Thought Leadership

Property Tax Valuation of Taxpayer Intangible Assets

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Valuation analysts are often called on to conduct valuation, intercompany transfer price, or economic damages analyses related to taxpayer intangible assets. This discussion focuses on the identification and valuation of commercial intangible assets for property tax compliance, appeal, or litigation purposes. First, this discussion describes the different types of taxpayer intangible assets (including real property interests and intangible personal property). Second, this discussion explains the elements of the valuation assignment, including the analyst's data gathering and due diligence procedures. Third, this discussion summarizes several relevant judicial decisions related to taxpayer property tax claims. Fourth, this discussion presents the generally accepted intangible asset valuation approaches and methods. And, finally, this discussion includes an illustrative example of a cost approach, a market approach, and an income approach valuation of a taxpayer's intangible assets.

Introduction

Industrial and commercial companies (and their legal counsel) often retain specialist valuation analysts (hereinafter "analysts") to identify and value intangible assets. Such analysts are often asked to identify and value a taxpayer's intangible assets for state and local property tax purposes.

Those valuations may be performed for property tax assessment compliance, negotiation, appeal, or litigation purposes. The reason for such valuations is that some taxing jurisdictions tax all taxpayer intangible assets, some taxing jurisdictions exempt some taxpayer intangible assets from property tax, and some taxing jurisdictions exempt all taxpayer intangible assets from property tax.

Intangible asset property tax exemptions are particularly important to taxpayers that are centrally assessed based on the unit valuation principle. Intangible asset exemptions are also important to taxpayers that are subject to local property assessment based on the unit valuation principle. Such taxpayers typically operate in the airline, telecommunications, cable television, natural resources, utilities, transportation, and similar industries.

This discussion summarizes the elements of the intangible asset valuation assignment and the valuation data gathering and due diligence process. This discussion describes the generally accepted intangible asset valuation approaches and methods: cost approach methods, market approach methods, and income approach methods.

This discussion summarizes several representative judicial decisions in which the taxpayer was both successful and unsuccessful in defending an intangible asset exemption. And, this discussion summarizes the valuation synthesis and conclusion process, the attributes of an effective intangible asset valuation report, and the types of professionals who may perform the intangible asset valuation.

Intangible Real Property Assets

Most taxpayers have a general familiarity with the intangible real property category of assets. This is because legal interests in real estate are often subdivided and transferred. Real property assets are the transferable legal interests in tangible real estate.

The value of a real property asset does not come from the ownership of the real estate itself. The ownership of the tangible real estate is vested in a separate party—the landlord, the lessor, or the licensor. What the real property asset owner possesses is the right to occupy, cross over, extract from, and otherwise use the subject real estate.

A real property asset is an intangible asset. The value of intangible real property comes from the legal rights it grants to a physical asset—not from the ownership of the physical asset itself.

Examples of real property assets include leases, occupancy permits, building permits, surface rights, air rights, mining rights, water extraction rights, drilling rights, and so forth.

These intangible assets are often documented in a license, lease, easement, or other contract. The tangible evidence of the intangible real property right is the document (e.g., the contract). The contract is an asset; it can be owned. The contract has a tangible element; it is a written document.

The value of the contract, however, does not depend on the physical aspects of the contract document (i.e., the piece of paper). Rather, the value of the intangible real property contract depends on the legal rights (and economic expectations) associated with the contract document.

Intangible Personal Property Assets

Sophisticated taxpayers are familiar with intangible personal property. Some observers automatically think of intangible personal property when they encounter the term "intangible assets." That definition of intangible assets is actually incomplete from a valuation perspective.

Real property interests, as discussed earlier, are, in fact, intangible assets. However, it would not invalidate this explanation of intangible assets if the discussion is limited to intangible personal property.

The value of intangible personal property comes from the legal rights, the intellectual property content, and/or the expected economic benefits that are associated with that intangible asset. Like all assets (both tangible and intangible), intangible personal property (1) can be owned and (2) has value.

Taxpayer Intangible Assets

Analysts often group all intangible personal property assets into four categories. This categorization process is particularly relevant from a property tax valuation perspective. This is because the four different categories of intangible personal property assets (although fundamentally similar) have slightly different economic attributes.

The four categories of intangible personal property assets are as follows:

1. Financial assets
2. General intangible assets
3. Intellectual property
4. Intangible value in the nature of goodwill

Financial Assets

All taxpayers are familiar with financial assets. While the inexperienced analyst may not think of this first category of intangible personal property as an intangible asset, this category may be the most illustrative example of an intangible asset.

Common examples of financial assets include: cash, accounts and notes receivable, stocks and bonds, and other negotiable investment securities. When the financial assets owner is a taxpayer corporation, these intangible assets are recorded as "current assets" for financial statement purposes.

Although some observers may not think of this type of property as an intangible asset, it may offer the most conceptually clear example of an intangible personal property asset. Let's consider the example of cash—in the form of a $100 bill.

If the $100 bill is owned by the taxpayer, it is recorded as cash, that is, a current asset, on the corporation's balance sheet. Even if the $100 bill is owned by an individual, it is still recorded as cash (i.e., a current asset), if the individual prepares a personal financial statement.

There would likely be no question at all that the $100 bill (1) is an asset and (2) has value. However, the value of the $100 bill does not result from the actual paper note. Rather, the value of the $100 bill results from the fact that the intangible asset owner has the legal right to exchange the paper instrument for goods and services. The value of this $100 bill intangible asset comes from the expected economic benefits it can provide to the intangible asset owner.

Commercial Intangible Assets

The second category of intangible personal property assets includes most other commercial intangible assets. The economic attributes and common subcategorizations of these discrete (or individual) commercial intangible assets will be presented below. Because this is a broad category, most intangible personal property assets may be classified as general commercial intangible assets.

Intellectual Property

The third category of intangible personal property assets is called intellectual property. Intellectual property intangible assets are distinguished by their special legal recognition and, therefore, their specific legal rights.

Four types of intellectual property are included in this category:

1. Trademarks and trade names
2. Patents
3. Copyrights
4. Trade secrets

Intangible Value in the Nature of Goodwill

The fourth category of intangible personal property assets includes intangible value in the nature of goodwill. Analysts typically place the intangible value in the nature of goodwill to be a separate (or fourth) category of intangible assets for various accounting, taxation, and other financial reporting purposes.

Intangible value in the nature of goodwill is often considered to be a residual intangible asset. That is, for valuation purposes, goodwill is often considered to be the intangible value component of a business enterprise (of whatever legal form) that cannot be specifically assigned to (or identified with) any of the other above-mentioned three types of intangible assets. This statement is true for both (1) an individual's professional or celebrity goodwill and (2) a taxpayer corporation's institutional or business enterprise goodwill.

Nonetheless, like each of the other three categories of intangible personal property, goodwill (1) can be owned and (2) can have value. While goodwill is an intangible asset, goodwill is not as easy to identify or to analyze as the other three categories of intangible personal property.

Exhibit 1 presents a list of many taxpayer intangible assets. Exhibit 1 does not present an exhaustive list of intangible assets.

Identification of Taxpayer Intangible Assets

The initial procedure in any intangible asset valuation is for the analyst (and taxpayer management and legal counsel) to understand what qualifies as an intangible asset and what does not. As with any type of taxpayer property (tangible or intangible), an intangible asset should possess certain legal and economic attributes.

To qualify as an intangible asset, the property should have the following attributes:

- It should be subject to specific identification and description.
- It should be subject to legal existence and protection.
- It should be subject to the right of private ownership, and this private ownership should be legally transferable.
- It can be demonstrated by some tangible evidence of existence.
- It should have been created or should have come into existence at an identifiable time or as the result of an identifiable event.
- It should be subject to being destroyed or to a termination of existence at an identifiable time or as the result of an identifiable event.
- It can be described by a specific bundle of legal rights.
- It should be recognized for some accounting, taxation, or legal purposes.

The value of the taxpayer's tangible personal property is primarily related to the physical attributes of that property. In contrast, the value of the taxpayer's intangible assets is not related to the intangible asset's physical attributes. Rather, the value of an intangible asset is related to the legal rights or economic benefits that the intangible asset provides to the taxpayer.

Also, as a category of property, an intangible asset has to be transferable and separable from the particular owner or operator. That does not mean that the intangible asset has to be readily marketable—or that the taxpayer owner would ever plan to transfer the intangible asset.

Also, the taxpayer owner may have no plan to ever separate the intangible asset from the taxpayer's business. And, the intangible asset does not have to be individually separable from the taxpayer corporation. Rather, the intangible asset can be sold individually or with other tangible or intangible assets.

In fact, Financial Accounting Standards Board (FASB) Accounting Standards Codification (ASC) topic No. 805-20 defines the criteria for an intangible asset to be identifiable for purposes of generally accepted accounting principles.

ASC topic 805-20 defines an intangible asset as being identifiable if it meets either of the following two criteria:

> It is separable, that is, capable of being separated or divided from the entity and sold, transferred, licensed, rented, or exchanged,

Exhibit 1
Illustrative List of Intangible Assets

Intangible Personal Property Assets

Financial Assets

Options, warrants, grants, rights—related to securities

General Intangible Assets

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

Intellectual Property

Brand names and logos
Copyrights
Development rights—intellectual property
Know-how and associated procedural documentation
Manuscripts
Musical compositions
Patent applications
Patens—both product and process
Procedure ("how we do things here) manuals and related documentation
Product designs
Proprietary processes—and related technical documentation
Proprietary products—and related technical documentation
Proprietary technology—and related technical documentation
Trade secrets
Trademarks and trade names

Goodwill Intangible Assets

Going-concern value (and immediate use value)
Goodwill—institutional
Goodwill—personal
Goodwill—professional
Personalty contracts

Intangible Real Property Assets

Developmental rights—land and other real estate
Easements
Favorable leases
Leasehold estates
Leasehold interests
Location value
Mineral extraction rights
Natural resources
Ore and mineral deposit database
Possessory interest
Real property use rights
Use rights—air, water, land

either individually or together with a related contract, identifiable asset, or liability, regardless of whether the entity intends to do so.

Or,

It arises from contractual or other legal rights, regardless of whether those rights are transferable or separable from the entity or from other rights and obligations.

Owners of intangible assets, like owners of all property, should have property rights. The common intangible asset property rights include the following:

- To enjoy private ownership
- To be able to title the property ownership
- To transfer (by sale, license, gift, and so on) the ownership
- To divide (or subdivide) the property rights
- To claim legal protection
- To use (or to decide not to use)
- To prevent use by others
- To enjoy possession
- To hypothecate

As part of the intangible asset valuation process, the analyst (and the taxpayer and legal counsel) should consider the specific bundle of legal rights associated with the intangible assets. Some of the common bundles of legal rights associated with an intangible asset include the following:

- Fee simple interest
- Term interest
- Life interest
- Residual or reversionary interest
- Licensor or franchisor interest
- Licensee or franchisee interest
- Sublicense or subfranchisee rights
- Development rights
- Exploitation rights
- Commercialization rights
- Use rights—territorial or geographic
- Use rights—product or industry rights

There is no single list of commercial intangible assets. For example, different state statutes have different listings of the kinds of intangible assets that are exempt from property taxation in that particular jurisdiction. However, there are several general lists of intangible assets that analysts commonly refer to during the valuation process.

The above-mentioned FASB ASC topic No. 805-20 provides the following list of identifiable intangible assets:

- Marketing-related intangible assets:
  - Trademarks and trade names
  - Service marks, collective marks, and certification marks
  - Trade dress (unique color, shape, or package design)
  - Newspaper mastheads
  - Internet domain names
  - Noncompetition agreements
- Customer-related intangible assets:
  - Customer lists order or production backlogs
  - Customer contracts and related customer relationships
  - Noncontractual customer relationships
- Artistic-related intangible assets (copyrights):
  - Plays, operas, or ballets
  - Books, magazines, newspapers, or other literary works
  - Musical works such as compositions, song lyrics, and advertising jingles
  - Pictures and photographs
  - Video and audiovisual materials, including motion pictures, music videos, and television programs
- Contract-based intangible assets:
  - Licensing, royalty, standstill agreements
  - Advertising, construction, management, service or supply contracts
  - Lease agreements
  - Construction permits
  - Franchise agreements
  - Operating and broadcast rights
  - Use rights such as drilling, water, air, mineral, timber cutting, and route authorities
  - Servicing contracts such as mortgage servicing contracts
  - Employment contracts
- Technology-based intangible assets:
  - Patented technology
  - Computer software and mask works
  - Unpatented technology
  - Databases, including title plants
  - Trade secrets, such as secret formulas, processes, and recipes

Internal Revenue Code (IRC) Section 197 provides the following list of amortizable (called "Section 197") intangible assets:

- Goodwill
- Going concern value
- Any of the following items:
  - Workforce in place
  - Business books and records, operating systems, or any other information base
  - Any patent, copyright, formula, process, design, pattern, know-how, format, or other similar item
  - Any customer-based intangible
  - Any supplier-based intangible, and any other similar item
- Any license, permit, or other right granted by a governmental unit or agency or instrumentality thereof
- Any covenant not to compete entered into in connection with an acquisition of a trade or business
- Any franchise, trademark, or trade name

The Treasury Regulations related to both Internal Revenue Code Sections 482 and 936 provide exactly the same list of intangible assets.

Elements of the Intangible Asset Valuation Assignment

The first element of the valuation assignment is a complete definition of the intangible asset. That definition statement should specify exactly which intangible assets are included as the valuation subject. This definition should be as specific as possible as to (1) the listing of each intangible asset and (2) the description of each intangible asset.

This definition should describe all related intangible assets that should be considered as a component of the subject intangible asset. For example, should the trademark valuation include advertising materials and trade dress? Should the patent valuation include product/process engineering drawings and proprietary technology?

The second element of the valuation assignment is a description of the intangible asset bundle of legal rights. The assignment should specify which of the following (or which other) bundles of rights the analyst should include in the valuation:

- Fee simple interest
- Term/reversion interest
- Licensor/licensee interest
- Territory (domestic/international) interest
- Product line/industry interest
- Sublicense rights
- Development rights
- Commercialization/exploitation rights

The third element of the valuation assignment is a description of any intangible asset license or contract that is in effect. If there is a license or agreement (contested or otherwise) associated with the intangible asset, the analyst should be made aware of the licensor or licensee responsibility contract terms such as legal protection requirements, research and development expenditures, marketing expenditures, and licenses, permits, or other regulatory approvals.

The analyst also should be aware of other contract terms such as minimum use, production, or sales; minimum marketing or commercialization expense; R&D technology payments or completion payments; the party responsible to obtain the required approvals; and milestone license payments.

The analyst should be informed about any intangible asset license regardless of whether the license is inbound or outbound.

The fourth element in the valuation assignment is the standard (or definition) of value that the analyst is being asked to conclude. The standard of value typically relates to the question: Value to whom? Different taxing jurisdictions may apply different standards of value.

Often, the standard of value is determined by a statutory, regulatory, or administrative requirement. Therefore, legal counsel will typically instruct the analyst as to the appropriate standard of value related to the subject taxing jurisdiction. Some of the alternative standards of value include fair value, fair market value, market value, true cash value, use value, user value, owner value, and investment value.

The fifth element in the valuation assignment is the premise of value that the analyst should assume. The premise of value considers the assumed set of circumstances under which the hypothetical intangible asset transaction (sale or license) will take place.

Some of the alternative premises of value include the following:

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

- Value in exchange—involuntary liquidation basis

The selected premise of value is typically an assignment instruction from the taxpayer management (or legal counsel). If the taxpayer (or legal counsel) does not have an instruction as to the appropriate premise of value, then the analyst will typically select the premise of value that concludes the highest and best use (HABU) for the intangible asset.

In selecting the intangible asset's HABU, the analyst may consider the following alternatives:

- The current taxpayer HABU
- A hypothetical new owner/operator (marketplace) HABU
- A hypothetical licensor/licensee HABU

The sixth element of the valuation assignment is the valuation date. The taxpayer management (or legal counsel) will instruct the analyst as to the appropriate "as of" date on which to conclude the defined value. The property tax valuation will typically be performed as of an annual assessment date (e.g., as of January 1) that is determined by state statute.

The above-listed elements describe the objective of the valuation. The analyst will also need to know the purpose of the intangible asset valuation.

The purpose of the valuation considers elements such as: What will the intangible asset valuation be used for? Who will rely on (or receive a copy of) the intangible asset valuation? What form and format of intangible asset valuation report is required? Are there any specific legal instructions or requirements (e.g., specific statutory definitions, judicial precedent, or expert report requirements) that the analyst should consider and comply with?

To serve the information needs of the taxpayer, legal counsel, or (ultimately) a judicial finder of fact, the analyst should have a clear understanding of the intangible asset valuation assignment. The legal counsel is often responsible for ensuring that the analyst develops that understanding.

Intangible Asset Valuation Data Gathering and Due Diligence

Before the analyst selects and applies the valuation approaches, methods, and procedures, the analyst will typically perform a due diligence with respect to the intangible assets. Legal counsel may participate in this due diligence process, particularly if the valuation relates to a taxpayer appeal or litigation.

However, these due diligence procedures relate to identifying and obtaining information for the valuation. This due diligence process is a supplement to—and not a substitute for—counsel's legal due diligence process.

First, the analyst typically gathers and analyzes information related to the intangible asset owner/operator (i.e., the taxpayer). The information may relate to the historical development and current use of the intangible asset.

That information may include the taxpayer's historical and prospective financial statements, the taxpayer's historical and prospective development and maintenance costs, the taxpayer's current and expected resource constraints, and a description and estimate of the intangible asset's economic benefits to the taxpayer.

The analyst considers the intangible asset's market potential outside of the taxpayer. For example, the analyst may consider the following factors from the perspective of an alternative (e.g., hypothetical willing buyer) owner/operator:

- Change in the market definition or the market size for an alternative owner/user
- Change in alternative/competitive uses to an alternative owner/user
- The intangible asset ability to create inbound/outbound license opportunities to an alternative owner/user
- If the taxpayer can operate the intangible asset and also outbound license the intangible asset (in different products, different markets, different territories, etc.)

The analyst may also review and challenge any taxpayer-prepared financial projections and any taxpayer-prepared measures of intangible asset economic benefits. In particular, the analyst may test such projections and economic benefit measures against industry, guideline company, and other benchmark comparisons.

For example, the analyst may perform the following benchmark analyses:

- Compare management prior projections to prior actual results of operations
- Compare management current projections to current capacity constraints
- Compare management current projections to the current total market size
- Consider published industry average comparable profit margin (CPM) data
- Consider selected guideline publicly traded company comparable profit margin (CPM) data

Table 1
Analyst Due Diligence Procedures
Benchmark Industry Data Sources

- Financial Research Associates—Financial Studies of the Small Business
- The Risk Management Association—Annual Statement Studies: Financial Ratio Benchmarks
- BizMiner (The Brandow Company)—Industry Financial Profiles
- CCH, Inc.—Almanac of Business and Industrial Ratios
- Fintel, LLC—Fintel Industry Metrics Reports
- MicroBilt Corporation (formerly IntegraInfo)—Integra Financial Benchmarking Data
- ValueSource—IRS Corporate Ratios
- Schonfeld & Associates, Inc.—IRS Corporate Financial Ratios

- Consider the quality and quantity of available guideline or comparable intangible asset license data
- Perform an RUL analysis of the intangible asset, with consideration of the following:
  - Legal/statutory life
  - Contract/license life
  - Technology obsolescence life
  - Economic obsolescence life
  - Actual lives of prior generations of the intangible asset
  - Position of the intangible asset in its life cycle

In addition to comparing the taxpayer's historical and projected results to the selected guideline publicly traded companies (described below), the analyst may compare the taxpayer's results to published industry data sources. Table 1 presents some of the common published industry data sources that analysts use for these benchmark comparative analyses:

The Table 1 data sources allow the analyst to compare the taxpayer's results with the benchmark industry expense ratios, profit margins, returns on investments, and so on.

Intangible Asset Valuation Approaches

There are three generally accepted intangible asset valuation approaches: the cost approach, the market approach, and the income approach. Analysts typically consider all three approaches in each intangible asset valuation. Practically, most intangible asset valuations are principally based on one approach.

For each intangible asset valuation, the analyst will select the approaches for which there is the greatest quantity and quality of available data that best reflect the actual transactional negotiations of market participants in that industry, that best fit the characteristics (e.g., use, age, etc.) of the intangible asset, and that are most consistent with the professional experience and judgment of the analyst.

Within each approach, there are several valuation methods that the analyst can select and apply. And, within each method, there are numerous procedures that the analyst can perform. Therefore, valuation procedures are performed within a valuation method to conclude a value indication.

The analyst may perform two or three valuation methods within a single valuation approach. For example, the analyst may perform three different income approach methods and reconcile the three value indications to conclude a single income approach value indication.

Then, the analyst will reconcile the various valuation approach indications (if more than one approach is used). This synthesis of value indications will result in a final value conclusion for the intangible asset.

All of the cost approach methods are based on the basic economics principle of substitution. That is, the value of alpha intangible asset is influenced by the cost to create a new substitute beta intangible asset. As will be discussed, all cost approach methods apply a comprehensive definition of intangible asset cost, including consideration of an opportunity cost during the intangible asset development stage.

In addition, the cost of the new substitute intangible asset should be reduced (or depreciated) in order to make the hypothetical new beta intangible asset comparable to the actual "old" alpha intangible asset.

Unlike most intangible assets, intellectual property assets typically are not fungible. Intellectual property includes patents, copyrights, trademarks, and trade secrets. That is, the marketplace typically cannot replace the alpha intellectual property with a beta intellectual property. This is because the alpha intellectual property is legally protected. Therefore, although the cost approach is often used in intellectual property valuations, it does have certain application limitations.

All market approach methods are based on the basic economics principles of efficient markets and of supply and demand. That is, the value of the

intangible asset may be estimated by reference to prices paid in the marketplace for the arm's-length sale or license of comparable (or guideline) intangible assets. Comparable uncontrolled transaction (CUT) data related to sales or licenses are analyzed in order to extract pricing multiples or rates that can be applied to the intangible asset.

All income approach methods are based on the basic economics principle of anticipation. That is, the value of any investment is the present value of the income that the owner expects to receive from owning that investment. All income approach methods involve a projection of some measure of income over the intangible asset's RUL.

This income measure may relate to (1) the income earned from operating the intangible asset in the business enterprise and/or (2) the income earned from licensing the intangible asset from the taxpayer to an operator licensee that will pay a royalty (or some other fee) for the use of the intangible asset. This intangible asset income projection is converted to a present value by the use of a risk-adjusted discount rate (or annuity capitalization rate).

Cost approach methods are particularly applicable to the valuation of a recently developed intangible asset. In the case of a relatively new intangible asset, the taxpayer's development cost and effort data may be available (or may be more subject to accurate estimation). Cost approach methods are also applicable to the valuation of an in-process intangible asset and to a noncommercialized intangible asset (for example, an intangible asset held primarily for defensive use).

The analyst should realize that the intangible asset value is not derived from the cost measure alone. The intangible asset value is derived from the cost measure (however defined) less appropriate allowances for all forms of depreciation and obsolescence.

Market approach methods are particularly applicable when there is a sufficient quantity of comparable (almost identical) or guideline (similar from a risk and expected return perspective) intangible asset transaction data. These transactions may relate to either sale or license transactions.

Such arm's-length, third-party transactions are often called CUT sales or licenses. The analyst will attempt to extract market-derived valuation pricing indications (e.g., multiples or rates) from these CUT data to apply to the corresponding metrics of the intangible asset.

Income approach methods are particularly applicable in situations where the intangible asset is used to generate a measurable amount of income. This income can be either:

1. operating income (when the intangible asset is used in the business operations) or
2. owner income (when the intangible asset is licensed from the taxpayer/owner to another operator/licensee) to produce royalty income.

Income approach methods may also be used when the taxpayer has elected not to commercialize the intangible asset. This would be the case when this forbearance of use is for the purpose of protecting the income that is produced by the other intangible asset.

Cost Approach Valuation Methods

There are several intangible asset valuation methods within the cost approach. Each valuation method uses its own definition of the intangible asset cost. Two common cost definitions are reproduction cost new and replacement cost new.

Reproduction cost new is the total cost, at current prices, to develop an exact duplicate of the taxpayer's intangible asset. Replacement cost new is the total cost, at current prices, to develop an intangible asset having the same functionality or utility as the intangible asset.

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

There are also other cost definitions that may be applicable to a cost approach valuation. Some analysts consider a measure of cost avoidance as a cost approach method. This method quantifies either historical or prospective costs that are avoided because the taxpayer owns the intangible asset.

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

The cost measurement (whether replacement cost new, reproduction cost new, or some other measure) typically includes four cost components: direct costs (e.g., materials), indirect costs (e.g., engineering and design labor), the intangible asset developer's profit (on the direct cost and indirect cost investment), and an opportunity cost/entrepreneurial

> **". . . the market—that is, the economic environment where actual arm's-length transactions between unrelated parties occur—often provides the best indication of value."**

incentive (to motivate the intangible asset development process).

The intangible asset development material, labor, and overhead costs are unusually easy to identify and quantify. The developer's profit can be estimated using several procedures. It is often estimated as a percentage profit margin on the developer's investment in the material, labor, and overhead costs. The entrepreneurial incentive is often measured as the lost profit during the intangible asset replacement period.

Let's assume it will take two years to develop a replacement patent. If the buyer buys the seller's actual patent, then the buyer can start earning income (either operating income or license income) immediately. If the buyer "builds" its own hypothetical replacement patent, then the buyer will not earn any income (operating or license) during the two-year development period. The two years of lost profits during the hypothetical patent development period represents the opportunity cost of developing a new replacement patent—compared to buying the actual seasoned patent.

All four cost components—direct costs, indirect costs, developer's profit, and opportunity cost—should be considered in the cost approach valuation. So, while the cost approach involves a different set of analyses from the income approach, there are economic-related analyses included in the cost approach.

These economic-related analyses provide indications of both:

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

The cost new (however measured) should be adjusted for losses in value because of physical deterioration, functional obsolescence, and economic obsolescence.

Physical deterioration is the reduction in value due to physical wear and tear. It is unlikely that a taxpayer intangible asset will experience physical deterioration.

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

Economic obsolescence is a reduction in value due to the effects, events, or conditions that are external to—and not controlled by—the intangible asset's current use or condition. The impact of economic obsolescence is typically beyond the control of the intangible asset owner or operator (that is, the taxpayer).

In any cost approach analysis, the analyst will estimate the amounts (if any) of physical deterioration, functional obsolescence, and economic obsolescence. In this estimation, the analyst may consider the intangible asset's actual age—and its expected RUL.

A common cost approach formula for quantifying intangible asset replacement cost new is: reproduction cost new – curable functional obsolescence = replacement cost new. To estimate intangible asset value, the following cost approach formula is commonly used: replacement cost new – physical deterioration – economic obsolescence – incurable functional obsolescence = intangible asset value.

Market Approach Valuation Methods

Analysts typically attempt to apply market approach methods first in the intangible asset valuation. This is because the market—that is, the economic environment where actual arm's-length transactions between unrelated parties occur—often provides the best indication of value.

However, the market approach will only provide meaningful valuation evidence when the taxpayer intangible asset is sufficiently similar to the intangible assets that are transacting (by sale or license) in the marketplace. In that case, the guideline intangible asset sale or license transaction prices may indicate the expected price for the intangible asset.

There are two primary market approach intangible asset valuation methods: the comparable uncontrolled transaction (CUT) method and the comparable profit margin (CPM) method.

In the CUT method, the analyst searches for arm's-length sales or licenses of benchmark intangible assets. In the CPM method, the analyst searches for companies that provide benchmarks to the taxpayer.

In the CUT method, the analyst more likely relies on CUT license (rather than sale) transactions. This is because third-party intangible asset licenses are more common than third-party intangible asset sales. Nonetheless, for both sale and license transactions, the analyst follows a systematic process in the application of the CUT method.

First, the analyst researches the appropriate exchange markets to obtain information about sale or license transactions, involving guideline (i.e., generally similar) or comparable (i.e., almost identical) intangible assets. Such intangible assets should be sufficiently similar to the taxpayer's intangible asset.

Some of the comparison attributes include such characteristics as intangible asset type, intangible asset use, industry in which the intangible asset operates, date of intangible asset sale or license, and so forth.

Second, the analyst verifies the transactional information by confirming that (1) the transactional data are factually accurate and (2) the sale or license exchange transactions reflect arm's-length market considerations.

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

Third, the analyst selects relevant units of comparison (e.g., income pricing multiples or dollars per unit—such as per drawing or per line of code). And, the analyst develops a comparative analysis for each selected unit of comparison. This comparative analysis will identify the relationship between the selected pricing multiple and the intangible asset's financial/operational fundamentals. Next, the analyst quantifies these financial/operational fundamentals for the intangible asset.

Fourth, the analyst compares the selected guideline or comparable intangible asset sale or license transactions with the taxpayer's intangible asset, using the selected elements of comparison. Then, the analyst adjusts the sale or license price of each guideline transaction for any differences between the guideline intangible asset fundamentals and the taxpayer's intangible asset fundamentals. If such comparative adjustments cannot be measured, then the analyst may eliminate the sale or license transaction as a guideline for future valuation consideration.

Fifth, the analyst selects specific pricing metrics for the intangible asset from the range of pricing metrics indicated from the guideline or comparable transactions. The analyst may select pricing multiples in the low end, midpoint, or high end of the range of pricing metrics indicated by the sale or license transactional data. The analyst will select the taxpayer-specific intangible asset pricing metrics based on the analyst's comparison of the taxpayer's intangible asset to the guideline intangible asset.

Sixth, the analyst applies the selected taxpayer-specific pricing metrics to the intangible asset's financial or operational fundamentals (e.g., revenue, income, number of drawings, number of lines of code, and so on). This procedure will typically result in several market-derived value indications for the intangible asset.

Seventh, the analyst reconciles the various value indications produced from the analysis of the guideline sale and/or license transactions into a single value indication. In this final reconciliation procedure, the analyst will summarize and review the transactional data and the quantitative analyses (that is, various pricing multiples) that resulted in each value indication. Finally, the analyst will resolve all of these value indications into a single value indication.

Table 2 describes several of the databases that analysts typically search in order to identify benchmark intangible asset license sale/CUTs. Table 3 describes several of the print sources that analysts typically search in order to identify intangible asset CUTs.

Of course, the analyst may also confer with the taxpayer management to explore whether the taxpayer has entered into any intangible asset license agreements (either inbound or outbound). These license agreements could relate to either the taxpayer's intangible asset or to the benchmark intangible asset.

The CPM method is also based on a comparative analysis. In this valuation method, the analyst is not relying on arm's-length sales or licenses of benchmark intangible asset. Rather, the analyst is searching for benchmark comparable or guideline companies.

The objective of the CPM method is to identify guideline companies that are sufficiently comparative to the taxpayer in all ways except one. The taxpayer, of course, owns the subject intangible asset. Ideally, the selected guideline companies should provide a benchmark to the taxpayer—except that the benchmark companies do not own a comparable intangible asset.

Ideally, the CPM method guideline companies operate in the same industry as the taxpayer. Ideally, the guideline companies have the same types of raw materials and the same types of sources of supply.

Table 2
Market Approach
Comparable Uncontrolled Transaction (CUT) Valuation Method
Common Intangible Asset Sale/License Transaction Databases

RoyaltySource

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

RoyaltyStat, LLC

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

Royalty Connection

www.royaltyconnection.com—Royalty ConnectionTM provides online access to intangible asset (primarily intellectual property) license royalty rate and other license information on all types of technology, patents, trade secrets, and know-how. The data are aggregated from information on all types of technology, patents, trade secrets, and know-how. The data are aggregated from arm's-length sale/license transactions, litigation settlements, and court-awarded royalty order from 1990 to the present. The intangible asset license database is frequently updated. Users can search by industry, product category, or keyword. The information provided includes the consideration paid for the intangible asset license and any restrictions (such as geographic or exclusivity).

ktMINE

www.bvmarketdata.com—ktMINE is an interactive intangible asset (primarily intellectual property) database that provides direct access to license royalty rates, actual license agreements, and detailed agreement summaries. The database contains over 7,800 intangible asset license agreements. The intangible asset license database is updated frequently. License agreements are searchable by industry, keyword, and various other parameters. The full text of each intangible asset license agreement is available.

Table 3
Market Approach
Comparable Uncontrolled Transaction (CUT) Valuation Method
Common Intangible Asset License Transaction Print Sources

AUS Consultants publishes a monthly newsletter, *Licensing Economics Review*, which contains license royalty rates on selected recent intangible asset sale or license transactions. The December issue each year also contains an annual summary of intangible asset license royalty rates by industry.

Gregory J. Battersby and Charles W. Grimes annually author a book called *License Royalty Rates*, which is published by Aspen Publishers. This reference source provides intangible asset license royalty rates for 1,500 products and services in 10 different licensed product categories: art, celebrity, character/entertainment, collegiate, corporate, designer event, music, nonprofit, and sports.

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

Ideally, the guideline companies have the same type of customers. Ideally, the guideline companies produce the same type of products or services.

And, ideally, the only difference should be that the taxpayer has (for example) an established trademark and the guideline companies have generic trademarks. Or, the taxpayer owns the subject patent (for example) and the guideline companies produce unpatented (and presumably inferior) products.

Because of the economic benefit that the intangible asset provides, the taxpayer should earn a higher profit margin or rate of return than the selected guideline companies. This profit margin comparison is usually made at the earnings before interest and taxes (or EBIT) measure of income.

The incremental (or superior) profit margin earned by the taxpayer can then be converted into an intangible-asset-related royalty rate. Typically, all of this excess profit margin is assigned to the intangible asset. This excess profit margin included is attributed to the intangible asset if the intangible asset is the only reason for the taxpayer's superior profit margin.

That royalty rate (derived from the excess profit margin) is then multiplied by the taxpayer revenue in order to estimate the amount of implied royalty income generated from the taxpayer's intangible asset. That hypothetical royalty income is capitalized over the intangible asset's expected RUL.

Typically, the intangible asset limited RUL will result in the use of a limited period direct capitalization (or an annuity) method. However, with adequate maintenance expenditures, the intangible asset may have a very long (or a perpetual) RUL. In that case, the analyst will typically use the perpetuity direct capitalization method. The result of this capitalization procedure is an estimate of the intangible asset's value, according to the CPM method.

Table 4 presents a nonexhaustive list of publicly traded company data sources that the analyst may use to select guideline companies for the CPM method analysis and obtain guideline company profit margin information to use in the CPM method analysis.

In summary, there are several market approach valuation methods. However, these methods are all based on comparative analyses of either comparable intangible asset sales, comparable intangible asset license royalty rates, or comparable (to the taxpayer) companies (that own generic intangible asset).

Income Approach Valuation Methods

In this valuation approach, the intangible asset value is estimated as the present value of the future income from the ownership/operation of the intangible asset.

The present value calculation has three principal components:

1. An estimate of the duration of the intangible asset income projection period, typically measured as the intangible asset's RUL
2. An estimate of the intangible-asset-related income for each period in the projection, typically measured as either taxpayer/owner income (e.g., license royalty income), operator income (e.g., some portion of the taxpayer business income), or both
3. An estimate of the appropriate capitalization rate, typically measured as the required rate of return on an investment in the intangible asset

The RUL relates to the period of time over which the taxpayer expects to receive any measure related to the intangible asset license, use, or forbearance of use. In addition to the term of the RUL, the analyst is also interested in the shape of the RUL curve. That is, the analyst is interested in the annual rate of decay of the future intangible asset income.

Many different intangible asset income measures may be used. If properly applied, these different income measures can be used in the income approach to derive a value indication.

Some of the different income measures include: gross or net revenues, gross income (or gross profit), net operating income, net income before tax, net income after tax, operating cash flow, net cash flow, incremental income, differential income, royalty income, excess earnings income, and several others (such as incremental income).

Table 4
Market Approach
Comparable Profit Margin (CPM) Valuation Method
Common Data Sources for Guideline Company Profit Margin Data

- FactSet Research Systems, Inc.—FactSet
- Hoover's, Inc.—Hoover's Company Records
- Mergent, Inc.—MergentOnline
- Morningstar, Inc.—Morningstar Equity Research
- Standard & Poor's—CapitalIQ
- Thomson Reuters—Thomson ONE Analytics

> **". . . it is important for the analyst to derive the capitalization rate . . . on a basis consistent with the income measure used."**

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

Regardless of the measure of income considered in the income approach, there are several categories of methods that are typically used to value the intangible asset:

- Valuation methods that quantify an incremental level of intangible asset income—that is, the taxpayer will expect a greater level of revenue (however measured) by owning/operating the intangible asset as compared to not owning/operating the intangible asset. Alternatively, the taxpayer may expect a lower level of costs—such as capital costs, investment costs, or operating costs—by owning/operating the intangible asset as compared to not owning/operating the intangible asset.
- Valuation methods that estimate a relief from a hypothetical license royalty payment—that is, these methods estimate the amount of the hypothetical royalty payment that the taxpayer (as licensee) does not have to pay to a third-party licensor for the use of the intangible asset. The taxpayer is "relieved" from having to pay this hypothetical license royalty payment because the taxpayer, in fact, owns the intangible asset.
- Valuation methods that estimate a residual measure of intangible asset income—that is, these methods typically start with the taxpayer's overall business income. Next, the analyst identifies all of the tangible assets and routine intangible assets (other than the subject intangible asset) that are used in the taxpayer business. These assets are typically called contributory assets.

  The analyst then multiplies a fair rate of return times the value of each of the contributory assets. The product of this multiplication is the fair return on all of the contributory assets. The analyst then subtracts the fair return on the contributory assets from the taxpayer's total income. This residual (or excess) income is the income related to the intangible asset.
- Valuation methods that rely on a profit split—that is, these methods typically also start with the taxpayer business income. The analyst then allocates or "splits" this total income between the tangible assets and routine intangible assets and the subject intangible asset.

  The profit split percent (e.g., 20%, 25%, and so on) to the intangible asset is typically based on the analyst's functional analysis of the taxpayer operations. This functional analysis identifies the relative importance of the subject intangible asset and the contributory assets to the production of the total business income.
- Valuation methods that quantify comparative income—that is, these methods compare the taxpayer income to a benchmark measure of income (which, presumably, does not benefit from the use of the intangible asset). Common benchmark income measures include the taxpayer's level of income before the intangible asset development, industry average income levels, or selected guideline publicly traded company income levels.

  A common measure of income for these comparative analyses is the earnings before interest and taxes (or EBIT) margin. When publicly traded companies are used as the comparative income benchmark, the method is often called the comparable profit margin (or CPM) method.

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

In the direct capitalization procedure, the analyst estimates a normalized income measure for one future period (typically, one year) and divides that income measure by an appropriate investment rate of return. The appropriate investment rate of return is called the direct capitalization rate.

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

Typically, the analyst will conclude that the intangible asset has a finite RUL. In that case, the analyst may use the yield capitalization procedure. Or, the analyst may use the direct capitalization procedure with a limited life direct capitalization rate. Mathematically, the limited life capitalization rate is based on a present value of annuity factor (PVAF) for the intangible asset RUL.

In the yield capitalization procedure, the analyst projects the appropriate income measure for several future time periods. The discrete time period is typically based on the intangible asset RUL. This income projection is converted into a present value by the use of a present value discount rate. The present value discount rate is the investor's required rate of return—or yield capitalization rate—over the expected term of the income projection.

The result of either the direct capitalization procedure or the yield capitalization procedure is the income approach value indication.

Valuation Synthesis and Conclusion

In the valuation synthesis and conclusion, the analyst considers the following question: Do the selected valuation approach(es) and method(s) accomplish the analyst's assignment? That is, do the selected approach and method actually quantify the desired objective of the analysis, such as estimating fair market value as of a specified property tax assessment date?

The analyst also considers if the selected valuation approach and method analyzes the appropriate bundle of legal rights. The analyst considers if there are sufficient empirical data available to perform the selected valuation approach and method.

That is, the valuation synthesis considers if there are sufficient data available to make the analyst comfortable with the analysis conclusion. And, the analyst considers if the selected approach and method will be understandable to the intended audience for the valuation.

The analyst also considers which approaches and methods deserve the greatest consideration with respect to the intangible asset RUL. Typically, the intangible asset RUL is an important consideration of each valuation approach.

In the income approach, the RUL will affect the projection period for the income subject to either yield capitalization or direct capitalization.

In the cost approach, the RUL will affect the total amount of obsolescence, if any, from the estimated cost measure—that is, the intangible asset reproduction cost new or replacement cost new.

In the market approach, the RUL will affect the selection, rejection, and/or adjustment of the comparable or guideline sale or license transactional data.

The following factors influence the intangible asset expected RUL:

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

Each of these categories of factors is normally considered in the analyst's RUL estimation. Typically, the life factor that indicates the shortest RUL deserves primary consideration in the valuation synthesis and conclusion.

Ultimately, the analyst uses professional judgment to weight the various valuation approach and method value indications to conclude a final value, based on 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 method to the taxpayer intangible asset life cycle stage and degree of marketability, and the degree of variation in the range of value indications.

Based on the valuation synthesis, the intangible asset final value conclusion can be a point estimate (which is common for property tax valuations) or a value range (which is common for transaction negotiations or license/sale fairness opinions).

Cost Approach Illustrative Valuation Example—Computer Software

Omicron Parking Corporation (OPC) is a leading parking and related services provider. OPC management retained the analyst to estimate the fair market value of the OPC internally developed computer software as of the January 1, 2013, property tax assessment date.

Summary Description of the Intangible Asset

OPC has three internally developed software systems: Omicron Parking Tracker, Omicron Lease Tracker, and Omicron Valet Tracker. These software systems provide the following functionality: automating the accounting processes, streamlining payment processing, improving the timeliness of reporting, and driving operational efficiency. OPC also uses this computer software at the parking lot level, including at the automated pay stations and for other revenue collection activities.

Valuation Approach and Method

Based on the quantity and quality of available data, the analyst selected the cost approach and the replacement cost new less depreciation method to value the software. Management estimated the total effort to replace the current software.

For purposes of this analysis, replacement cost new is defined as the estimated cost to develop (at current prices) a functionally equivalent version of the actual intangible asset. The replacement intangible asset includes the same functional features as the actual intangible asset, but the replacement software is written in a modern generation of programming language.

To estimate the software replacement cost new, the analyst used an hourly software development rate of $150 per hour. This intangible asset development cost was based on market-derived cost data related to outside IT consultants and on the analyst's discussions with OPC management.

The estimated development hours exclude overhead costs, such as project manager salaries and employee benefits. Based on discussion with OPC management, the analyst estimated the overhead costs to be approximately of 10 percent of the software development costs.

The analyst also accounted for a developer's profit and entrepreneurial incentive factor that a software developer would require. The developer's profit provides for a required return on all of the material, labor, and overhead costs that relate to the software development process. The entrepreneurial incentive is the amount of economic benefit required to motivate the intangible asset developer to enter into the development process.

The analyst collectively estimated the developer's profit and the entrepreneurial incentive at 20 percent of total direct and indirect replacement costs. This estimate was based on the required return over the holding period to create the software and market participant profit margins on similar assets.

For software, obsolescence typically occurs in the forms of functional, technological, and economic obsolescence. Based on discussions with OPC management, the analyst assigned functional and technological obsolescence of 20 percent. The analyst reached this conclusion after considering the fact that OPC is in the process of upgrading several of the programs within the three systems.

Exhibit 2
Omicron Parking Corporation
Computer Software
Fair Market Value as of January 1, 2013

	Internally Developed Computer Software	Replacement Cost New Less Depreciation Components	
	Omicron Parking Tracker Replacement Effort	300,000 hours	[a]
+	Omicron Lease Tracker Replacement Effort	250,000 hours	[a]
+	Omicron Valet Tracker Replacement Effort	150,000 hours	[a]
=	Estimated Software Development Hours (000s)	700,000 hours	
×	Estimated Blended Development Rate Per Hour	$150	[b]
=	Indicated Development Costs Before Overhead Adjustment	$105,000,000	
+	Estimated Overhead Cost Percentage	10%	[c]
=	Indicated Total Direct and Indirect Development Costs	$115,500,000	
+	Developer's Profit and Entrepreneurial Incentive Factor	20%	[d]
+	Total Replacement Cost New	$138,600,000	
–	Less: Obsolescence Factor	20%	[e]
=	Indicated Replacement Cost New Less Depreciation	$110,880,000	
=	Computer Software Fair Market Value (rounded)	$110,000,000	

Notes:
[a] Information provided by OPC management.
[b] Based on blended market-derived development cost rates.
[c] Based on overhead costs provided by OPC management.
[d] Based on a market-derived reasonable profit margin and entrepreneurial incentive that would be required in the development of a replacement intangible asset.
[e] Based on the remaining useful life of the subject software.

Cost Approach Example Value Conclusion

As summarized in Exhibit 2, and based on the cost approach and replacement cost new less depreciation method, the fair market value of the OPC internally developed computer software is $110,000,000.

Market Approach Illustrative Valuation Example—Trademarks

Let's assume that Chi Corporation (Chi) is a designer and manufacturer of high-end women's apparel products, particularly sportswear apparel. Management retained the analyst to value the Chi trademarks and trade names as of January 21, 2013, the property tax assessment date.

Summary Description of the Intangible Asset

Companies like Chi regularly license their trademarks to other manufacturers. In fact, Chi has entered into a number of outbound license agreements during the past few years. For that reason, the analyst decided to use the market approach and the relief from royalty method to value the Chi trademarks.

The principle of this valuation method is that the actual owner/operator would be willing to pay a hypothetical third-party owner a royalty payment for the right to use the intellectual property. Because Chi actually owns the subject trademark, it is relieved from having to make a royalty payment to license the trademark from a third-party licensor.

Valuation Approach and Method

The analyst reviewed several databases that report arm's-length intellectual property license agreements, including the KtMine and RoyaltySource databases. Exhibit 3 presents the analyst's selection of arm's-length trademark or trade name license agreements that pertain to the lines of women's apparel products.

These license agreements, which relate to high-end women's apparel brands such as Anne Klein, Danskin, Christian Dior, and Donna Karan, indicated an average and a median market-based royalty rate of 6.2 percent and 6.5 percent, respectively.

The analyst also reviewed the arm's-length royalty rates that Chi actually earns from outbound licensing of its women's apparel products. As presented in Exhibit 4, these royalty rates ranged from 6.0 percent to 6.5 percent for the C&C Laundry, Gotcha/Girl Star, and Jantzen branded products.

Based on the analyst's assessment of the various trademark or trade name arm's-length license agreements in the marketplace and the analyst's consideration of management's plans to showcase the brand within the Chi clothing segment, the analyst concluded a royalty rate of 6.5 percent for the Chi trademark.

Exhibit 3
Chi Corporation
Trademarks and Trade Name License Agreements
Section of CUT License Agreements as of January 1, 2013

Trademark or Trade Name Licensee	Trademark or Trade Name Licensor	Industry in Which the Trademark is Used	Royalty Rate as a % of Revenue
Maxwell Shoe Company, Inc.	Anne Klein, B.D.S, Inc.	Customer nondurables	6.0
Tandy Brands Accessories, Inc.	Various	Men's and women's apparel	5.0
Innovo Group, Inc.	Michael Caruso & Co., Inc.	Men's and women's accessories	6.0
Innovo Azteca Apparel, Inc.	Blondie Rockwell, Inc.	Women's apparel	8.0
Wundies Industries	Danskin, Inc.	Women's apparel	4.5
Various	Christian Dior	Women's apparel	7.5
Fashion Mag Apparel, Inc.	Hachette Filipacchi Presse	Women's apparel	6.0
Yes Clothing Co.	Marbel Sportswear, Inc.	Men's and women's apparel	7.0
Miss Erika, Inc.	McNaughton Apparel Holdings, Inc.	Women's apparel	5.0
Ridgeview Inc.	Ellen Tracey, Inc.	Women's apparel	7.0
Designer Holdings, Ltd.	Donna Karan International, Inc.	Women's apparel	7.0
BIB Ltd.	Mark TM, LLC	Young men's and women's apparel	4.0
Gygnes Designs	Kenzo	Women's apparel	8.0
		Average trademark license royalty rate	6.2
		Median trademark license royalty rate	6.0
		Women's apparel royalty rate	6.5
		Men's and women's apparel royalty rate	6.0
		Women's apparel royalty rate	6.5
		Average Chi trademark license royalty rate	6.3
		Median Chi trademark license royalty rate	6.5
		Selected license royalty rate for Chi trademarks (as a percent of revenue)	6.5

Sources: KtMine and Royalty Source intellectual property license agreement databases.

The analyst calculated the fair market value of a trademark as the present value of the expected after-tax royalty savings attributed to the acquired trademark. The analyst calculated the relieved royalty payment by applying the selected royalty rate to the projected Chi product line revenue.

The analyst applied the selected royalty rate of 6.5 percent to the projected revenue attributed to Chi branded products for the fiscal years ended January 1, 2014, through January 1, 2019. The projected revenue, which was based on management's revenue projections, contemplates a 2 percent annual growth rate in the dollar volume of Chi branded products.

After the year ended January 1, 2019, management expects to replace the Chi trademark and trade name with a new trademark and trade name. Therefore, the analyst selected six years as the trademark RUL.

The analyst reviewed the selected CUT license agreements. In these agreements, the licensor was responsible for the intangible asset maintenance and legal expenses. Therefore, the analyst does not need to adjust the relief from royalty payment for any expenses that would be paid by Chi.

The analyst adjusted the annual royalty payment for income taxes and discounted the after-tax savings to a present value using a present value discount rate. The present value discount rate reflects the risks inherent in the trademark intangible asset. The analyst selected a present value discount rate of 14 percent, which was the Chi cost of capital.

This trademark valuation analysis is summarized in Exhibit 4.

Market Approach Example Value Conclusion

Based on the market approach and the relief from royalty method, the fair market value of the Chi trademarks is approximately $15,300,000.

Income Approach Illustrative Valuation Example—Trade Secrets

Omega Corporation ("Omega") management retained the analyst to estimate the fair market value of its Nitro process trade secret as of December 31, 2012, the property tax assessment date.

The Nitro process is used in the manufacture of Omega's NitroPop soft drink product line. That soft drink production is projected to generate $147 million in revenue for Omega next year.

Exhibit 4
Chi Corporation
Fair Market Value of the Chi Trademarks
Relief from Royalty Method as of January 1, 2013

	Projected Fiscal Year Ended January 1,					
	2014	2015	2016	2017	2018	2019
Trademark Valuation Analysis	$000	$000	$000	$000	$000	$000
Projected product line revenue [a]	84,846	86,543	88,274	90,039	91,480	93,677
Revenue growth rate	2%	2%	2%	2%	2%	2%
Arm's-length license royalty rate [b]	6.5%	6.5%	6.5%	6.5%	6.5%	6.5%
Pretax royalty payment relief	5,515	5,625	5,738	5,853	5,970	6,089
Income taxes at 36% [c]	1,985	2,025	2,066	2,107	2,149	2,192
After-tax royalty payment relief	3530	3600	3672	3746	3821	3897
Present value factor at 14% [d]	0.9366	0.8216	0.7207	0.6322	0.5545	0.4864
Present value of royalty payment relief	3,306	2,958	2,647	2,368	2,118	1,895
Total present value of royalty payment relief	15,292					
Indicated fair market value of Chi trademarks	15,292					
Fair market value of Chi trademarks (rounded)	15,300					

Notes:
[a] Revenue estimates based on Chi management projections.
[b] Royalty rate based on analysis of CUT trademark license agreements.
[c] Based on Chi management estimates.
[d] Estimated Chi cost of capital.

Summary Description of the Intangible Asset

This Omega trade secret relates to the manufacture of a soft drink that uses nitrogen instead of carbon dioxide to create the fizz. The trade secret includes the proprietary manufacturing process by which the soft drink is manufactured and placed in cans with the nitrogen cartridges.

The trade secret is the canning and fizzing manufacturing process (referred to as "the Nitro process") of the NitroPop product recipe and formulation. The nitrogen fizzing process creates a more creamy and more fizzy soda pop. The process works especially well for root beer and cream soda. The process is also used for ginger ale, cola, and other soft drink flavors.

This Nitro process is documented in a proprietary, confidential set of engineering drawings and process flow chart notebook. Omega management has elected not to patent this proprietary process for competitive reasons.

Both the Omega engineers and legal counsel believe that the Nitro process would be patentable. However, if the proprietary process became public knowledge through the patent procedure, management is concerned that the company's competitors could reverse engineer an equally effective manufacturing process that does not violate the patent.

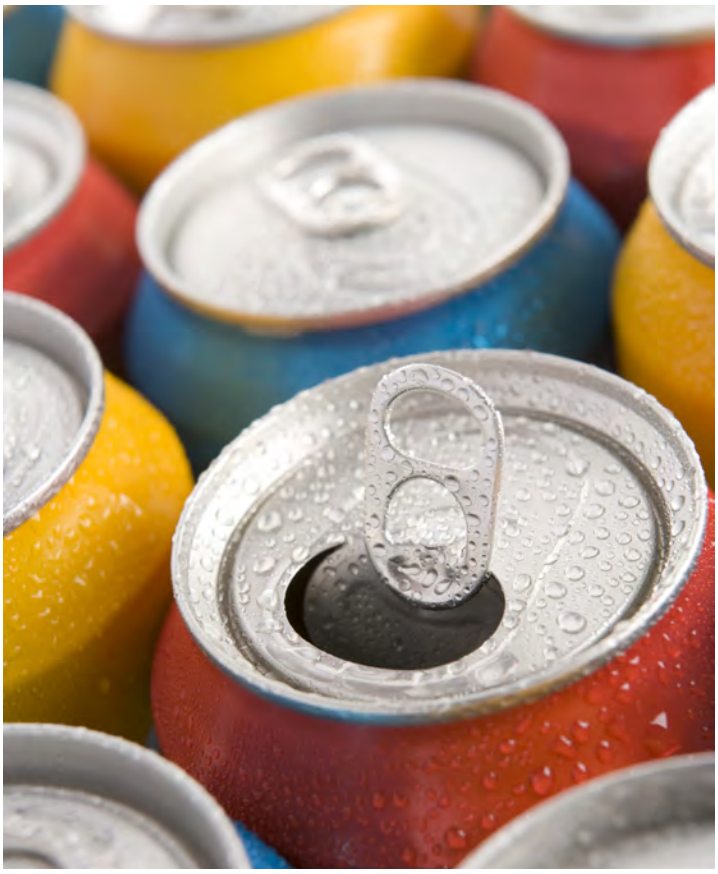
Management considers this proprietary technology to be a trade secret. All of the engineering and other documentation related to this manufacturing process is protected in a locked cabinet in the process engineering department. Only a select number of engineering and production managers have access to that information, and all of those employees have signed nondisclosure agreements.

Management also believes that this trade secret gives the NitroPop product a distinct competitive advantage. Omega marketing personnel stress this product differentiation feature in all of the company's marketing materials and presentations.

Valuation Approach and Method

Based on the quality and quantity of available data and the purpose and objective of the analysis, the analyst decided to use the income approach—and specifically the income differential method.

Using the income differential method, first the analyst projected the prospective cash flow generated by Omega associated with the use of the trade secret in its current operation. Second, the analyst projected the prospective cash flow that would be generated by Omega without the use of the trade secret.



The income approach value indication is based on the difference between the present value indications from the two different operating scenarios (that is, with and without the trade secret in current operation).

Valuation Variables

Management provided the analyst with projections of the NitroPop product unit selling price, unit volume, and market share for the five years after the valuation date. Management also projected the cost of goods sold and the capital expenditure data related to the production of the NitroPop product.

Management prepared a five-year projection of the selling, general, and administrative expenses related to the NitroPop product line. After a due diligence review of the financial projections, including interviews with company management, the analyst concluded that these financial projections were reasonable.

Based on the quality and quantity of these prospective financial data, the analyst concluded that the income approach, using an income differential method, provides a supportable value estimate.

This valuation method measures the difference in the Omega income potential both with and without the operation of the trade secret. The income

potential represents the amount of income that is available to the business owners after consideration of a required level of reinvestment for continued operations and for expected growth. Based on the prospective financial data available, the analyst selected net cash flow as the appropriate measure of income.

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

	Net Sales
Less:	Cost of sales
Less:	Operating expenses
Equals:	Net income before taxes
Less:	Income taxes
Plus:	Depreciation and amortization expense
Less:	Capital expenditures
Less:	Additions to net working capital
Less:	Capital charge on contributory assets
Equals:	Net cash flow

In this analysis, the product line net cash flow was projected over the trade secret's RUL. The analyst discounted the net cash flow projection at an appropriate discount rate to conclude a present value. The difference between the present value of the product line net cash flow with the trade secret in operation and without the trade secret in operation equals the indicated trade secret value.

Based on its industry experience, management expects that it will develop a replacement manufacturing process in about five years. Both Omega and its competitors continuously develop improved soft drink products that are produced by improved manufacturing processes.

The Omega process engineering staff is already working on the development of a new and improved fizzing process. Management expects that the new and improved process will be developed, tested, and implemented within five years. At that time, the current trade secret will be obsolete and completely replaced by the new and improved fizzing process.

This five-year expected RUL is consistent with the company's historical experience regarding its process technology life cycle and with the competitor industry's historical experience regarding a beverage manufacturing process technology life cycle.

Accordingly, management believes that it will enjoy another five years of competitive advantage in this product category due to its current trade secret. The analyst selected five years as the appropriate measure of the intangible asset's RUL.

The analyst selected the following valuation variables for this analysis:

<u>Scenario I: With the trade secret in place</u>

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

<u>Scenario II: Without the trade secret in operation</u>

- Expected sales decrement: –10 percent per year
- Other operating expenses: 11.5 percent of net sales
- Incremental net working capital: 7 percent of net sales
- All other valuation variables remain unchanged from scenario I

The capital charge is included to account for the fair return of the investment of all the contributory assets that are used or used up in the production of the income associated with the trade secret. The contributory assets include net working capital, tangible operating assets, and the trade name.

The projected decrease in product line sales without the trade secret in operation is based on the analyst's discussions with management. This projected sales decrease indicates management's estimate of the consumer response to the decrease in taste, fizziness, and retail shelf life of the company's product without the trade secret. The negative sales growth rate reflects management's projection of the combined effects of decreased unit selling price and decreased unit volume sales.

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

In addition, management projects that it would have to liberalize its customer credit policy in order to stimulate sales of the less desirable NitroPop product. Management estimates that it would have to give 60-day credit terms instead of 30-day credit terms. This expected change in credit policy would affect the company's accounts receivable balances. This change in credit policy would result in an expected change in the company's net working capital investment.

The 15 percent discount rate is based on the Omega weighted average cost of capital.

Income Approach Example Value Conclusion

As presented in Exhibit 5, the sum of the product line discounted cash flow with the trade secret in operation is $49,500,000. As presented in Exhibit 6, the sum of the product line discounted cash flow without the trade secret in operation is $40,900,000. The difference between these two limited life income projections indicates a discounted cash flow differential of $8,600,000.

Based on the income approach and the income differential method summarized in Exhibit 7, the fair market value of the Omega trade secret is $8,600,000.

Attributes of an Effective Intangible Asset Valuation Report

An intangible asset valuation report has several objectives. Of course, the analyst wants to persuade the report reader (whether the reader is the taxpayer management, a taxing authority, an appeal tribunal or board, or a judge or other finder of fact). And, the analyst wants to defend the intangible asset value conclusion.

To accomplish those objectives, the content and format of the intangible asset valuation report should demonstrate that the analyst:

- understood the specific intangible asset valuation assignment;
- understood the intangible asset and the associated bundle of legal rights;

Exhibit 5
Omega Corporation
NitroPop Product Trade Secret
Income Approach
Income Differential Method
Scenario I: With the Subject Proprietary Process in Operation

NitroPop Product Line Projection Variables ($ in 000s)	Year 1	Year 2	Year 3	Year 4	Year 5
Net sales	$ 146,912	$ 161,603	$ 177,764	$ 195,540	$ 215,094
Gross margin	38,197	42,017	46,219	50,840	55,924
Operating expenses	16,160	17,776	19,554	21,509	23,660
Earnings before interest and taxes	22,037	24,241	26,665	29,331	32,264
Income tax expense	(7,933)	(8,727)	(9,599)	(10,559)	(11,615)
Operating income	14,104	15,514	17,066	18,772	20,649
Depreciation expense	1,469	1,616	1,778	1,955	2,151
Capital expenditures	(1,469)	(1,616)	(1,778)	(1,955)	(2,151)
Capital charge on contributory assets	(2,200)	(2,200)	(2,200)	(2,200)	(2,200)
Incremental net working capital investment	(696)	(735)	(808)	(990)	(978)
Net cash flow	11,208	12,580	14,058	15,683	17,471
Present value discount factor [a]	0.9325	0.8109	0.7051	0.6131	0.5332
Discounted net cash flow	10,451	10,201	9,912	9,615	9,315
Sum of product line discounted net cash flow (rounded)	49,500				

Note:
[a] Assumes a mid-year discounting convention.

Exhibit 6
Omega Corporation
NitroPop Product Trade Secret
Income Approach
Income Differential Method
Scenario II: Without the Subject Proprietary Process in Operation

NitroPop Product Line Projection Variables ($ in 000s)	Year 1	Year 2	Year 3	Year 4	Year 5
Net sales	$ 146,912	$ 161,603	$ 177,764	$ 195,540	$ 215,094
Expected sales decrement without NitroPop process	(14,691)	(16,160)	(17,776)	(19,554)	(21,509)
Net sales without proprietary process in operation	132,221	145,443	159,987	175,986	193,584
Gross margin	34,377	37,815	41,597	45,756	50,332
Operating expenses	(15,205)	(16,726)	(18,399)	(20,238)	(22,262)
Earnings before interest and taxes	19,172	21,089	23,198	25,518	28,070
Income tax expense	(6,902)	(4,592)	(8,351)	(9,186)	(10,105)
Operating income	12,270	13,497	14,847	16,331	17,965
Depreciation expense	1,322	1,454	1,600	1,760	1,936
Capital expenditures	(1,322)	(1,454)	(1,600)	(1,760)	(1,936)
Capital charge on contributory assets	(2,200)	(2,200)	(2,200)	(2,200)	(2,200)
Incremental net working capital investment	(876)	(926)	(1,018)	(1,120)	(1,232)
Net cash flow	9,194	10,371	11,629	13,012	14,533
Present value discount factor [a]	0.9325	0.8109	0.7051	0.6131	0.5332
Discounted net cash flow	8,573	8,410	8,199	7,978	7,749
Sum of product line discounted net cash flow (rounded)	40,900				

Note:
[a] Assumes a mid-year discounting convention.

Exhibit 7
Omega Corporation
NitroPop Product Trade Secret
Income Approach
Income Differential Method as of December 31, 2012

Sum of the Product Line Discounted Net Cash Flow:	$ in (000s)
Scenario I: With the subject proprietary process	$49,500
Scenario II: Without the subject proprietary process	40,900
Proprietary process discounted net cash flow differential	8,600
Fair market value of the Omega trade secret (rounded)	$8,600

- collected sufficient financial and operational data;
- collected sufficient industry, market, and competitive data;
- documented the specific economic benefits generated by the intangible asset;
- performed adequate due diligence procedures related to all available data;
- selected and applied all applicable income approach, market approach, and cost approach valuation methods; and
- reconciled all value indications into a final intangible asset value conclusion.

The final (and arguably most important) procedure in the intangible asset analysis is for the analyst to defend the value conclusion in a replicable and well-documented valuation report.

When defending the value conclusion, the written report should:

- explain the intangible asset valuation assignment,
- describe the intangible asset and the associated bundle of legal rights,
- explain the selection or rejection of all generally accepted valuation approaches and methods,
- explain the selection and application of all specific analysis procedures,
- describe the analyst's data gathering and due diligence procedures,
- list all documents and data considered by the analyst,
- include copies of all documents that were specifically relied on by the analyst,
- summarize all of the qualitative analyses performed,
- include schedules and exhibits documenting all of the quantitative analyses performed,
- avoid any unexplained or unsourced valuation variables or analysis assumptions, and
- allow the report reader to be able to replicate all of the analyses performed.

Summary and Conclusion

First, this discussion considered the various types of taxpayer intangible asset analyses that the analyst may be asked to perform. These analyses have the following objective: to estimate the value of intangible assets that are either subject to property taxation or exempt from property taxation.

This objective is particularly important to the centrally assessed taxpayer that is taxed based on the unit principle of valuation. For such centrally assessed taxpayers, it is important to identify and quantify the intangible assets that are not subject to property taxation in the relevant taxing jurisdiction.

"The final (and arguably most important) procedure in the intangible asset analysis is for the analyst to defend the value conclusion in a replicable and well-documented valuation report."

For all intangible asset valuations, the analyst considers the three generally accepted valuation approaches—the cost approach, the market approach, and the income approach. Each of these valuation approaches has the same objective: to arrive at a defined value indication for the intangible asset.

Within each of the three approaches, there are several valuation methods and procedures that may be appropriate for the particular valuation. Several common intangible asset valuation methods were illustrated in this discussion.

The analyst's selection of the specific valuation approaches, methods, and procedures is based on the particular characteristics of the intangible asset, the bundle of legal rights subject to analysis, the quantity and quality of available data, the analyst's ability to perform sufficient due diligence related to that data, the purpose and objective of the specific valuation analysis, and the relevant experience and professional judgment of the individual analyst.

The taxpayer's intangible asset value conclusion is typically based on the analyst's synthesis of the value indications from each applicable valuation approach and method.

These generally accepted valuation approaches, methods, and procedures summarized in this discussion are relevant to intangible asset analyses performed for property tax appeal or litigation purposes.

Accordingly, the taxpayer and legal counsel should be familiar with these generally accepted approaches for purposes of selecting the appropriate analyst, relying on the analyst's intangible asset value conclusion, and defending the analyst's valuation work product.

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