardless of which damages measurement methods the analyst applied (including the cost approach and the intellectual property lost value method), the analyst should prepare a damages report that supports a credible damages measurement.

INTRODUCTION

An intellectual property valuation report has many objectives. One of the primary objectives of the report is for the analyst (including the valuation analyst and/or the damages analyst) to persuade the report reader that his or her value (or lost value damages) conclusion is supported and supportable.

This statement is true regardless of whether:

1. the intellectual property valuation or damages report is a written report or an oral report and
2. the report reader is a transaction party, a taxing agency, a regulatory authority, an auditor, a financial institution, a judge (or other finder of fact), or some other report reader.

In the valuation or damages measurement report, the analyst wants to be able to defend the intellectual property value (or loss of value damages) conclusion.

To accomplish the objective of the intellectual property valuation or damages measurement analysis, the content and the format of the report should demonstrate that the analyst has accomplished the following assignment objectives:

- Understood the requirements of the specific intellectual property valuation or damages measurement assignment
- Understood the subject intellectual property and the subject bundle of legal rights
- Collected sufficient intellectual property owner/operator financial and operational data
- Collected sufficient industry, market, and competitive data
- Documented the specific intellectual property owner/operator's economic benefits
- Performed adequate analysis due diligence procedures related to all available data
- Selected and applied all applicable income approach, market approach, and—particu-

- larly for purposes of this discussion—cost approach valuation methods
- Reconciled all value (or lost value damages) indications into a final intellectual property value (or loss of value) analysis conclusion

The final (and perhaps most important) procedure in the entire analysis is for the analyst to defend the value—or loss of value—conclusion in a replicable and well-documented valuation report.

When defending an intellectual property value (or damages measurement) conclusion, the analyst's report (whether written or oral) should include numerous attributes, many of which are listed in Exhibit 1.

In addition, if the intellectual property analysis is being performed for fair value measurement ("FVM") purposes, section 2.27 of the *Mandatory Performance Framework* provides guidance with regard to the documentation and the content that should be included in the final FVM report.

To encourage any party that will rely on the intellectual property valuation or damages report (written or oral) and its value (or lost value) conclusion to accept its integrity, the report should be:

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

An effective (that is, a persuasive) intellectual property valuation or damages report will be a narrative that achieves all the following:

1. Defines the elements of the analyst's specific engagement or assignment
2. Describes the analyst's intellectual property data gathering and due diligence procedures
3. Justifies the analyst's selection of generally accepted intellectual property valuation (or damages measurement) approaches, methods, and procedures
4. Explains how the analyst synthesized the valuation process (including any value confirmation procedures) and reached the final intellectual property value—or loss of value—conclusion
5. Leads the parties relying on the report to the analyst's intellectual property value (or lost value damages) conclusion

To the extent that the intellectual property valuation—or loss of value—analysis relies on the cost approach, all cost approach components (including the cost components and the obsolescence components) should be defined and defended.

Errors and Misconceptions in the Application of the Cost Approach

There are many factors to consider, assumptions to select and support, and procedures to complete in

Exhibit 1 Intellectual Property Valuation and/or Damages Measurement Analysis Valuation or Damages Report Attributes

- Definition of the intellectual property valuation or damages measurement assignment
- Description of the subject intellectual property and the subject bundle of legal rights related to the intellectual property
- Explanation of the reasons for the selection of—and the rejection of—all generally accepted intellectual property valuation (or damages measurement) approaches and methods
- Explanation of the selection and the application of all specific analytical procedures performed
- Description of the analyst's data gathering and due diligence procedures
- List of all documents and data related to the intellectual property that were considered by the analyst
- Inclusion of copies of all source documents specifically relied on and analyzed by the analyst
- Summary of all qualitative valuation analyses performed (including, with regard to the subject owner/operator, all strengths, weaknesses, opportunities, and threats analysis and other competitive analyses)
- Inclusion of schedules and exhibits documenting all quantitative valuation (and loss of value damages) analyses performed
- Avoidance of any unexplained or unsourced intellectual property valuation variables or analysis assumptions
- Sufficient explanation and data to enable a report reader to replicate all quantitative valuation analyses (and loss of value damages) performed

order to apply the cost approach to an intellectual property valuation and damages analysis.

This section summarizes some of the more typical errors and misconceptions about the application of the cost approach in the intellectual property valuation or damages analysis.

The cost approach is not based on accounting book value. First, without conducting an analysis, there is no reason to expect the value indication produced by applying the cost approach to be the same as the book value of the intellectual property. The application of any cost approach valuation method will usually produce a value indication different from the historical-cost-based book value recorded on the owner/operator entity's balance sheet as of the valuation (or damages) date.

The cost approach is not the same as historical cost. Second, the cost approach generally considers the current costs to develop a new intellectual property. The cost approach includes forward-looking cost components. This is because the cost approach considers such current and prospective analysis components as developer's profit, entrepreneurial incentive, and functional and economic obsolescence.

The cost savings valuation method is not a cost approach valuation method. Third, the so-called cost savings (sometimes called cost avoidance) method is an income approach valuation method. The cost savings method is not a cost approach valuation method. Some analysts incorrectly assume that, because the cost savings method includes the word cost in its name, it is a cost approach valuation method.

The cost savings method is based on the present value of projected expense savings on the part of the intellectual property owner/operator. Such an analysis of future operating expense (including any savings of future operating expense) is different from the cost approach.

The cost approach analyzes expected future (capitalizable) expenditures required to develop a new intellectual property.

The cost approach considers costs—not expenses. Fourth, the cost approach considers capitalizable expenditures (as in, costs). The cost approach does not consider either historical or current period expenses. This consideration of costs—and not expenses—is another procedural difference between the cost approach and the income approach.

The cost approach considers opportunity costs. Fifth, the application of the cost approach should consider an opportunity cost (such as the income lost during the intellectual property replacement period) component within the analysis.

The opportunity cost component is often referred to as entrepreneurial incentive.

The cost approach considers all types of obsolescence. Sixth, the application of the cost approach should consider all forms of obsolescence. That is, the application of the cost approach should consider functional obsolescence (the inability of the intellectual property to perform the function it was designed to perform) and economic obsolescence (the inability of the owner/operator to earn a fair rate of return on the intellectual property cost approach value indication), among others.

It is usually inappropriate to include a tax amortization benefit (“TAB”) adjustment. Seventh, it is generally inappropriate to apply a TAB adjustment to a cost approach value indication. This is because the cost approach analysis does not consider any adjustment for income tax expense within the valuation (or lost value damages) analysis.

The application of a TAB adjustment inappropriately introduces an income tax adjustment to the cost approach valuation analysis—an analysis that does not include any tax-related components.

It is only appropriate for the analyst to apply a TAB adjustment in certain FVM analyses—in order to comply with the relevant financial accounting professional guidance.

SIMPLIFIED ILLUSTRATIVE EXAMPLES

The following two examples illustrate the application of the cost approach to value certain intellectual property.

Example 1: Valuation of Internally Developed Computer Software Copyrights and Trade Secrets

The first example involves the valuation of internally developed computer software copyrights and trade secrets.

This simplified example illustrates the application of the replacement cost new less depreciation (“RCNLD”) method with consideration of developer's profit, entrepreneurial incentive, and economic obsolescence.

This illustrative example is based on the following assumptions:

- Theta, LLC (“Theta”), is the owner/operator of the software-related copyrights and trade secrets.
- Theta is a management consulting firm.
- The valuation date is January 1, 2021.

- The computer-software-related intellectual property is important to the Theta business operations.
- The assignment standard of value is fair market value.

Theta's internal information technology ("IT") staff has developed many computer software programs over the years. All such software may be grouped into the seven major software systems listed in Exhibit 2.

The analyst worked with Theta IT management to estimate the amount of effort required to replace the functional equivalent (as in, the economic utility) of the internally developed software as of the valuation date.

The estimates of the number of development effort person-months required to replace the utility of each subject system are listed in Exhibit 2. A person-month is equal to 40 hours per week for four weeks.

The analyst concluded that it would require 11,856 person-months to replace the functionality of the software-related intellectual property.

The analyst studied the actual software development costs at Theta during 2020. Based on this study, the analyst concluded that the average cost per person-month for the Theta software development effort was \$14,585. That total cost includes all direct costs and all indirect costs related to the Theta actual software development efforts.

Therefore, that cost per IT person-month is a full absorption software development cost estimate.

The analyst estimated the developer's profit component related to the subject software's replacement cost new ("RCN"). The analyst surveyed several customized software development companies of the type that would accept contracts to replace the subject systems.

These companies stated that they would charge a 16 percent operating profit margin over their total actual development costs to replace the subject software. The analyst added this developer's profit cost component to the RCN estimate.

As indicated in the "Elapsed Time to Develop" column in Exhibit 2, it would take 24 elapsed months, on average, to develop and install all the hypothetical replacement software.

These software systems are important to Theta's ongoing business operations. Without these (or equivalent) software systems, Theta cannot operate as a management consulting firm. Therefore, the analyst decided to estimate the entrepreneurial cost

Exhibit 2
Theta, LLC
Software-Related Intellectual Property
Cost Approach—RCNLD Method
Valuation Summary
As of January 1, 2021

System No.	Software System	Estimated Software-Development Effort (in person-months)	Elapsed Time to Develop Software (in calendar-months)	Full Absorption Cost per Person-Month (includes direct and indirect cost components)	Indicated RCNLD Method Component (\$000)
1	AS/400	4,531	29	\$14,585	66,100
2	Point of Sale	575	25	14,585	8,400
3	Tandem	3,304	16	14,585	48,200
4	Unisys	1,229	5	14,585	17,900
5	Pioneer	1,807	41	14,585	26,400
6	Voyager	325	12	14,585	4,700
7	Host to Host	85	9	14,585	1,200
	Total Direct Cost and Indirect Cost Components (rounded)	11,856	24		172,900
	Plus: Developer's Profit (rounded)				27,700
	Equals: Subtotal				200,600
	Plus: Entrepreneurial Incentive (rounded)				31,200
	Equals: Total RCN				231,800
	Less: Functional Obsolescence (see Exhibit 3)				36,900
	Equals: Subtotal				194,900
	Less: Economic Obsolescence at 19% (see Exhibit 4)				37,000
	Equals: Computer Software RCNLD				157,900
	Fair Market Value of Theta-Software-Related Copyrights and Trade Secrets (rounded)				\$158,000

component as the opportunity cost related to total operating profits for a 24-month software replacement period.

The analyst estimated the normalized operating profits (measured here as earnings before interest and taxes or “EBIT”) for a 24-month software replacement period.

Working with the Theta financial management, the analyst concluded that this 24-month opportunity cost (as in, the Theta total lost profits without the computer software in place) is \$31.2 million. The analyst included this opportunity cost amount as the entrepreneurial incentive cost component.

Including all four cost components, the analyst estimated the Theta software-related intellectual property RCN to be \$231.8 million.

During the due diligence examination, the analyst learned that both the Unisys and the Pioneer systems are currently in the process of being replaced.

The Theta IT department is in the process of developing replacement application software for both systems. The Unisys system is expected to be replaced in one year and the Pioneer system within three years.

Based on these estimated times, and working with Theta IT management, the analyst estimated that (1) the Unisys system is 80 percent functionally obsolete and (2) the Pioneer system is 50 percent functionally obsolete.

The analyst estimated the Theta software functional obsolescence as summarized in Exhibit 3.

During the due diligence investigation, the analyst learned that most of the Theta software was developed and installed between five and eight years ago. During that earlier period, Theta was much more profitable than it is now.

Because of intense competition in its industry, the owner/operator profit margins, growth rates, and return on investments (“ROIs”) all decreased between (1) the period when the subject software was developed (2013

through 2016) and (2) the current period (all of 2020).

The analyst considered these factors when assessing the economic obsolescence component of the cost approach analysis. The analyst prepared Exhibit 4 to summarize some of the economic obsolescence elements considered in the software intellectual property valuation.

Based on the analysis of the financial and operational metric presented in Exhibit 4, the analyst selected 19 percent as the appropriate economic obsolescence measurement. The analyst applied this economic obsolescence measurement to the RCNLD indication presented in Exhibit 2.

Based on the illustrative facts presented in Exhibits 2 through 4, the analyst completed the software-related intellectual property valuation.

Based on the application of the cost approach, the analyst concluded that the fair market value of the Theta software-related copyrights and trade secrets was \$158 million as of January 1, 2021, as presented in Exhibit 2.

Example 2: Valuation of a Patent for a Drug Compound

The second illustrative example relates to the Eta Corporation (“Eta”). Eta is a company that makes pharmaceutical products. Eta recently obtained a patent on a new drug compound that it calls *Iota*.

This example illustrates the application of the RCNLD method to the valuation of the Eta intellectual property, with consideration of (1) the intellectual property development stages and (2) functional obsolescence measurement.

Exhibit 3
Theta, LLC
Software-Related Intellectual Property
Cost Approach—RCNLD Method
Functional Obsolescence Analysis
As of January 1, 2021

Computer Software System	RCN Total Direct and Indirect Cost Components (\$000)	RCN Developer’s Profit and Entrepreneurial Incentive Cost Components	Total RCN Cost Components (\$000)	Percentage of Functional Obsolescence	Total Functional Obsolescence (\$000)
Unisys	17,900	34%	24,000	80%	19,200
Pioneer	26,400	34%	35,400	50%	17,700
Total					36,900

Exhibit 4
Theta, LLC
Software-Related Intellectual Property
Cost Approach—RCNLD Method
Economic Obsolescence Analysis
As of January 1, 2021

Theta Financial and Operational Metrics	Average of 2012–2015	LTM 2019	Difference
EBIT Profit Margin	24%	20%	-16.7%
Net Cash Flow Margin	12%	10%	-16.7%
Pretax Net Income Margin	15%	12%	-20.0%
EBIT Return on Total Assets	16%	14%	-12.5%
EBIT Return on Net Assets	20%	16%	-20.0%
5-Year Compound Revenue Growth Rate	6.5%	4.5%	-30.8%
5-Year Compound Net Cash Flow Growth Rate	7.5%	5.5%	-26.7%
Average Sales Price per Unit Sold	\$1,200	\$1,050	-12.5%
Mean Deficiency in Metrics			-19.5%
Median Deficiency in Metrics			-18.4%
Trimmed Mean Deficiency in Metrics			<u>-18.8%</u>
Selected Economic Obsolescence			<u>-19%</u>

Eta retained the analyst to estimate the fair market value of the *Iota* patent. The valuation date is January 1, 2021.

The *Iota* patented drug compound has not been commercialized as of the January 1, 2021, valuation date.

Eta recently completed the drug development, patent, and FDA approval process. Accordingly, Eta management could provide the analyst with current and accurate (1) product development activities and (2) product development effort estimates (measured in person-months).

Working with Eta management, the analyst concluded that the average full absorption cost of the *Iota* development team is \$12,000 per person-month. The analyst based this valuation variable on actual development team current costs.

This person-month estimate includes all direct costs and all indirect costs related to the *Iota* development process.

Exhibit 5 presents the (1) drug compound's development stages, (2) estimated replacement effort by development stage, and (3) estimated total amount of elapsed time required to replace *Iota*.

Based on these data, the analyst can calculate total direct and indirect replacement costs.

The analyst estimated the developer's profit cost component. Like many pharmaceutical companies, Eta sometimes uses contract laboratories to assist in the drug development process. These contract laboratories typically work on a "cost plus" contract basis.

After reviewing the actual contracts that Eta entered into with contract laboratories, the analyst concluded that 20 percent was a reasonable developer's profit margin. The analyst included this developer's profit margin in the Exhibit 5 RCN estimate.

Working with Eta management, the analyst concluded that it would require 48 months of elapsed time to replace *Iota*. Eta management prepared a 10-year business plan for this new drug. The present value of the expected operating profit (measured here as EBIT) for the first 4 of 10 years is \$41.2 million.

With the *Iota* patent in place, Eta will earn (on a present value basis) \$41.2 million of operating profit from this product over the next four years. Without the *Iota* patent in place, Eta will earn \$0 of operating profit from this product over the next four years.

The analyst decided to use this opportunity cost measurement as the drug compound's entrepreneurial incentive cost component.

As Exhibit 5 demonstrates, the total drug compound patent RCN is \$229.7 million.

During the due diligence process, the analyst learned that the drug development team actually spent 1,100 person-months related to the development of ultimately unsuccessful features of the drug compound.

These features were not included in the drug compound that finally received (1) patent protection and (2) FDA approval. The analyst concluded

that these costs represent functional obsolescence; this is because a willing buyer would not pay for the unsuccessful features.

The analyst measured the amount of this functional obsolescence as presented in Exhibit 6.

The analyst considered the existence of economic obsolescence regarding *Iota*. Eta management developed for *Iota* a 10-year business plan. At the end of 10 years, Eta management believes that the drug will become obsolete.

The patent will still be legally valid. However, because of industry competition, Eta management expects that a substitute drug product will replace *Iota* in 10 years.

Based on this 10-year business plan, the analyst estimated that Eta will earn an internal rate of return ("IRR") of approximately 12.5 percent on the *Iota* product line over 10 years. The analyst learned that the Eta current cost of capital (its weighted average cost of capital or "WACC") is 14 percent.

Therefore, Eta management expects to earn with *Iota* an IRR that is 1.5 per-

Exhibit 5 Eta Corporation *Iota* Drug Compound Patent Cost Approach—RCNLD Method Fair Market Value Summary As of January 1, 2021

<i>Iota</i> Product Development Stages	Estimated <i>Iota</i> Replacement Development Effort (in person-months)	Elapsed Time to Develop <i>Iota</i> Replacement (in calendar months)	Full Absorption (direct and indirect) Cost by Person-Month	Indicated RCNLD Method Component (\$000)
Initial Compound Development	3,531	24	\$12,000	42,400
Product Compound Development	1,575	20	12,000	18,900
Initial Stage Product Tests	2,304	16	12,000	27,600
Second Stage Product Tests	1,669	5	12,000	20,000
Third Stage Product Tests	1,807	21	12,000	21,700
Final Patent and FDA License Process	1,325	12	12,000	15,900
Product Branding and Marketing Process	<u>885</u>	9	12,000	<u>10,600</u>
Total Direct and Indirect Replacement Costs	12,656	48		157,100
Plus: Developer's Profit				<u>31,400</u>
Equals: Subtotal				188,500
Plus: Entrepreneurial Incentive				<u>41,200</u>
Equals: Total RCN				229,700
Less: Functional Obsolescence (see Exhibit 6)				<u>19,300</u>
Equals: RCNLD before Economic Obsolescence				210,400
Less: Economic Obsolescence at 10% (see narrative)				<u>21,000</u>
Equals: RCNLD				<u>189,400</u>
Fair Market Value of the <i>Iota</i> Drug Compound Patent (rounded)				<u>190,000</u>

Exhibit 6 Eta Corporation *Iota* Drug Compound Patent Cost Approach—RCNLD Method Functional Obsolescence As of January 1, 2021

Person-Month Development Efforts Related to Unsuccessful Drug Features	1,100 Months
Times: Direct and Indirect Cost per Person-Month	<u>\$1,200</u>
Equals: Subtotal	13,200
Plus: Developer's Profit at 20%	<u>2,600</u>
Equals: Subtotal	15,800
Plus: Entrepreneurial Incentive at 22%	<u>3,500</u>
(same percentage of total RCN as indicated in Exhibit 5)	
Equals: Functional Obsolescence (rounded)	<u>\$19,300</u>



- An economic damages measurement
- An intellectual property bundle exchange ratio
- An opinion on the intellectual property transaction fairness

The analyst should also consider whether the selected intellectual property valuation (or damages) approach and method analyzes the appropriate bundle of legal rights. The analyst should consider whether there were sufficient empirical data available to perform the select-

cent less than the company's 14 percent WACC (or required ROI).

Based on this capitalization of income loss method analysis, the analyst concludes that this product line will experience approximately 10 percent economic obsolescence (put another way, the 1.5 percent IRR deficiency divided by the 14 percent company WACC).

The analyst included this 10 percent economic obsolescence allowance in the Exhibit 5 cost approach analysis. As a result, the analyst concluded the fair market value of the *Iota* patent to be \$190 million.

VALUATION OR DAMAGES SYNTHESIS AND CONCLUSION

In the intellectual property valuation (or damages measurement) synthesis and conclusion process, the analyst should consider the following question: Do the selected valuation (or damages) approaches and methods accomplish the analyst's assignment?

That is, does the selected intellectual property valuation (or damages) approach and method quantify the actual desired objectives of the valuation and/or damages measurement analysis?

These analysis objectives could include any of the following:

- A defined value
- A transaction price
- A third-party license rate
- An intercompany transfer price

ed valuation (or damages) approach and method.

That is, the valuation (or damages) synthesis should consider whether there were sufficient data available to make the analyst confident in the value (or other) conclusion. The analyst should consider if the selected valuation (or damages) approach and method will be understandable to the intended audience for the analysis.

In the valuation (or damages) synthesis and conclusion, the analyst should also consider which approaches and methods deserve the greatest consideration with respect to the intellectual property expected useful economic life ("UEL"). This UEL is a consideration in the application of any intellectual property valuation approach.

In the application of the income approach, the UEL can affect the projection period for income subject to either yield capitalization or direct capitalization.

In the application of the cost approach, the UEL may affect the total amount of obsolescence, if any, from the estimated cost metric (that is, reproduction cost new or replacement cost new).

In the application of the market approach, the UEL may affect the selection, rejection, and/or adjustment of the comparable or guideline intellectual property sale and inbound/outbound license transactional data.

The following factors typically influence the intellectual property expected UEL:

- Legal factors
- Contractual factors

- Functional factors
- Technological factors
- Economic factors
- Analytical factors

Each factor is normally considered in the analyst's UEL estimation. Typically, the life factor that indicates the shortest UEL deserves primary consideration in the intellectual property valuation (or damages) synthesis and conclusion.

Ultimately, the experienced analyst applies professional judgment to weight the various valuation approach and method value—or loss of value (or damages)—indications to conclude a final intellectual property value (or loss of value) based on the following:

- The analyst's confidence in the quantity and quality of available data
- The analyst's level of due diligence performed on that data
- The relevance of the valuation (or damages) method to the subject intellectual property life cycle stage and degree of marketability
- The degree of variation in the range of value—or loss of value—indications

Based on the valuation (or damages) synthesis, the intellectual property final value—or loss of value—conclusion can be either:

1. a value—or loss of value—point estimate (which is typical both in fair market value valuations and in fair value measurement) or
2. a value—or loss of value—range (which is typical in transaction negotiations or license/sale fairness opinions).

Analysts may be asked to estimate the value of—or to measure the damages to—an intellectual property for various of reasons. In addition to financial accounting purposes, analysts may be asked to estimate the intellectual property value—or loss of value—for various transaction, taxation, financing, litigation, bankruptcy, and owner/operator planning purposes.

In all cases, the analyst should consider all generally accepted intellectual property valuation (or damages measurement) approaches, methods, and

procedures. Many analysts are more familiar with market approach and income approach valuation methods. However, there are numerous instances when cost approach valuation methods are particularly applicable to the intellectual property valuation or damages analysis.

“Typically, the life factor that indicates the shortest UEL deserves primary consideration in the intellectual property valuation (or damages) synthesis and conclusion.”

SUMMARY AND CONCLUSION

This discussion summarized the procedures and considerations with regard to the application of the cost approach to intellectual property valuation or damages measurement analysis. The cost approach is applicable to the valuation or damages analysis of intellectual property in many industries, particularly in the technology, financial services, professional services, and health care industries.

However, the cost approach is only applicable to the intellectual property analysis if the analyst:

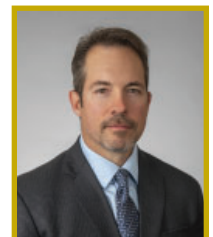
1. appropriately considers all intellectual property cost components and
2. appropriately identifies and quantifies all intellectual property obsolescence allowances.

Regardless of the type of the intellectual property or the reason for the valuation or damages analysis, the analyst should consider all generally accepted intellectual property valuation (or damages) approaches and methods.

The analyst should have a clear, convincing, and cogent rationale (1) for accepting each approach and method applied in the valuation or damages measurement analysis and (2) for rejecting each approach and method not applied in the valuation or damages analysis.

In this way, the analyst's value—or loss of value damages—conclusion will be (1) supportable and (2) credible.

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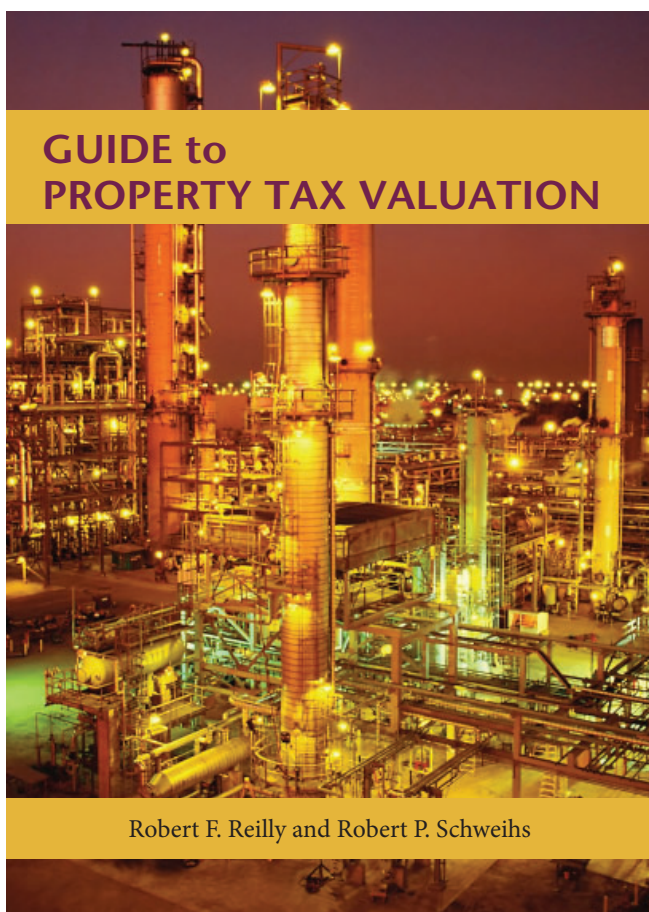


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A CITIZENS COMPANY

Best Practices Discussion

Developing the Intellectual Property Valuation, Damages, or Transfer Price Functional Analysis

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Analysts are often retained to develop a valuation conclusion, a damages measurement, or a transfer price determination related to an owner/operator's intellectual property. There are generally accepted approaches and methods related to each of these three types of intellectual property analyses. One procedure that is typically performed in each of these three types of analyses is a functional analysis. This discussion describes what a functional analysis is and how a functional analysis is applied to reach the intellectual property valuation, damages, or transfer price conclusion.

INTRODUCTION

Analysts are often retained by owner/operators (or by their legal counsel) to conclude the value of, the damages to, or the transfer price for intellectual property. These analysts may be retained for transaction, taxation, licensing, financing, financial accounting, litigation, strategic planning, and other purposes.

To develop these valuation, damages, or transfer price conclusions, the intellectual property owner/operators (or their legal counsel) may retain, work with, and rely upon specialists to develop these analyses. These specialists may include economists, forensic accountants, valuation analysts, licensing experts, industry consultants, and other professionals. For purposes of this discussion, all of these specialists will be referred to collectively as “analysts.”

In litigation matters, legal counsel may become involved with the intellectual property valuation, damages, or transfer price analysis. In financial accounting matters, independent accountants and regulatory audits may become involved with the intellectual property analysis. In taxation matters, taxing authority and other government regulators may become involved in the intellectual property analysis.

That is, many parties may be interested in the development of—and in the reporting of—the intellectual property valuation, damages, or transfer price analysis.

There are different sets of generally accepted approaches, methods, and procedures with regard to intellectual property valuation, damages, and transfer price analyses. These sets of approaches and methods will be introduced in this discussion. A

detailed discussion of each set of these approaches and methods is beyond the scope of this discussion.

This discussion focuses on one procedure that is an important component of each intellectual property valuation analysis, damages measurement, and transfer price determination. The procedure is called the functional analysis.

This discussion focuses on the development of, documentation of, and reporting of the functional analysis as one component of an intellectual property valuation or damages or transfer price analysis.

FUNCTIONAL ANALYSIS AND TRANSFER PRICE DETERMINATIONS

A functional analysis is often associated with an intercompany transfer price analysis. A functional analysis is one component of any transfer price analysis related to the intercompany transfer of tangible property, intangible property, or services.

The typical intercompany transfer involves a transfer of property or services between entities that are under common control. Such entities are often referred to as related parties. Such entities are sometimes also referred to as associated parties. A typical example of entities that are under common control would be two wholly owned subsidiaries (say, one domestic and one foreign) of the same multinational parent corporation.

Such transfer price analyses may be performed for federal (for multinational taxpayers) or state (for multistate taxpayers) tax planning, compliance, or controversy purposes.

A functional analysis is often applied for purposes of assessing the comparability of the subject entity (i.e., the intellectual property owner/operator) to selected guideline or benchmark entities. These selected guideline or benchmark entities could be comparable companies, securities, or properties (including tangible property and intangible property).

Many observers immediately think of a functional analysis within the context of the allocation of income and deductions among taxpayers for federal income tax purposes. The performance of a functional analysis is relevant in that context.

As described below, the regulations related to Internal Revenue Code Section 482 explain the application of a functional analysis for purposes of determining reliability. And, the Organisation for Economic Co-operation and Development (“OECD”) regulations describe the application of a functional

analysis within the context of an intercompany transfer of tangible property or intangible property between two OECD countries.

A functional analysis is certainly relevant to an intercompany transfer price determination regarding intellectual property made for purposes of Section 482 compliance (or OECD regulations compliance).

FUNCTIONAL ANALYSIS AND VALUATION CONCLUSIONS OR DAMAGES MEASUREMENTS

In addition to transfer price analysis, a functional analysis is also relevant within the context of a value conclusion and a damages measurement.

For purposes of this discussion, a value conclusion includes the valuation of a subject owner/operator entity’s tangible property and intangible property (including intellectual property). Such a valuation may be developed for taxation planning, compliance, or controversy (i.e., litigation) purposes. And, such taxation reasons may include income tax, gift tax, estate tax, property tax, or sales and use tax.

Such a valuation may be developed for transaction, financing, taxation, accounting, litigation, or other purposes.

For purposes of this discussion, a damages measurement includes the quantification of economic damages related to business entities, business ownership interests, tangible property, and intangible property (including intellectual property).

Such a damages measurement may relate to an injured party’s damages sustained with regard to either a tort claim or a breach of contract claim.

INTELLECTUAL PROPERTY CATEGORIES

For purposes of this discussion, intellectual property includes the following four categories of property: trademarks and trade names, patents, copyrights, and trade secrets.

In the United States, trademarks and trade names, patents, and copyrights are protected by federal law. In the United States, trade secrets are usually protected by state law. Unless otherwise described, this discussion considers the fee simple interest—or the total bundle of legal rights—related to each intellectual property category.

For purposes of this discussion, each intellectual property category includes the associated intangible property mentioned below.

Trademarks and Trade Names and Associated Intangible Property

For purposes of this discussion, this intellectual property category includes the following:

- Trademarks
- Trade names
- Service marks
- Service names
- Logos
- Trade dress

In addition, third-party sales, licenses, and other transfers of trademarks often include the following related intangible property:

- Brand names
- Advertising programs
- Brochures and marketing materials
- Name-related goodwill

Copyrights and Associated Intangible Property

For purposes of this discussion, this intellectual property category includes copyrights related to the following:

- Literary works
- Musical works
- Dramatic works
- Pantomimes and choreographed works
- Pictorial, graphic, or sculptural works
- Motion pictures and audiovisual works
- Sound recordings
- Architectural works
- Computer software (including both object code and source code)

Third-party sales, licenses, and other transfers of copyrights may include the following types of associated intangible property:

- Engineering drawings
- Blueprints
- Manuals and procedures
- Training films

Patents and Associated Intangible Property

For purposes of this discussion, this intellectual property category includes the following types of patents:

- Utility patents
- Design patents
- Plant patents
- Process/method patents

In addition, third-party sales, licenses, and other transfers of patents often include the following types of intangible property:

- Patent applications
- Technology sharing agreements
- Unpatented proprietary technology
- Regulatory approvals and licenses (e.g., FDA approvals, OSHA approvals)
- Technology development rights
- Engineering drawings and designs
- Schematics and technical documentation

Trade Secrets and Associated Intangible Property

For purposes of this discussion, this intellectual property category includes the following trade secrets and related documentation:

- Customer information
- Books and records
- Product formulas and recipes
- Procedures and know-how
- Pricing and cost information
- Accounting documentation

To maintain their confidentiality, trade secrets are rarely licensed or otherwise transferred to third parties. However, when they are transferred, the trade secrets sales or other transfers may include the following types of associated intangible property:

- Employee training manuals
- Position or station manuals
- Safety and procedures manuals
- Process flow charts and product build charts or blueprints
- Facility operations diagrams or schematics

In addition to the these intellectual property categories, there is a broader category of property that

is typically called intangible property or intangible assets. The above intellectual property categories may be considered a subset of intangible property or intangible assets.

A functional analysis is typically a component of a valuation, damages, or transfer price analysis of both intellectual property and the broader category of intangible property.

INTANGIBLE PROPERTY CATEGORIES

In the United States, Internal Revenue Code Section 367 includes a description of the term intangible property. Section 367 may apply when a U.S. corporation transfers its intangible property in exchange for the stock of a foreign (usually subsidiary) corporation.

Section 367(d) is titled “Special Rules Related to Transfers of Intangibles” and Section 367(d) (4) provides the following description of the term “Intangible Property”:

- (A) Patent, invention, formula, process, design, pattern, or know-how,
- (B) Copyright, literary, musical, or artistic composition,
- (C) Trademark, trade name, or brand name,
- (D) Franchise, license, or contract,
- (E) Method, program, system, procedure, campaign, survey, study, forecast, estimate, customer list, or technical data,
- (F) Goodwill, going concern value, or workforce in place (including its composition and terms and conditions (contractual or otherwise) of its employment), or
- (G) Other item the value or potential value of which is not attributable to tangible property or the services of any individual.

The Section 367(d) listing of intangible property includes, but is more comprehensive than, the four categories of intellectual property.

The regulations related to Section 482 also provide a listing of intangible property. Regulation 1.482-4 relates to “methods to determine taxable income in connection with a transfer of intangible property.”

The Regulation 1.482-4 listing of intangible property is similar to the Section 367(d) listing of intellectual property. And, the Regulation 1.482-4 listing is similar to the OECD listing of the type of property to be considered in the intercompany transfer of intangible property between OECD countries.

Regulation 1.482-4(b) provides the following definition of intangible property:

For purposes of section 482, an intangible is an asset that comprises any of the following items and has substantial value independent of the services of any individual -

- (1) Patents, inventions, formulae, processes, designs, patterns, or know-how;
- (2) Copyrights and literary, musical, or artistic compositions;
- (3) Trademarks, trade names, or brand names;
- (4) Franchises, licenses, or contracts;
- (5) Methods, programs, systems, procedures, campaigns, surveys, studies, forecasts, estimates, customer lists, or technical data; and
- (6) Other similar items. For purposes of section 482, an item is considered similar to those listed in paragraph (b)(1) through (5) of this section if it derives its value not from its physical attributes but from its intellectual content or other intangible properties.

The Regulation 1.482-4(b) listing of intangible property includes, but is not limited to, the four above-described categories of intellectual property.

In addition to taxation-related listings of intangible property, there are financial accounting listings of intangible assets. The word “property” is a legal term. The word “asset” is an accounting term. For purposes of this discussion only, those two terms are considered to be synonymous.

The Financial Accounting Standards Board (“FASB”) provides a listing of identifiable intangible assets in its Accounting Standards Codification (“ASC”) Topic 805. ASC Topic 805 is entitled “Business Combinations,” and it provides the U.S. generally accepted accounting principles (“GAAP”) guidance for the acquisition accounting for merger and acquisition transactions.

ASC Topic 805-20-55 provides the following categories of identifiable intangible assets that may be recognized in the acquisition accounting for a business combination:

- Marketing-related intangible assets
- Customer-related intangible assets
- Artistic-related intangible assets
- Contract-related intangible assets
- Technology-related intangible assets

ASC Topics 805-20-55-14 through 19 provide the following examples of marketing-related intangible assets:

- Newspaper mastheads
- Trademarks, service marks, trade names, collective marks, and certification marks
- Trade dress
- Internet domain names
- Noncompetition agreements

ASC Topics 805-20-55-20 through 28 provide the following examples of customer-related intangible assets:

- Customer lists
- Customer contracts and related customer relationships
- Noncontractual customer relationships
- Order or production backlogs

ASC Topic 805-20-55-29 provides the following examples of artistic-related intangible assets:

- Plays, operas, ballets
- Books, magazines, newspaper, and other literary works
- Musical works such as composition, song lyrics, and advertising jingles
- Photographs, drawings, and clip art
- Audiovisual material, including motion pictures, music videos, and television programs

ASC Topics 805-20-55-31 through 37 provide the following examples of contract-based intangible assets:

- License, royalty, or standstill agreements
- Advertising contracts
- Lease agreements
- Construction permits
- Construction contracts
- Construction management, service, or supply contracts
- Broadcast rights
- Franchise rights
- Operating rights
- Use rights
- Servicing contracts
- Employment contracts

And, ASC Topic 805-20-55-38 provides the following examples of technology-based intangible assets:

- Patented or copyright software
- Mask works
- Unpatented technology
- Databases
- Trade secrets

The International Financial Reporting Standards (“IFRS”) include International Accounting Standard (“IAS”) 38 “Intangible Assets.” IAS 38 provides the criteria for the international GAAP recognition of—and measurement of—intangible assets.

The IFRS also includes IFRS 3 “Business Combinations.” IFRS 3 provides the international GAAP guidance for the acquisition accounting related to merger and acquisition transactions.

IFRS 3 provides a listing of the identifiable intangible assets that may be recognized in the acquisition accounting for a business combination. That IFRS 3 listing of identifiable intangible assets is identical to the FASB ASC Topic 805 listing.

The FASB listing and the IFRS listing of intangible assets include, but are not limited to, the above-described four categories of intellectual property.

The purpose of presenting these listings is to indicate that all of these intellectual property assets and the associated intangible property assets are subject to valuation, damages, or transfer price analysis—for taxation, accounting, and other purposes. All of these intellectual property (and intangible property) analyses incorporate the functional analysis component.

WHAT IS FUNCTIONAL ANALYSIS?

Some observers initially think of a functional analysis within the context of an intercompany transfer price determination between the controlled entities of a taxpayer (often a multinational taxpayer) for Section 482 (or for OECD) compliance purposes. While there are broader applications of a functional analysis, the Section 482 (and the corresponding OECD) regulations do provide a definition of a functional analysis that is generally applicable for this discussion.

Regulation 1.482-1(d)(3)(i) relates to comparability issues related to the allocation of income and deductions among taxpayers.

Specifically, this regulation section deals with the factors for determining comparability of

transactions and companies. Regulation 1.482-1(d)(3)(i) describes a functional analysis as follows:

(i) Functional analysis. Determining the degree of comparability between controlled and uncontrolled transactions requires a comparison of the functions performed, and associated resources employed, by the taxpayers in each transaction. This comparison is based on a functional analysis that identifies and compares the economically significant activities undertaken, or to be undertaken, by the taxpayers in both controlled and uncontrolled transactions. A functional analysis should also include consideration of the resources that are employed, or to be employed, in conjunction with the activities undertaken, including consideration of the type of assets used, such as plant and equipment, or the use of valuable intangibles. A functional analysis is not a pricing method and does not itself determine the arm's length result for the controlled transaction under review. Functions that may need to be accounted for in determining the comparability of two transactions include –

- (A) Research and development;
- (B) Product design and engineering;
- (C) Manufacturing, production, and process engineering;
- (D) Product fabrication, extraction, and assembly;
- (E) Purchasing and materials management;
- (F) Marketing and distribution functions, including inventory management, warranty administration, and advertising activities;
- (G) Transportation and warehousing; and
- (H) Managerial, legal, accounting and finance, credit and collection, training and personal management services.

While this regulation lists eight functions, it does not imply that the eight-item list is exhaustive. Rather, the regulation indicates that the factors to consider “include” the eight listed functions. In addition, the regulation does not imply that the eight listed factors cannot be disaggregated or rearranged.

For the intellectual property owner/operator entity, a functional analysis basically considers the following topics:

1. What products and services are offered to customers or clients (and how are those products and services designed or developed)
2. What is the source of supply of the materials, labor, and overhead that is needed to produce those products and services (including sourcing dependence and sourcing logistics issues)
3. How the products and services are manufactured or otherwise produced
4. How the products and services are differentiated, promoted, priced, and sold (including advertising and branding issues)
5. How the inventory of products and services (including raw materials, work in process, and finished goods/services) are created, packaged, and stored
6. How the products and services are delivered (including shipping, transportation, and other delivery logistics issues)
7. What assets are utilized to perform the functions within the business entity (including working capital assets, tangible assets, and intangible assets)
8. How profits are earned in the business entity (including the cost/volume/profit relationships with regard to both (a) production/service creation cost of sales and (b) production/service delivery revenue recognition)
9. How the accounting, finance, human resources, management information, marketing, sales, and other administrative activities operate within the subject entity
10. How the subject entity is organized, managed, and capitalized (legally and administratively), including both (a) the relationship between the entity owners and the entity operators/managers and (b) the relationship between the entity and its sources of capital

There are various financial, competitive, and operational analyses that may be components of the functional analysis. There are also some types of financial, economic, and industry analysis that are not really components of the functional analysis. These considerations of what are the components—and what are not the components—of the functional analysis are summarized next.

Considerations That Are Components of the Functional Analysis

Exhibit 1 (at the end of this discussion) presents a listing of the typical analyst considerations in the performance of a functional analysis. This Exhibit

1 list is not intended to disagree with or to replace the eight factors listed in Regulation 1.482-1(d)(3)(i). Rather, the Exhibit 1 list of considerations is intended to expand on and to clarify the Regulation 1.482-1(d)(3)(i) list.

Exhibit 1 is presented so as to serve as a checklist of functional analysis considerations for any analyst who is developing an intellectual property valuation, damages, or transfer price opinion.

Depending on the objective of the intellectual property analysis, the Exhibit 1 considerations may be used to develop an understanding of the owner/operator entity or the intellectual property.

The Exhibit 1 considerations may also be used to compare the functions performed, assets employed, and risks assumed between two controlled entities under common ownership.

The Exhibit 1 considerations may be used to compare the functions performed, assets employed, and risks assumed between a controlled transaction and an uncontrolled transaction—particularly within the context of an intercompany transfer price determination.

Considerations That Are Not a Substitute for a Functional Analysis

As Exhibit 1 implies, there may be many components to the assessment of the owner/operator entity's functions performed, assets employed, or risks assumed.

The following analyses may also be performed as part of an intellectual property valuation, damages, or transfer price analysis. The following analyses may be considered as a part of—or a component of—a functional analysis.

The following analyses are not a substitute for a functional analysis of the owner/operator entity or the intellectual property:

1. Historical financial statement ratio or trendline analysis
2. State of the regional or national economy analysis
3. State of the subject industry analysis
4. Acquisition due diligence analysis
5. Quality of earnings analysis
6. SWOT (strengths, weaknesses, opportunities, and threats) analysis
7. History and description of the subject entity or intellectual property
8. Selection (and analysis) of guideline public companies or guideline merger and acquisi-

tion transactions or guideline license royalty rates

Each of the above analyses have a place in an intellectual property valuation, damages measurement, or transfer price analysis. However, each of the above analyses is different than the functional analysis of the intellectual property.

REASONS TO CONDUCT A FUNCTIONAL ANALYSIS

Whether the analysis objective is an intellectual property value estimate, a damages measurement, or a transfer price determination, the reasons for conducting a functional analysis are pretty much the same.

The first reason to conduct a functional analysis is to familiarize the analyst with the owner/operator entity or the intellectual property. The research required and the diligence necessary to conduct the functional analysis results in the analyst developing both a broad and a deep understanding of the analysis subject. By performing the functional analysis, the analyst better understands how the intellectual property works.

The second reason to conduct a functional analysis is to allow the analyst to assess comparability. The comparability assessment may allow the analyst to:

1. identify and select comparable companies, comparable transactions, comparable licenses, or other comparable transfers;
2. compare and contrast the functions of two related party (or associated) entities that are under common ownership (i.e., two controlled parties);
3. compare and contrast a controlled transaction with one or more uncontrolled (i.e., arm's-length) transactions;
4. make normalization adjustments to comparable companies, transactions, and licenses to make them more comparable to the analysis subject; and
5. make comparisons of the conditions in transactions between related parties—that is, the controlled transactions—with the conditions in comparable transactions between unrelated (or arm's-length) parties—that is, the uncontrolled transactions.

The third reason to conduct a functional analysis is to allow the analyst to assess the relative contribution of the various functions performed either:

1. within the subject entity or intellectual property or
2. between the related (or associated) parties in a controlled transaction.

The fourth reason to conduct a functional analysis is to allow the analyst to identify the various assets that are employed:

1. in the operation of the subject entity (intellectual property owner/operator) or
2. in the conduct of the controlled transaction.

These assets are employed to perform the various functions associated with the owner/operator entity. The assets considered in the functional analysis may include working capital accounts, tangible assets (real estate and tangible personal property), and intangible assets.

The fifth reason to conduct a functional analysis is to allow the analyst to identify the risks that are being assumed by the intellectual property owner/operator entity. A significant portion of the return earned by the entity's operations is due to the risks assumed by the entity.

The functional analysis allows the analyst to compare these risks:

1. within the owner/operator entity;
2. between the owner/operator entity and the selected comparable companies, transactions, and licenses; and
3. between related party (or associated) entities in a controlled transaction.

Each of these five reasons assists in the development of the intellectual property valuation, the damages measurement, or the transfer price determination.

THE FUNCTIONAL ANALYSIS IMPACT ON THE INTELLECTUAL PROPERTY VALUATION CONCLUSION

The functional analysis allows the analyst to understand the value creation within the owner/operator entity. While the functional analysis is primarily considered to be a procedure for assessing—and adjusting for—comparability, the functional analysis does not only impact the market approach to business valuation or intellectual property valuation.

There are comparability considerations in all generally accepted valuation approaches.

The three generally accepted approaches to value an intellectual property owner/operator business entity are the income approach, the market approach, and the asset-based approach.

The three generally accepted approaches to value an intellectual property are the income approach, the market approach, and the cost approach.

In the income approach to business or intellectual property valuation, the functional analysis will inform the analyst with regard to:

1. revenue projections,
2. expense projections,
3. investment projections,
4. present value discount rate components, and
5. expected long-term growth rate considerations.

In the market approach to business or intellectual property valuation, the functional analysis will inform the analyst with regard to:

1. normalizing the historical financial or operational results of the subject entity or intellectual property;
2. selecting comparable (or guideline or benchmark) companies, transactions, or licenses;
3. adjusting/normalizing the historical financial or operational results of the comparable companies, transactions, or licenses;
4. selecting the adjusted pricing multiples that were extracted from the comparable companies, transactions, or licenses; and
5. applying the selected market-derived pricing multiples to the subject entity or intellectual property.

In the asset-based approach to business valuation, the functional analysis will inform the analyst with regard to:

1. the valuation of tangible assets;
2. the existence of identifiable intangible assets;
3. the applicable valuation variables (including useful economic life) to apply to the identifiable intangible assets;
4. the capitalized excess earnings method valuation of goodwill; and

5. the valuation of liabilities—and, particularly, contingent liabilities.

In the cost approach to intellectual property valuation, the functional analysis will inform the analyst with regard to:

1. the measurement of the intellectual property useful economic life,
2. the identification and measurement of the intellectual property functional obsolescence (including the technological obsolescence component),
3. the identification and measurement of the intellectual property economic obsolescence,
4. the normalization of the property owner/operator's financial and operational metrics—particularly with regard to the intellectual property, and
5. the selection of the valuation variables to perform the capitalization of income loss method to measure the intellectual property economic obsolescence.

The functional analysis has applications to all of the generally accepted business valuation approaches and intellectual property valuation approaches.

THE FUNCTIONAL ANALYSIS IMPACT ON THE INTELLECTUAL PROPERTY DAMAGES MEASUREMENT

Analysts may be asked to identify and measure damages related to intellectual property. These damages are often caused by a wrongful action. The wrongful action often relates to:

1. a breach of a license, development agreement, commercialization agreement, or some other type of contractual agreement or
2. a tortious action—such as an infringement or the breach of some type of duty.

The contract could include any type of use license, development license, manufacturing license, nondisclosure agreement, noncompetition agreement, or other commercial contract. In addition to an infringement, the tort could include a breach of a trustee's, or a lender's, or some other party's fiduciary duty.

In the measurement of the intellectual property damages, the analyst may apply the following generally accepted damages measurement methods:

1. Lost profits
2. Reasonable royalty rate
3. Cost to cure (including lost business value or lost intellectual property value)

The functional analysis informs the analyst throughout the damages measurement assignments.

First, the functional analysis helps the analyst identify the component of the owner/operator entity or the intellectual property that was damaged.

The functional analysis may not identify the damages event or the party who conducted the wrongful action. But, the functional analysis should help to identify:

1. what owner/operator entity and/or intellectual property functions were damaged;
2. the relative importance of those damaged functions to the owner/operator entity and/or intellectual property; and
3. the value creation due to the functions—or, in this case, the value destruction due to any damage to those functions.

Second, the functional analysis may help the analyst to identify the normal financial or operational variables of the owner/operator on the intellectual property. That is, the functional analysis may help to identify the owner/operator entity or the intellectual property metrics “before” or “without” the damages event.

The analyst may compare those normal financial or operational variables to the owner/operator entity or the intellectual property current metrics—that is, “after” or “with” the damages event. The differences in these metrics before and after (or without and with) damages is one measure of lost profits.

The functional analysis may help the analyst to develop (and to test the reasonableness of) any damages projection variables—including revenue, expenses (fixed and variable), investments, and other prospective financial variables.

Third, the functional analysis may help to identify:

1. when the damages impact started (i.e., the beginning of the damages period),
2. the term of the damages period, and
3. when the damages impact ended—if it did end (i.e., the end of the damages period).

Fourth, the functional analysis may help the analyst to identify and measure the impact of any mitigation efforts in response to the damages event.

Fifth, the functional analysis may help the analyst to identify, compare, normalize, select, and apply arm's-length license agreement royalty rates in a reasonable royalty rate damages analysis.

Sixth, the functional analysis may help the analyst to identify the costs to cure the impact of the damages event. This is because such an analysis may identify the particular owner/operator entity/intellectual property functions that were damaged—to allow the analyst to estimate the cost to cure (i.e., repair) the damaged function.

Seventh, the functional analysis may inform the analyst regarding the selection of the historical valuation variables to develop the “before” business or intellectual property valuation. The current (post-damages event) application of the functional analysis may inform the analyst's selection of the post-damages valuation variables to develop the “after” business or intellectual property valuation.

The difference in the “before” value and the “after” value is one indication of the lost business value or the lost intellectual property value.

The development of the functional analysis may also help the analyst to identify all of the subject entity's operational components and intellectual property that were impacted by the damages event. The performance of the functional analysis may help the analyst to quantify the lost profits, reasonable royalty rate, or cost to cure related to the business or the intellectual property damages.

THE FUNCTIONAL ANALYSIS IMPACT ON THE INTELLECTUAL PROPERTY TRANSFER PRICE DETERMINATION

A functional analysis is an important procedure in an intercompany transfer price analysis. The transfer price analysis helps the analyst to identify the value chain. A value chain separates a business into a series of value-generating functions.

This value chain helps provide the analyst with a foundation from which to identify:

1. the functions performed,
2. the assets employed, and
3. the risks assumed.

This foundation helps the analyst to understand the activities that create value in the owner/operator entity or the intellectual property.

Regulation 1.482-1 provides an introduction to the allocation of income and deductions among taxpayers. Regulation 1.482-1(d)(3)(i) describes a functional analysis within the context of the factors for determining the comparability of transactions.

Regulation 1.482-2 includes guidance related to the determination of taxable income in specific situations. These specific situations include:

1. loans or advances,
2. the performance of services for another,
3. the use of tangible property, and
4. the transfer of property.

Regulation 1.482-3 describes the methods to determine taxable income with a transfer of tangible property. These methods for determining an arm's-length transfer price with regard to tangible property include:

1. the comparable uncontrolled price method,
2. the resale price method,
3. the cost plus method, and
4. unspecified methods.

Regulation 1.482-3(c)(3)(ii)(A) discusses functional comparability with regard to the resale price method. Specifically, this regulation section deals with comparability and reliability considerations within the application of the resale price method.

Regulation 1.482-3(d)(3)(ii)(A) discusses functional comparability with regard to the cost plus method. Specifically, this regulation section deals with comparability and reliability consideration within the application of the cost plus method.

Regulation 1.482-4 describes the methods to determine taxable income with regard to the transfer of intangible property.

First, as mentioned above, this regulation provides a description of what intangible property is. Second, this regulation describes the following methods for determining an arm's-length transfer price with regard to intangible property:

1. Comparable uncontrolled transaction method
2. Unspecified methods

Regulation 1.482-5 describes the comparable profits method. Specifically, Regulation 1.482-5(c)(2)(ii) discusses functional, risk, and resources comparability. This regulation section presents these factors within the context of comparability and reliability considerations in the application of the comparable profits method.

Regulation 1.482-6 describes the application of the profit split method. This regulation provides guidance with regard to:

1. the comparable profit split method and
2. the residual profit split method.

Regulation 1.482-7 relates to cost sharing arrangements. Regulation 1.482-8 provides examples of the application of the best method rule.

Regulation 1.482-9 relates to the determination of an arm's-length transfer price related to controlled services transactions. Regulation 1.482-9(d)(3)(ii)(A) describes functional comparability. This regulation discusses comparability and reliability considerations within the context of the application of the gross services margin method.

Regulation 1.482-9(c)(3)(ii)(A) also describes functional comparability. This regulation discusses comparability and reliability considerations within the context of the application of the cost of services plus method.

In all cases, the regulations discuss the functional analysis within the context of assessing—and adjusting for—comparability. These assessments—and adjustments—are made:

1. to the subject entity or the subject intellectual property or
2. between the related (or associated) parties to the controlled transaction.

These assessments and adjustments are based on:

1. the relative contribution of the various functions performed,
2. the assets (both tangible and intangible) used to perform these functions, and
3. the risks assumed by the subject entity or the related parties.

A 12-STEP PROGRAM FOR THE INTELLECTUAL PROPERTY FUNCTIONAL ANALYSIS

There are many considerations related to the development of a functional analysis. These many considerations are equally relevant whether the functional analysis is developed for intellectual property valuation, damages, or transfer price purposes.

Exhibit 1 is intended to only present a partial listing of typical analyst considerations. Exhibit 1 does not present a comprehensive list of all considerations.

All of the considerations or procedures may be categorized into what this discussion refers to as the 12-step program for an intellectual property functional analysis.

The 12-step program does not necessarily have to be performed in the order or sequence presented below. However, the following listing of steps is presented in a logical sequence. Some of the steps may be performed simultaneously. Some of the steps may be performed out of order.

This discussion recommends that the entity of the 12-step program should be developed, to a greater or lesser extent, before the functional analysis is considered to be complete.

It is important to recognize that each so-called “step” represents a category or grouping of many procedures and investigations. These categories of procedures are called “steps” to remind the analyst to proceed from the initial understanding of the subject entity to the final assessment of the risks assumed by that subject entity.

After completing the 12-step program, the analyst should have developed—and documented—an understanding of the owner/operator entity's functions performed, assets employed, and risks assumed.

These 12 steps—or categories or groupings of analyst procedures—are listed in Exhibit 2.

The first 10 steps in Exhibit 2 primarily relate to the functions performed at the owner/operator entity. Step 11 in Exhibit 2 primarily relates to the assets employed at the owner/operator entity. And, step 12 in Exhibit 2 primarily relates to the risks assumed by the owner/operator entity.

For purposes of this discussion and for purposes of applying Exhibit 2, the phrase the “owner/operator entity” encompasses an individual owner/operator entity, the intangible property of such an entity, or two related parties performing associated functions (and controlled transactions) as part of a common ownership entity.

THE TYPE OF SPECIALIST APPROPRIATE TO CONDUCT THE FUNCTIONAL ANALYSIS

There is no specific guidance or limitation as to what type of professional should develop the functional analysis. Similarly, there is no specific guidance or limitation as to what type of professional should develop an intellectual property valuation analysis, damages measurement, or transfer price determination.

Some observers refer to the functional analysis as an economic analysis. It is true that the functional analysis includes the consideration of the inputs and the outputs of the owner/operator entity. Similarly, the functional analysis includes the consideration of the cost/volume/profit relationships of the owner/operator entity.

These considerations involve the application of microeconomics principles. By that general definition, all valuation, damages, and transfer price analyses involve the application of microeconomics principles.

The *Internal Revenue Manual* doesn't address the question of what type of professional should perform the functional analysis. The *Internal Revenue Manual* does provide perspective on the various types of professionals who may be involved in the transfer price analysis related to intangible property.

Section 4.61.3.4.6 of the *Internal Revenue Manual* relates to "Transfers of Intangible Property" and provides the following perspective related to intangible property comparable uncontrolled transactions and arm's-length license royalty rate analyses:

7. Determining arm's length royalty amounts for controlled transfers of intangibles may require the support of the following specialists:

- a. Economists
- b. Engineers
- c. Industry experts
- d. Experts in the field of licensing intangibles
- e. Marketing experts
- f. Other inside and outside experts

The fact that economists are mentioned first in the above listing may be one reason why some observers associate economists with intercompany transfer price analyses. While the above list specifically relates to intangible property transfer prices, it is reasonable to conclude that any of the above-mentioned categories of professionals could perform a functional analysis.

In addition to the *Internal Revenue Manual* listing of types of professionals, accountants—and particularly forensic accountants—have particular experience and expertise with regard to all three disciplines of valuation, damages measurement, and transfer price determination.

All of these disciplines require expertise in GAAP, income tax accounting principles, accounting systems and procedures, and the analysis of financial statements and other financial documents.

In addition, most forensic accountants have a breadth and depth of experience related to business

operations, data gathering and special investigations, and due diligence procedures and associated documentation.

Although not specifically mentioned in the *Internal Revenue Manual*, valuation analysts have specialized training and experience that would qualify them to perform the functional analysis.

Valuation analysts routinely apply microeconomics principles. Valuation analysts have to understand both GAAP accounting and income tax accounting. And, most valuation analysts are skilled at data gathering, interviewing and investigative techniques, and due diligence procedures. Most importantly, valuation analysts have to develop both broad and deep skills with regard to performing, interpreting, and applying comparability analyses.

That is, most valuation analysts are experienced with regard to identifying, adjusting, normalizing, extracting pricing data from, and applying pricing multiples derived from comparables. Such comparables could include comparable companies and comparable intangible property. The comparable transactions could include sales, leases, licenses, or other types of transfers.

Valuation analysts have experience and expertise in assessing and adjusting for comparability—a fundamental component of the functional analysis.

Like certified public accountants, valuation analysts pursue specialized training based on a standardized body of knowledge, are tested and credentialed based on that standardized body of knowledge, maintain continuing professional education requirements, and comply with documented ethics standards and other professional standards.

Many of the other types of professionals included in the above *Internal Revenue Manual* list do not meet these various qualifications.

Overall, and more important than a particular professional credential or academic benchmark, the appropriate type of professional to perform the functional analysis is a professional who understands how that functional analysis can be applied in the development of the intellectual property value conclusion, damages measurement, or transfer price determination.

DOCUMENTATION OF THE INTELLECTUAL PROPERTY FUNCTIONAL ANALYSIS

As with the type of professional who performs the functional analysis, there is no specific guidance or

requirement related to the documentation of the functional analysis.

The following recommendations are presented as best practices (and not as professional standards or professional organization requirements) related to functional analysis within the context of an intellectual property valuation or damages measurement or transfer price analysis.

This best practices guidance assumes that the analyst prepares some type of written or oral report to document the development of—and the conclusion of—the intellectual property analysis.

As a general best practice, both the analyst's work papers and the analyst's report (whether for an intellectual property valuation or damages or transfer price) should include documentation of:

1. the selection of—and the rejection of—all relevant considerations and steps—and the reasons for that selection and/or rejection;
2. the data gathering process applied with regard to all of the selected considerations;
3. the selection of (and the rejection of—and the reasons therefor) all data sources;
4. all documents generally that were considered and all documents that were specifically relied on in the functional analysis, including a listing and description of the source of each document; copies of all of the documents relied on by the analyst should be included in the work paper file;
5. all due diligence procedures performed (including the conduct of any owner/operator entity management interviews or any third-party interviews);
6. the schedules and exhibits prepared to summarize all of the quantitative comparability and other analyses performed;
7. the analyst's assessment of each consideration developed—documented with a commentary, description, flowchart, or other explanation;
8. the analyst's conclusion related to each of the 12 steps (or the 12 categories of procedures)—documented with a commentary, description, flowchart, or other explanation;
9. each of the qualitative or quantitative factors leading up to the analyst's conclusions regarding these functional analysis components, such as:
 - a. the functions performed by the owner/operator entity—and the relative importance thereof,

- b. the assets employed by the owner/operator entity—both tangible assets and intangible assets, and
 - c. the risks assumed with regard to the owner/operator entity's operations.;
10. a narrative summary and conclusion describing the analyst's functional analysis opinion, including a conclusory discussion of (a) functions performed, (b) assets employed, and (c) risks assumed.

Also as a general best practice, analysts may become familiar with the analysis documentation and reporting procedures described in:

1. the *Mandatory Performance Framework* (“MPF”) and
2. the *Application of the Mandatory Performance Framework* (“AMPF”).

These MPF and AMPF best practices documentation guidelines were developed for the Certified in Entity and Intangibles Valuation (“CEIV”) professional credential program developed by the Corporate and Intangibles Valuation Organization, LLC. These best practices guidelines are only “mandatory” for CEIV credential holders when they are performing fair value measurement valuations.

While not mandatory for non-CEIV analysts, these guidelines do provide “best practices” guidance with regard to the analysis documentation and reporting. Such best practices guidance with regard to the functional analysis may also be applied generally to all aspects of the intellectual property valuation, damages, or transfer price analysis.

There are various checklists available with regard to the performance of a functional analysis—particularly within the context of an intercompany transfer price determination. For example, the *Internal Revenue Manual* includes a “Transfer Pricing Functional Analysis Questionnaire” as Exhibit 4.61.3-4 of the manual.

The use of such a checklist is a convenient resource for the analyst, particularly for purposes of completing a functional analysis for purposes of Section 482 compliance.

Any checklist or questionnaire only documents what the analyst did—that is, the procedures the analyst performed. While such a listing of procedures performed is an important component of the functional analysis documentation, it does not provide a complete set of the functional analysis documentation.

The work papers and the report should not only describe the procedures that the analyst performed—but also what conclusions the analyst developed after performing those procedures. In other words, the work papers and the report should document the analyst’s thought process and rationale.

Ideally, the functional analysis work papers and report should be sufficient to allow another analyst (or the report reader) to:

1. replicate the data gathered, the procedures performed, and the considerations made;
2. duplicate the analyst’s thought process and decision-making; and
3. recreate the analyst’s opinions and conclusions.

A well-documented set of work papers and a well-documented report (written or oral) will accomplish these objectives related to the functional analysis. These documentation objectives apply equally to the intellectual property valuation analysis, damages measurement, or transfer price analysis.

SUMMARY AND CONCLUSION

Intellectual property owners/operators (and their legal counsel) often need advice regarding the value of, the damages suffered by, or the transfer price for an intellectual property. These issues arise in the context of sale or licensing transactions, taxation planning and compliance, financial accounting, financing collateralization, strategic planning, breach of contract and tort litigation, and other reasons.

Intellectual property owner/operators (and their legal counsel) often retain, work with, and rely upon specialists to perform these valuation, damages, or transfer price analyses.

There are separate sets of generally accepted approaches, methods, and procedures related to the development, documentation, and reporting of these various analyses. However, there is one procedure that is a component of all three types of intellectual property analyses: the functional analysis.

This discussion focused on the conduct of the functional analysis with respect to intellectual property—and to the various associated categories of intangible property.

A functional analysis is also relevant any time the analyst needs to thoroughly understand the owner/operator entity—and particularly to understand the value drivers that impact the owner/operator entity.

A functional analysis is relevant when the analyst needs to understand:

1. both the various functions that are performed at the owner/operator entity and the relative importance of these functions;
2. the various assets employed at the owner/operator entity—including the working capital assets, the tangible assets, and the intangible assets; and
3. the various risks assumed by the owner/operator entity’s operations—including operational risks, financial risks, dependence risks, litigation risks, and other risks.

“A functional analysis is relevant any time the analyst needs to thoroughly understand the owner/operator entity—and particularly to understand the value drivers that impact the owner/operator entity.”

All of these factors are important to any analyst performing an intellectual property valuation, damages measurement, or transfer price analysis.

This discussion considered what is (and what is not) a functional analysis, and this discussion considered the reasons to perform the functional analysis.

This discussion summarized the applications of a functional analysis within an intellectual property valuation, damages, or transfer price determination. And, this discussion summarized the many considerations typically made by the analyst into what was called the 12-step program for conducting the functional analysis.

Finally, this discussion considered the various types (or categories) of professionals who may be involved in developing the functional analysis. And, this discussion described documentation guidelines related to the functional analysis. These documentation guidelines relate to both the analyst’s work papers and the analyst’s report—both written and oral.

This discussion summarized what intellectual property owners/operators—and their legal counsel—need to know about the functional analysis within the context of an intellectual property valuation, damages, or transfer price analysis.

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Exhibit 1

Functional Analysis Considerations Related to an Intellectual Property Valuation, Damages, or Transfer Price Analysis

1. OWNER/OPERATOR ENTITY ORGANIZATION CONSIDERATIONS

A. Type of owner/operator entity

1. Description of whether the analysis subject is the owner/operator entity or the intellectual property
2. Description and documentation of ownership of the owner/operator entity
3. Description of legal structure of the owner/operator entity
4. Description of tax structure of the owner/operator entity
5. Description of any ownership relationships with related parties, applicable parties, or other common ownership
6. Description of corporate governance (e.g., board of directors)
7. Description of operational executive or management structure (e.g., management organization chart)
8. Description of operational functions structure (e.g., departmental organization chart)
9. Description and locations of owned tangible property
10. Description and locations of leased tangible property
11. Description of owned or licensed patents
12. Description of owned or licensed trademarks
13. Description of owned or licensed copyrights
14. Description of owned or licensed trade secrets
15. Description of owned or licensed other types of intangible property
16. Description of owned or licensed intangible value in the nature of goodwill

B. Owner/operator entity documents

1. Organization documents (e.g., articles of the corporation)
2. Operational documents (e.g., partnership agreements, member agreements)
3. Owner/operator entity ownership documents (e.g., shareholder agreements, buy/sell agreements)
4. Asset ownership documents (e.g., deeds, legal descriptions, licenses, leases)
5. Owner/operator entity transferability documents (e.g., franchise agreement restrictions, regulated industry considerations)
6. Ownership interest transferability considerations (e.g., security puts and calls)
7. Recent board of directors or executive/management committee minutes
8. Copies of any owner/operator entity's business or operating permits or certificates
9. Copies of any inbound or outbound intellectual property licenses
10. Copies of any joint venture, joint development, joint commercialization, etc., agreements
11. List of registrations of all intellectual property, including domestic and international patents, copyrights, and trademarks
12. Copies of documents that illustrate the owner/operator entity's use of domestic and international patents, copyrights, trademarks, and trade names
13. Copies of documents that illustrate the owner/operator entity's use of other types of intangible property
14. Copies of documents that illustrate the owner/operator entity's use of intangible value in the nature of goodwill

2. OWNER/OPERATOR ENTITY OPERATIONS CONSIDERATIONS

A. Operational functions

1. Description of the products produced and the services provided
2. Description of how the products and the services are designed, developed, or engineered

Exhibit 1 (cont.)

Functional Analysis Considerations Related to an Intellectual Property Valuation, Damages, or Transfer Price Analysis

3. Description of raw materials inputs (sources, costs, and logistics of supply and supply chain risks)
4. Description of labor inputs (sources, costs, and logistics of supply and supply chain risks)
5. Description of overhead (operating expense inputs) (sources, costs, and logistics of supply and supply chain risks)
6. Description of the product manufacturing or services production process
7. Description of production scheduling and quality control procedures
8. Description of product warehousing and in-process services storage
9. Description of product warranty and product return risk elements
10. Description of products and services shipping and delivery logistics
11. Description of how the intellectual property (patents, copyrights, trademarks, and trade secrets) are developed, documented, and registered
12. Description of how the intellectual property (patents, copyrights, trademarks, and trade secrets) are commercialized and protected
13. Description of how other types of intangible property are commercialized and protected
14. Description of how intangible value in the nature of goodwill is commercialized and protected

B. Administrative functions

1. Description of the owner/operator entity accounting functions
2. Description of the owner/operator entity receivables/cash collection function and payables/cash disbursements function
3. Description of the owner/operator entity treasury (cash management and banking relationship) function
4. Description of the owner/operator entity capitalization, capital structure, and financing function
5. Description of products/services design and engineering function
6. Description of production engineering/services delivery efficiency function
7. Description of advertising and market research function
8. Description of packaging and branding function
9. Description of human resources, recruiting, training, and benefits function
10. Description of general counsel function
11. Description of information technology, management information, and data processing function
12. Description of regulatory compliance and other compliance function

C. Competition and competitive position functions

1. Listing and description of the owner/operator entity principal competitors
2. Approximate size of the owner/operator entity principal competitors
3. Ranking of the owner/operator entity principal competitors by market share and by relative market share
4. Products/services features differentiation with competitors
5. Products/services pricing differentiation with competitors
6. Products/services distribution differentiation with competitors
7. Products/services that the intellectual property owner/operator differentiates with competitors
8. Description of total market size
9. Description of total market growth rate
10. Description of how customers use the owner/operator entity's products/services

D. Risk/expected return considerations

1. Description of any materials source of supply risk

Exhibit 1 (cont.)
Functional Analysis Considerations Related to an
Intellectual Property Valuation, Damages, or Transfer Price Analysis

2. Description of any labor source and supply risk
3. Description of operating leverage (fixed costs coverage) risk
4. Description of financing leverage (debt service coverage) risk
5. Description of tangible property risk
6. Description of environmental risk
7. Description of litigation risk
8. Description of intellectual property risk
9. Description of customer concentration risk
10. Description of executive concentration risk
11. Description of regulatory change risk
12. Description of products/services liability risk

3. OWNER/OPERATOR ENTITY FINANCIAL CONSIDERATIONS

A. Accounting principles and financial statements

1. Descriptions of owner/operator entity current accounting principles applied
2. Comparison of owner/operator entity accounting principles to competitor accounting principles
3. Description of recent changes in accounting principles applied
4. Discussion of revenue recognition principles
5. Discussion of expense recognition principles
6. Discussion of taxation accrual and deferred tax principles
7. Discussion of tangible asset capitalization and depreciation principles
8. Discussion of intangible asset recognition principles
9. Discussion of liability recognition principles
10. Discussion of any adjustments to capital accounts
11. Discussion of cash flow statement working capital adjustments
12. Discussion of cash flow statement noncash revenue and expense account
13. Discussion of cash flow statement investment adjustments
14. Discussion of cash flow statement financing adjustments

B. Financial statement projection considerations

1. Description of the term (time period) of any owner/operator entity financial projections
2. Description of the level of detail included in any owner/operator entity financial projections
3. Description of financial projections internal development procedures
4. Description of financial projections internal review procedures
5. Comparison of financial projections to historical financial statements
6. Comparison of financial projections to guideline company financial projections
7. Comparison of financial projections to industry financial projections
8. Comparison of historical financial projections to historical financial statements for prior projection periods
9. Copies of any owner/operator entity strategic plans or competitive analyses
10. Copies of any debt service payment projections (including any considerations of liquidity or solvency)

C. Valuation considerations

1. Description of the process for selecting guideline public companies
2. Procedures for assessing the owner/operator entity's comparability to selected guideline public companies

Exhibit 1 (cont.)

Functional Analysis Considerations Related to an Intellectual Property Valuation, Damages, or Transfer Price Analysis

3. Procedures for adjusting the financial data of guideline public companies
4. Description of the process for selecting guideline merger and acquisition (“M&A”) transactions
5. Procedures for assessing the owner/operator entity’s comparability to selected guideline M&A transactions
6. Procedures for adjusting the financial data of selected guideline M&A transactions
7. Description of any recent offers to buy the owner/operator entity or the entity’s securities
8. Description of any recent sales (or other exchanges) of the owner/operator entity or the entity’s securities
9. Descriptions of any value indications (including historical development costs) of tangible real property and tangible personal property
10. Descriptions of any value indications (including historical development costs) of intellectual property or associated intangible property

4. OWNER/OPERATOR ENTITY ASSETS EMPLOYED AND SWOT/RISKS ASSUMED CONSIDERATIONS

A. Assets employed

1. Description of—and use of—cash and marketable securities
2. Description of—and use of—accounts receivable
3. Description of—and use of—prepaid expenses
4. Description of—and use of—inventory accounts
5. Description of—and use of—other current asset accounts
6. Description of—and use of—land and buildings
7. Description of—and use of—tangible personal property
8. Description of—and use of—other tangible assets
9. Description of—and use of—intellectual property assets
10. Description of—and use of—other identifiable intangible assets
11. Description of—and use of—intangible value in the nature of goodwill
12. Description of—and use of—nonoperating or investment assets
13. Description of—and use of—current liabilities
14. Description of—and use of—long-term interest-bearing debt
15. Description of—and use of—other long-term liabilities
16. Description of—and use of—contingent liabilities

B. SWOT and risks assumed considerations

1. List of the owner/operator entity’s principal competitive strengths
2. Description of how competitive strengths affect the owner/operator entity’s operating results
3. Description of how competitive strengths affect the owner/operator entity’s risks
4. List of the owner/operator entity’s principal competitive weaknesses
5. Description of how competitive weaknesses affect the owner/operator entity’s operating results
6. Description of how competitive weaknesses affect the owner/operator entity’s risks
7. List of the owner/operator entity’s principal competitive opportunities
8. Description of how competitive opportunities affect the owner/operator entity’s operating results
9. Description of how competitive opportunities affect the owner/operator entity’s risks
10. List of the owner/operator entity’s principal competitive threats
11. Description of how the principal competitive threats affect the owner/operator entity’s operating results
12. Description of how the principal competitive threats affect the owner/operator entity’s risks

Exhibit 2

12-Step Program for the Development of a Functional Analysis Related to an Intellectual Property Valuation, Damages, or Transfer Price Conclusion

1. Gather and review all relevant owner/operator entity legal documents
(This step includes documents regarding organization structure, legal firm, tax status, and owners—e.g., shareholder, partnership, LLC member—agreements.)
2. Gather and review all relevant owner/operator entity organization charts
(This step includes both personnel reporting charts and functional relationship clients and considers both entity governance procedures and quality, quantity, tenure, and experience of entity/function leaders.)
3. Understand and document the products/services design, R&D, and products/services differentiation functions
(This step includes the assessment of how the owner/operator entity's products or services are developed and how these products or services are intended to address their competition in the relevant marketplace.)
4. Understand and document the materials, labor, and overhead procurement function
(This step includes consideration of how and when the owner/operator entity procures all of its materials, labor, and overhead inputs—for owner/operator entities in every type of industry or profession.)
5. Understand and document the products/services production function
(This step includes the assessment of how the owner/operator entity processes all of its material, labor, and overhead components to produce a product or a service—including the quality control of the product or service production.)
6. Understand and document the owner/operator entity's inventory and products/services storage function
(This step includes both the in-process and finished inventory of goods and the in-process and finished inventory of services.)
7. Understand and document the owner/operator entity's sales and marketing function
(This step includes the assessment of the products or services pricing, packaging, advertising, promotional, trademark development and protection, and other branding—on a stand-alone basis and in response to competitive products and services.)
8. Understand and document the owner/operator entity's shipping and distribution logistics function
(This step includes consideration of how the products or services are delivered to the customer or the client—including freight, insurance, returns, warranty and repairs, and other expenses.)
9. Understand and document the owner/operator entity's accounting, finance, information systems, human resources, legal, and other administration functions
(This step includes the assessment of how (a) information is generated and used throughout the organization, (b) human resources are developed and administered, (c) financial statements and operational documents are prepared and used, (d) how cash management and treasury operations are performed, and (e) how the entity is capitalized with debt and equity capital sources.)
10. Assess and document the owner/operator entity's strategic position in comparison to competitors in the relevant industry or profession
(This step includes (a) measurement of the owner/operator entity's market share/selective market share, market size, and market growth rate; (b) evaluation of the owner/operator entity's customer or client needs; and (c) assessment of the entity's competitive strengths, weaknesses, opportunities, and threats.)
11. Describe and document the assets used by the owner/operator entity to perform the functions
(This step includes a listing, description, and assessment of relative importance/contribution of (a) all working capital accounts, (b) all tangible property types and accounts—owned and leased, (c) all general intangible property types and accounts—owned and licensed, and (d) all intellectual property types and accounts—owned and licensed.)
12. Evaluate and document the risks assumed by the owner/operator entity to perform the functions
(This step includes a listing, description, and assessment of all products/services liability, operating language, financial leverage, environmental, supply dependence, customer dependence, technology dependence, employee dependence, intellectual property dependence, tax litigation, commercial litigation, credit and collection, inventory control, property and casualty, foreign exchange, market/competitor, and other risks.)

Thought Leadership Discussion

Planning and Structuring Considerations in the Acquisition of a Tax Loss Target Company

Robert F. Reilly, CPA

Valuation analysts—and other financial advisers—are often retained to advise acquisitive clients with regard to proposed merger and acquisition (“M&A”) transactions. While such valuation analysts typically focus on the pricing and structuring of the proposed M&A transaction, these analysts are expected to work with the acquirer’s accounting, taxation, legal, and other professional advisers. Accordingly, such valuation analysts should at least be generally aware of some of the taxation considerations with regard to the proposed M&A transaction. When one of the transaction participants involves a loss corporation (or a target company with certain other tax attributes), the Internal Revenue Service (the “Service”) may allege that the principal purpose of the proposed transaction is to evade or avoid income taxes. Of course, the target entity’s tax attributes cannot be ignored in the consideration of the proposed M&A transaction. However, the target entity’s tax attributes should not be the principal reason for the transaction. The valuation analyst can assist the acquirer to defend against any Service challenge of the tax motivations for the proposed transaction. That is, the valuation analyst can assist the acquirer to understand—and to document—the non-taxation-related economic benefits that are the primary reasons for—and the primary value drivers of—the proposed M&A transaction.

INTRODUCTION

Merger and acquisition (“M&A”) activity continues at a brisk pace in many industries throughout the U.S. economy. This generally positive trend in M&A activity continues despite general concerns about COVID-19 as a national health issue and despite the negative impact of the pandemic on the national economy.

The typical motives for M&A transactions in most industries remain the same regardless of the pandemic, including:

1. the economies of scale and of size related to the combined entity;
2. synergies other than those related to economies of scale, such as cross-selling into the preexisting customer bases of the acquirer and the target;
3. the elimination of a competitor (due to the consolidation) resulting in geographic concentration;
4. the combination of different industry segment participants into a more diversified combined company;



5. the ability of the acquirer to “buy” (acquire) business functions and capabilities at a lower cost than the cost to “make” (internally develop) those business functions and capabilities; and
6. the availability of otherwise successful target companies that do not have other management/ownership succession options available to them.

Any combination of these post-M&A transaction economic benefit factors could lead to:

1. the identification of an acquisition target company,
2. the negotiation and consummation of a successful M&A transaction, and
3. the creation of an integrated combined entity that is experiencing post-merger synergies, economies of scale, and other combined entity value enhancements.

Throughout the COVID-19 pandemic, many companies in many industry segments have been quite successful. These companies have experienced increased revenue and increased profitability—and increased taxable income. Such financially successful companies can be attractive M&A target companies, but not the only attractive targets.

During the pandemic, while some companies prospered, other companies experienced operational issues, decreased revenue, negative profitability, and financial distress. Pressures on sales

and profitability have resulted in tax-related net operating losses (“NOL”).

Certain tax-related attributes—including the NOL carryforwards—of these financially distressed companies, in addition to their other attributes, may be desirable to suitors for a business combination. In fact, the tax attributes of the “loss” companies may increase their attractiveness—and may even enhance their acquisition value—to financially successful acquisitive companies.

Corporate acquirers—and their valuation, taxation, and other professional advisers—should be careful when pricing and structuring the potential acquisition of M&A target corporations with NOL and certain

other income tax attributes.

Of course, the income tax attributes of such a loss target company are a consideration in any M&A transaction, just as they are a component of the value of any potential target company. However, the acquisition of the target company income tax benefits should not be the only—or even the primary—value driver in (or purpose of) the potential M&A transaction.

The Internal Revenue Service (“Service”) may disallow the acquirer’s use of the target company’s NOL carryforward—or other income tax attributes—if it concludes that the M&A transaction was justified solely based on the value of such tax attributes. Corporate acquirers should consider this risk with regard to the pricing and structuring of an M&A transaction involving a financially distressed target company.

This discussion summarizes the factors that acquirers—and their valuation, income tax, and other professional advisers—should consider when structuring an M&A transaction that involves a target corporation with such income tax attributes.

SECTION 269 AND THE TAX LOSS TARGET CORPORATION

The Internal Revenue Service (the “Service”) often applies Internal Revenue Code Section 269 as the justification for disallowing tax attributes related to an M&A transaction that it decides was intended to evade or to avoid income tax. While

the NOL of a target corporation can be used (with restrictions) to reduce the taxable income of the acquirer, the Service will carefully scrutinize any M&A transaction that appears to have been primarily motivated by tax avoidance.

First, the M&A transaction should be structured in a way that renders it an economically justified transaction, in order to prevent the Service from disallowing the use of the target corporation's tax attributes.

Second, the acquirer should expect that the Service will limit the annual amount of any target company NOL benefits—through the application of Section 382. Section 382 restricts the combined entity's use of the target company's NOL carryforwards (and certain built-in losses) following a loss corporation ownership change transaction.

In addition, if the Service believes that the primary motive for the M&A transaction was tax-related, then it may apply a number of other statutory provisions in order to restrict the transaction's income tax benefits. Such statutory provisions are intended to disallow—or to recharacterize—the target corporation's losses and other income tax attributes.

ACQUISITIONS PRINCIPALLY INTENDED TO AVOID OR TO EVADE INCOME TAX

Section 269(a) provides the Service with the authority to disallow a deduction, a credit, or any other income tax benefit. The Service may disallow these income tax benefits if the benefits are obtained by a taxpayer (either a corporation or a person) that acquires control of a corporation for the principal purpose of avoiding or evading federal income tax.

The statutory language of Section 269 provides a specific definition of “control.” For purposes of Section 269, “control” means the ownership of the corporation stock possessing either:

1. 50 percent of the combined total voting rights of all classes of stock that are entitled to vote or
2. at least 50 percent of the total value of the shares of all classes of stock.

For this purpose, control may be acquired directly or indirectly. The direct acquisition of control typically occurs through a target company stock

purchase or exchange. An indirect acquisition of control may occur, for example, if the taxpayer corporation itself redeems the shares of certain shareholders. That is because such a corporate stock redemption could leave a remaining shareholder with a controlling ownership interest.

Acquiring control of the tax benefit corporation must occur in order for the Service to apply the Section 269 provisions. One example where a court rejected the Service's application of Section 269 is *Jackson Oldsmobile, Inc.*¹

In that judicial decision, the Fifth Circuit upheld the trial court's ruling that there was an acquisition of nonvoting stock that represented less than 50 percent of the corporation's value. The Fifth Circuit reached this conclusion because one shareholder had owned 100 percent of the corporation's voting stock—both before and after the acquisition of the nonvoting stock.

It is noteworthy that voting stock ownership is not the only factor that the Service examines to determine who has voting control of the target corporation. Of course, the percentage of voting common stock owned by the acquirer (either an individual or a corporation) is the first factor that the Service considers. However, sometimes other factors also bear on who, actually, has operational control of the target corporation.

This issue (of de facto control versus voting stock ownership) was an important consideration in the Court of Federal Claims decision in *Hermes Consol. Inc.*²

In *Hermes*, the Court of Federal Claims decision states “the ultimate expression of voting power is the ability to approve or disapprove of fundamental changes in the corporate structure, and the ability to elect the corporation's board of directors.”

In addition, an acquirer (either an individual or a corporation) cannot transfer control from itself to itself. That is, for purposes of applying Section 269, the Service may not recognize an “acquisition” when the taxpayer simply revives its own dormant subsidiary corporation.

This no-control-transfer result will occur even if the taxpayer uses the subsidiary corporation for a new purpose. This is because the ownership (and operational) control of the target corporation did not change hands.

An example of this situation occurred in the Tax Court decision *The Challenger, Inc.*³ In that judicial decision, the Tax Court explained that control must be both relinquished and then reestablished in order for there to be a change of control.

DEFINITION OF TAX AVOIDANCE AS THE PRINCIPAL TRANSACTION PURPOSE

Treasury Regulation 1.269-3(a) provides an explanation of the “principal purpose” requirement with respect to the proposed transaction. That is, tax avoidance becomes the principal purpose of the transaction if it “exceeds in importance any other purpose.”

This regulation language doesn’t mean that tax avoidance has to be the only purpose of (or economic justification for) the M&A transaction. But, according to this Section 269 regulation, tax avoidance does have to be the principal (or the primary) purpose of the M&A transaction.

In a taxpayer-friendly interpretation, some courts have interpreted “principal” purpose to mean that tax avoidance has to be more of a motive (purpose) to the acquisition than all other motives combined.

That is, under such an interpretation, the tax avoidance purpose does not just have to be the single most important purpose. It has to be more important than the summation of all other transaction motivation purposes. For example, see the Court of Federal Claims decision in *U.S. Shelter Corp.*⁴ and the Fifth Circuit decision in *Bobsee Corp.*⁵

Of course, there are numerous strategic and economic justifications for creating a new combined entity through an M&A transaction. These reasons include limiting the entity’s liability, increasing the combined debt capacity, increasing combined purchasing power, increasing the entity’s market concentration and penetration, gaining access to otherwise unavoidable technology or intellectual property, and many other reasons.

Income tax simplification and income tax reduction may also be valid economic justifications for an M&A transaction. However, evading or avoiding income tax cannot be the principal—or even the most important—economic justification for the M&A transaction.

Section 269 provides the Service with the authority to disallow tax benefits when a profitable corporation acquires a loss corporation for the sole purpose of utilizing the target company’s NOLs or other tax attributes.

As described in the Sixth Circuit decision in *The Zanesville Investment Co.*,⁶ the typical Section 269 controversies “have dealt with the sale by one control group to another of a corporation with, typically, a net operating loss carryforward and the efforts

of the new control group to utilize this carryforward by funneling otherwise taxable income to a point of alleged confluence with the carryforward.”

CONSIDERATION OF THE SOURCE OF THE NOLs

The Service may apply Section 269 to disallow the use of preacquisition NOLs and other tax attributes regardless of which party to the M&A transaction is the source of the income tax benefit. In other words, for Section 269 purposes, it does not matter whether the loss corporation is the target corporation or the acquirer corporation.

The Service—and the courts—may still apply Section 269 to restrict the use of the preacquisition losses after an M&A transaction. See, for example, the Fifth Circuit decision in *Supreme Investment Corp.*⁷

The Service has made a few attempts to apply Section 269 to disallow post-acquisition losses that taxpayers have applied to the post-acquisition combined entity income. However, the courts have generally not accepted such an application of Section 269.

For example, see the Third Circuit decision in *Herculite Protective Fabrics Corp.*⁸ and *The Zanesville Investment Co.* Sixth Circuit decision cited above.

Nonetheless, some courts have accepted the Service’s application of Section 269 on a post-acquisition basis. These cases all involved instances where the acquired corporation was consistently generating an operating loss. In these cases, the post-transaction combined company attempted to offset the acquirer company’s income against the acquired target company’s continuing losses.

In other words, the courts concluded that the acquirer completed the acquisition in order to have access to (and enjoy the tax benefit of) the target corporation’s expected post-acquisition losses. For example, see the First Circuit decision in *R.P. Collins & Co.*⁹ and the Third Circuit decision in *Hall Paving Co.*¹⁰

In assessing whether target company tax attributes are the principal purpose of the transaction, the Service often considers both the preacquisition and the post-acquisition losses of the target company.

If the target’s losses do not repeat every single year—but do occur with some regularity—then the Service may allege that the target corporation’s tax losses were the principal purpose of the price transaction.

The Service may also consider whether the acquirer (either an individual or a corporation) operates the loss target company differently after the acquisition.

For example, let's assume that Connie Contractor ("Connie") owns the profitable Alpha Company ("Alpha"). Alpha is a water, sewer, and pipeline construction company. Connie acquires the stock of Beta Corporation ("Beta"). Beta is another water, sewer, and pipeline construction company—with a large NOL carryforward.

The amount of Alpha's income is not sufficient to fully benefit from the Beta NOL carryforward (even considering the effect of the Section 382 limitation).

Let's assume that Connie also owns Gamma Corporation ("Gamma"). Gamma is an unrelated—but profitable—highway and street construction company. Connie merges Gamma into Alpha—in order to have sufficient Alpha income to fully utilize the Beta NOL carryforward.

The Service may allege that the principal purpose of the Gamma merger was the evasion or the avoidance of income tax. And, the Service may apply Section 269 to disallow Alpha's utilization of the Beta NOL.

The Service has not been successful in applying Section 269 to block the mere deferral of income tax. In the Tax Court matter *Rocco*,¹¹ the Service claimed that tax avoidance was the taxpayer's principal purpose. The Service disallowed the taxpayer's ability to use the cash method of accounting. The Tax Court rejected the Service's position.

In its judicial decision, the Tax Court stated that Section 269 applies to "deductions or credits, the allowance of which would result in a permanent reduction of revenue." Rejecting the Service's position, the *Rocco* court concluded that the government was "attempting to disallow a benefit which defers the tax but does not result ultimately in the avoidance or the evasion of tax."

CONSIDERATIONS OF SUBSTANCE OVER FORM

The redemption of a shareholder's shares in a loss corporation may trigger Section 269 if the stock redemption puts another shareholder into a control position.

In other words, the Service may treat such a stock redemption as if it was an acquisition of the loss target corporation. However, the Service's application of Section 269 may not always prevail in such instances.

For example, in the U.S. District Court decision in *Yunker Bros., Inc.*,¹² the court concluded that nontax motivations were the principal purpose of a shareholder redemption. In the *Yunker Bros.* case, the District Court rejected the Service's application of Section 269.

In the Tax Court decision in *Briarcliff Candy Corp.*,¹³ the court made it clear that it would broadly consider substance over form in the application of Section 269. The *Briarcliff Candy* decision states that Section 269 was "broadly drafted to include any type of acquisition which constitutes a device by which one corporation secures a tax benefit to which it is not otherwise entitled."

In that judicial decision, the Tax Court accepted the Service's application of Section 269 with respect to a loss acquirer corporation's purchase of a profitable subsidiary corporation.

The takeaway to corporate acquirers is that neither the Service nor the courts will limit the application of Section 269 to the "plain vanilla" M&A transaction where a profitable acquirer corporation buys a target corporation with an NOL carryforward.

THE APPLICATION OF SECTION 269 TO A NEW CORPORATION

Occasionally, the Service may attempt to apply Section 269 after the taxpayer's formation of a new corporate entity. According to Regulation 1.269-3(b)(3), Section 269 may apply when an individual owns high-income assets and then transfers those assets to a newly formed controlled corporation that generally produces NOLs.

One example of the application of Section 269 to a new corporation involved the musician and comedian Victor Borge. For years, Borge earned a substantial amount of income from his musical comedy entertainment appearances.

Totally unrelated to his work as an entertainer, Borge also owned an unincorporated poultry business that consistently generated operating losses. However, the tax law limited the annual amount of the unincorporated business losses that Borge could apply to offset his considerable entertainment income.

So Borge incorporated the poultry business. And, he contracted through the new (unprofitable) corporation to provide his (profitable) entertainment services.

The Service applied Section 269 and disallowed the offset of the new corporation's losses against the Borge's entertainment-related income. Borge challenged the Service and brought the case to trial.

At appeal, the Second Circuit decision in *Borge*¹⁴ agreed with the Service. The Second Circuit held that the new corporation was formed for the primary purpose of providing an income tax benefit to Borge, and the appeals court applied Section 269 to deny the income offset by the corporation's operating losses.

Normally, the Service applies Section 269 when a taxpayer utilizes a corporate form to enjoy income tax benefits from built-in or preexisting circumstances. The most typical example of this circumstance is when a target corporation has an NOL carryforward available to use.

However, the Service may also apply Section 269 when the taxpayer creates a new corporation around an existing business for the principal purpose of obtaining income tax benefits.

Of course, the Service will not apply Section 269 to disallow tax benefits when there are alternative (non-tax-related) purposes for the formation of the corporate entity. In particular, the courts often consider these other, non-tax-related reasons for the corporate formation.

For example, the Tax Court decision in *Cromwell Corp.*¹⁵ states "the formation of a holding company to acquire another corporation is not an universal procedure and is not a 'device' which would distort the income of . . . the principals . . . as comprehended by Section 269."

THE S CORPORATION EXCEPTION TO SECTION 269

According to Revenue Ruling 76-363, Section 269 cannot be applied to disallow any deduction, credit, or other tax allowance of a corporation that has elected to be taxed under Subchapter S. Under the Section 1366 rules for S corporations, such small business corporations pass through income, gains, losses, and deductions to the company shareholders.

Accordingly, and practically, Section 269 will not apply to limit an S corporation's deductions, credits, or other tax allowances.

In addition to Revenue Ruling 76-363, the courts have recognized that the tax pass-through status of an S corporation effectively negates the application of Section 269 to disallow income tax benefits at the corporation level.

For example, in the Tax Court matter of *Modern Home Fire & Casualty Insurance Co.*,¹⁶ the Service alleged that the principal purpose of the shareholder's use of the S corporation was to offset losses against the corporation's income.

The Tax Court's *Modern Home* decision concluded that, even if the Service's allegation was correct (which the court did not need to rule on), Section 269 would not apply to an S corporation.

THE SECTION 382 NOL LIMITATION

Section 269 is intended to limit tax avoidance or tax evasion related to the acquisition of a loss target company. In contrast, Section 382 is intended to limit the acquirer's annual use of the acquired NOLs of a target company with an NOL carryforward.

Sections 382(g) and (i) describe the test for when the Section 382 NOL limitation is triggered. The Section 382 NOL limitation applies after there is an "ownership change" in the loss target corporation.

Such an ownership change occurs if the percentage of corporate stock owned by any 5 percent shareholder increases by more than 50 percentage points over the lowest stock percentage owned by that shareholder. The look-back period for the testing of the 50 percentage point ownership change is three years.

An ownership change occurs when the loss target corporation is acquired in either a taxable purchase or a tax-free reorganization. A taxable purchase may involve an asset purchase accounted for under Section 1060. A tax-free reorganization may involve any of the reorganization structures accounted for under Section 368(a)(1)(A) or (C) or (D).

The annual amount of the pre-change NOL available to the acquirer is calculated as:

1. the fair market value of the target loss corporation at the time of the ownership change multiplied by
2. the applicable federal long-term tax-exempt rate.

Section 382(k)(1) defines a loss target corporation as a corporation:

1. that is entitled to use an NOL carryback or carryforward or
2. that has an NOL for the current tax year in which the ownership change occurred.

A loss target corporation also includes any corporation with a "net realized built-in loss." According to Section 382(h)(3)(A), a corporation will have a net unrealized built-in loss if:

1. the aggregate adjusted basis of the corporation's assets exceeds
2. the aggregate fair market value of the corporation's assets.

This comparison is made just prior to the date of the ownership change that triggers Section 382.

Section 382(h)(1)(B) provides the limitation on the acquirer's use of the target corporation's net unrealized built-in loss. That limitation is described as follows: the acquirer corporation treats the net unrealized built-in loss as a pre-ownership change loss that can offset post-change income only to the extent of the above-described Section 382 annual limitation.

Section 382(h)(2)(B) provides that a recognized built-in loss is any loss recognized on the disposition of an asset during a five-year period. That five-year period begins on the ownership change date. The amount of the recognized built-in loss that is treated as a pre-change loss is limited to the amount of the net unrealized built-in loss.

THE SERVICE'S OTHER CHALLENGES TO M&A TRANSACTIONS

The Service may also challenge the income tax motivations behind an M&A transaction by applying other tax provisions and doctrines. For example, the Service may challenge the M&A transaction based on the Section 482 (and the related regulations) intercompany transfer price rules.

The Service may also challenge the tax impact of the M&A transaction based on several nonstatutory legal doctrines. For example, the Service may attempt to recharacterize the M&A transaction based on the principle of economic substance, the principle of substance over form, the principle of a sham transaction, or the principle of a step transaction.

The M&A transaction should be safe from a Service challenge under the business purpose legal doctrine if the transaction is shown to be motivated by a valid business purpose—other than tax avoidance or tax evasion.

PROPOSED M&A TRANSACTION PLANNING CONSIDERATIONS

There is little that a corporate acquirer can do to avoid the application of the Section 382 limitation on the annual use of the acquired loss corporation's NOLs.

However, there are numerous factors that a corporate acquirer may consider to avoid (or to successfully defend against) the Service's application of Section 269 in an M&A transaction.

The owners/managers of the acquirer corporation (and the owners/managers of both corporations, in the case of a merger transaction) should seriously contemplate—and carefully document—the following considerations:

1. The acquirer company should have a written acquisition plan that is approved by its board of directors. In the case of a merger, both companies should have a written merger plan that is approved by their respective boards of directors.

This written transaction plan (or plans) should thoroughly document (and quantify, if possible) all of the nontaxation reasons for completing the proposed M&A transaction.

2. To the extent that there are both taxation reasons and nontaxation reasons for the M&A transaction, the written plan (or plans) should make clear that the nontaxation reasons are the principal reasons for the proposed transaction.

The nontaxation reasons may include industry, strategic, and operational considerations. These nontaxation considerations should be described so as to make it obvious that they are the principal transaction drivers.

3. Financial projections for the post-transaction entity should be included in the written plan (or plans). These financial projections should, of course, include any of the expected post-transaction income tax benefits—and all other post-transaction benefit considerations.

However, the post-transaction financial projections should demonstrate that nontaxation factors—that is, operating income, post-merger synergies, economies of scale and size, and so forth—are the principal components of the combined entity's expected cash flow.

4. If a profitable entity is acquiring or merging with a loss entity, then the post-transaction business plan should demonstrate how the transaction will “turn around” (or make profitable) the business operations that were previously operating at a loss.

If the target corporation's operating loss is expected to be temporary or is due to extraordinary circumstances (e.g., the temporary impact of the COVID-19 pandemic),

then those factors should be described in the post-transaction business plan.

5. In particular, a corporation acquiring (or merging with) a target company in a different line of business should describe the business (i.e., nontaxation) reasons for the M&A transaction.

There are numerous valid business purposes for such consolidation transactions, including planned product/service/geography) diversification, access to financing collateral, access to new lines of distribution, reduction of any seasonality effects, access to intellectual property or to business licenses, and so on. All such nontaxation reasons should be discussed in the written M&A transaction plan (or plans).

Including any and all of the above considerations in a written acquisition plan, business plan, strategic plan, and financial projection will provide contemporaneous evidence of the business purposes and reasons for the proposed M&A transaction.

Such contemporaneous evidence may be very important for future use in the acquirer's defense against any Service challenge of the completed transaction.

SUMMARY AND CONCLUSION

M&A activity continues to be brisk in many industries throughout the economy. It is uncertain whether this positive trend in M&A activity is in spite of, or because of, the COVID-impacted economic conditions.

Either way, participants in many industries are wise to be wary of pertinent, and in some cases unique, M&A pricing and structuring considerations—either as the acquirer entity or as the target entity.

Transaction participants—and their professional advisers—understand that income tax considerations are an important element in the planning and pricing of any M&A transaction. However, income tax considerations should not be the principal motivation or purpose of the proposed M&A transaction.

If tax considerations are the principal transactional purpose, then the Service may allege that the transaction is intended to avoid or to evade federal income tax.

In particular, if a loss corporation is one of the transaction participants, the Service may attempt to apply Section 269—or some other statutory or judi-

cial provisions—to restrict or disallow the income tax benefits of the proposed transaction.

Accordingly, transaction participants—and their valuation, taxation, and other professional advisers—should carefully plan for any M&A transaction involving a loss target corporation or other related income tax benefits.

Such transaction planning should include the impact of the Section 382 limitation on the acquirer's annual use of the acquired loss corporation's NOLs.

In particular, the transaction documents should include written documentation of all of the nontaxation reasons for—and drivers of—any proposed M&A transaction.

Notes:

1. Jackson Oldsmobile, Inc. v. U.S., 237 F. Supp. 779 (M.D. GA 1964), *aff'd*, 371 F.2d 808 (5th Cir. 1967).
2. Hermes Consolidated Inc. v. U.S., 14 Cl. Ct. 398 (1988).
3. The Challenger, Inc. v. Commissioner, T.C. Memo. 1964-338 (Dec. 31, 1964).
4. U.S. Shelter Corp. v. U.S., 13 Cl. Ct. 606 (1987).
5. Bobsee Corp. v. U.S., 411 F.2d 231 (5th Cir. 1969).
6. The Zanesville Investment Co. v. Commissioner, 335 F.2d 507, 509 (6th Cir. 1964).
7. Supreme Investment Corp. v. U.S., 468 F.2d 370 (5th Cir. 1972).
8. Herculite Protective Fabrics Corp. v. Commissioner, 387 F.2d 475 (3rd Cir. 1968).
9. R.P. Collins & Co., Inc. v. U.S., 303 F.2d 142 (1st Cir. 1962).
10. Hall Paving Co. v. U.S., 471 F.2d 261 (5th Cir. 1973).
11. Rocco, Inc. v. Commissioner, 72 T.C. 140 (1979).
12. Younker Bros., Inc. v. U.S., 318 F.Supp. 202 (S.D. Iowa 1970).
13. Briarcliff Candy Corp. v. Commissioner, T.C. Memo. 1987-487 (Sept. 28, 1987).
14. Borge v. Commissioner, 405 F.2d 673 (2d Cir. 1968).
15. Cromwell Corp. v. Commissioner, 43 T.C. 313 (1964).
16. Modern Home Fire & Casualty Insurance Co. v. Commissioner, 54 T.C. 839 (1970).

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On Our Website

Recent Articles and Presentations

Connor Thurman, a senior associate in our Portland office, and Robert Reilly, a managing director of our firm, authored an article that was published in the March/April 2021, issue of *Construction Accounting and Taxation*. The title of Connor and Robert's article is "Empirical Benchmarks to Estimate the Company-Specific Risk Premium."

Estimating the cost of capital is one component of every construction company's valuation, damages, or transfer price analysis. This article continues the discussion from an earlier article, "Considering a Company-Specific Risk Premium in the Cost of Capital Measurement," which appeared in the January/February 2021 issue. Connor and Robert's article describes the various empirical data sources that analysts may consider as proxies, benchmarks, or approximations in the estimation of the construction firm company-specific risk premium.

Robert Reilly, a managing director of our firm, authored an article that was published in the January/February 2021, issue of *Construction Accounting and Taxation*. The title of Robert's article is "Considering a DLOC in the Construction Company Transfer Tax Valuation."

In the transfer tax valuation of a construction company, discounts are often applied for lack of marketability and for lack of control (DLOC). The ownership control consideration involves how much influence the subject ownership interest has over the operations of the private construction company. The DLOC is not an absolute consideration, but is represented by a continuum. Robert's article summarizes the concept of ownership control in a transfer tax valuation, the reasons why analysts apply a valuation adjustment in a private construc-

tion company business valuation, the theoretical models and empirical studies that analysts typically consider to measure the amount of any DLOC, and the factors that may influence the magnitude of the DLOC in any particular valuation.

Connor Thurman, a senior associate in our Portland office, and Robert Reilly, a managing director of our firm, authored an article that was published in the January/February 2021, issue of *Construction Accounting and Taxation*. The title of Connor and Robert's article is "Considering a Company-Specific Risk Premium in the Cost of Capital Measurement"

Estimating the cost of capital is one component of every construction company's valuation, damages, or transfer price analysis. There are several methods that analysts may apply to measure the cost of equity capital when it is a component of the discount rate or capitalization rate. These methods are summarized in Connor and Robert's article. An important component of the cost of equity capital is the consideration of investment-specific (or company-specific) risk (sometimes referred to as "alpha"). This article focuses on the factors that analysts may consider in the alpha estimation.

Robert F. Reilly, a managing director of our firm, authored an article that was published in the April 14, 2021, issue of *QuickRead*, a publication of the National Association of Certified Valuators and Analysts®. The title of Robert's article is "Analyst Considerations in the Valuation of a Tax Loss Target Company Acquisition."

Robert's article summarizes the factors that acquirers—and their valuation and other financial advisers—should consider when structuring an M&A transaction that involves a target company with such income tax attributes.

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Communiqué

IN PRINT

Robert Reilly, managing director, authored an article that appeared in the May/June 2021 issue of *Construction Accounting and Taxation*. The title of his article was “Considerations in the Acquisition of a Tax Loss Construction Company.”

Robert Reilly and Connor Thurman, Portland, Oregon, office senior associate, co-authored an article that appeared in the June 2021 issue of *The Practical Lawyer*. The title of that article was “Functional Analysis of Capital Calculations in Valuation and Damages Disputes (Checklist).”

Robert Reilly and Connor Thurman also had their article that was originally published in the June 2021 issue of *The Practical Lawyer* and titled “Functional Analysis of Capital Calculations in Valuation and Damages Disputes (Checklist)” mentioned in a blog post on the ALI-CLE website. That blog was posted on July 15, 2021.

Robert Reilly and Connor Thurman also had their article titled “Best Practices for Estimating the Company-Specific Risk Premium” reprinted in NACVA’s www.quickreadbuzz.com on June 24, 2021.

John Kirkland, Atlanta office senior associate, and Nick Henriquez, Atlanta office manager, also had an article reprinted in NACVA’s www.quickreadbuzz.com on July 1, 2021. The title of that reprint was “Issues in Estimating the Cost of Equity Capital.”

Lisa Tran, Portland office vice president, and Travis Royce, Portland office associate, co-authored an article that appeared in the May 12, 2021, issue of NACVA’s www.quickreadbuzz.com. The title of their article was “Application of the Tax Amortization Benefit Valuation Adjustment.”

IN PERSON

Charles Wilhoite, Portland office managing director, participated as a panelist for the National Association of Corporate Directors—Northwest Chapter (“NACD-NWC”). The NACD-NWC panel

discussed private company governance issues on February 18, 2021.

Charles Wilhoite also participated as a panelist for the NACD-NWC on March 23, 2021. The NACD-NWC panel discussed environmental, social, and governance issues.

IN ENCOMIUM

Charles Wilhoite was appointed by Oregon Governor Kate Brown, and was confirmed by the Oregon Senate, to serve a four-year term on the Oregon Investment Council (“OIC”) through April 18, 2025. The OIC is comprised of four governor-appointment members, the state treasurer, and the director of the Public Employees Retirement System. The OIC oversees the State of Oregon trust funds, including the Oregon Public Employees Retirement Fund, the Common School Fund, and the State Accident Insurance Fund. Total OIC fund assets are approximately \$119 billion.

Charles Wilhoite was appointed chair of the Public Affairs and Environmental Policy Committee, and he was also appointed to the Governance and Audit committees on the board of directors of Northwest Natural Holding Co.

Charles Wilhoite was appointed to the board of directors of the National Association of Corporate Directors—Northwest Chapter (“NACD-NWC”), for a term effective January 1, 2021, through June 30, 2024. The NACD elevates board performance by providing board members with practical insights through world-class education, leading-edge research, and an ever-growing network of directors.

Charles Wilhoite was elected to serve as chair of the Legacy Health board of directors for a two-year term ending May 31, 2023. Legacy Health is a Portland-based nonprofit health system with six hospitals. Legacy Health is dedicated to children’s care offered at Randall Children’s Hospital at Legacy Emanuel Medical Center. Legacy Health has an employee base of 13,000 medical, executive, administrative, and support staff.

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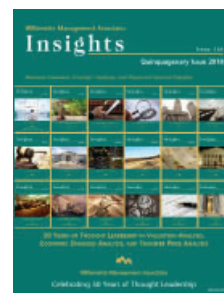
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