Intellectual Property
Identification and Valuation

Presentation to the
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Discussion Outline

1. Defining the intellectual property valuation assignment
2. Types of intellectual property assignments and types of opinions
3. General purposes of intellectual property valuations
4. Specific reasons for intellectual property valuations
5. Summary of generally accepted approaches and methods
6. Analyst due diligence procedures
7. Intellectual property data sources—comparable sales, licenses, and companies
8. Reaching the valuation synthesis and conclusion
9. Reporting the intellectual property value conclusion
10. Defending the value conclusion before a contrarian challenge
Types of Intellectual Property

- An intellectual property is a commercial intangible asset that enjoys special legal recognition and legal protection.

- The intellectual property special legal status comes from either federal or state statutes.

- There are four types of intellectual property:
  - patents
  - trademarks
  - copyrights
  - trade secrets

- Often, there are commercial intangible assets associated with the subject intellectual property.

- Intellectual property assets are a specific subset of commercial intangible assets
The Financial Accounting Standards Board provides the following list of intangible assets for financial accounting purposes:

- **Marketing-Related Intangible Assets**
  1. newspaper mastheads
  2. trademarks, service marks, trade names, collective marks, certification marks
  3. trade dress
  4. internet domain names
  5. noncompetition agreements

- **Customer-Related Intangible Assets**
  1. customer lists
  2. customer contracts and related customer relationships
  3. noncontractual customer relationships
  4. order or production backlogs
FASB ASC 805-20-55
List of Identifiable Intangible Assets (cont.)

- Artistic-Related Intangible Assets
  1. plays, operas, ballets
  2. books, magazines, newspapers, and other literary works
  3. musical works such as compositions, song lyrics, and advertising jingles
  4. photographs, drawings, and clip art
  5. audiovisual material including motion pictures, music videos, television programs
• Contract-Based Intangible Assets
  1. license, royalty, standstill agreements
  2. advertising contracts
  3. lease agreements
  4. construction permits
  5. construction contracts
  6. construction management, service, or supply contracts
  7. broadcast rights
  8. franchise rights
  9. operating rights
  10. use rights
  11. servicing contracts
  12. employment contracts
FASB ASC 805-20-55
List of Identifiable Intangible Assets (cont.)

• Technology-Based Intangible Assets
  1. patented or copyrighted software
  2. mask works
  3. unpatented technology
  4. databases
  5. trade secrets
IRC Section 197
Amortizable Intangible Assets

The Internal Revenue Code provides the following list of intangible assets for federal income tax purposes:

- 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
IRC Section 197
Amortizable Intangible Assets (cont.)

- 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, and
- any franchise, trademark, or trade name.

The same list appears in the regulations related to IRC Sections 482 and 936.
Patents

- A patent grants an inventor the right to exclude others from making, using, or selling the patented invention for a specific time period.

- There are three types of patents:
  - utility patent – for an invention that has some type of usefulness or utility
  - design patent – “new, original, or ornamental design for an article of manufacture”
  - plant patent – “distinct and new variety of plant”

- Two patents may be issued for the same product; for example:
  - a design patent – for the product design
  - a utility patent – for the product useful characteristics

- A patent must be registered with the USPTO.
Trademarks

• A trademark is used to identify a product brand or a company

• A service mark is used to identify a service provider

• A trade name is a manufacturing business entity’s name

• A service name is a service business entity’s name

• Trade dress is the packaging for a product or décor for a service

• A trademark may be registered with the USPTO
  – registered trademark
  – unregistered trademark
Copyrights

- Copyright law protects “original works of authorship”
- The original work must display some creativity and be fixed in a tangible medium
- The copyright covers the specific expression of an idea – not the idea itself
- Original works may include:
  - literary works
  - musical works
  - dramatic works
  - choreographic works
  - pictorial, graphic, and structural works
  - motion pictures
  - sound recordings
  - architectural works
- A copyright may be registered with the USCO
  - registered copyright
  - unregistered copyright
Trade Secrets

• Any information that has economic value and is not generally known to the public

• Is protected by state (not federal) statute. Most state statutes conform to Uniform Trade Secret Act.

• Typically examples include:
  – information about customers
  – information about employees, suppliers, distributors
  – information about product costs and prices
  – information about new business opportunities
  – information about business methods
  – some databases and know-how

• Cannot be registered with any government agency
General Reasons to Analyze Intellectual Property

1. Transaction (sale or license) pricing and structuring
2. Intercompany use and ownership transfers
3. Financial accounting and fair value reporting
4. Financing collateralization and securitization
5. Litigation claims and dispute resolution
6. Management information and strategic planning
7. Corporate governance and regulatory/contractual compliance
8. Bankruptcy and reorganization analysis
9. License, joint venture, and other development/commercialization opportunities
10. Federal and state taxation planning and compliance
Individual Reasons to Value Intellectual Property

1. Transaction pricing or structuring reasons
   a. pricing the sale of an individual intellectual property or a portfolio of two or more intellectual property assets
   b. pricing the license of an individual intellectual property or a portfolio of two or more intellectual property assets
   c. equity allocation in a business enterprise or joint venture formation when the different investors contribute different tangible assets, commercial intangible assets, and intellectual property to the start-up business
   d. asset allocation to the equity owners in a liquidation of a business enterprise or joint venture when different investors receive tangible assets, commercial intangible assets, or intellectual property in exchange for their equity interests
2. Intercompany use and ownership transfers
   a. the transfers of intellectual property between the wholly-owned subsidiaries (or other business units) of a consolidated business enterprise
   b. the transfer of intellectual property between less than wholly-owned subsidiaries (with different minority shareholders) of a consolidated business enterprise
   c. Product inventory cost accounting for in-process goods transferred between business units with varying intellectual property ownerships in a consolidated business enterprise

3. Financial accounting and fair value reporting
   a. Business combination purchase price allocations among all acquired tangible assets and intangible assets
   b. goodwill and intellectual property annual impairment testing
   c. post-bankruptcy fresh start accounting for all business entity tangible assets and intangible assets
Individual Reasons to Value Intellectual Property (cont.)

4. Financing collateralization and securities
   a. use of intellectual property as collateral on cash flow-based or asset-based corporate debt financings
   b. sale/leaseback or sale/licenseback financing of corporate intellectual property

5. Bankruptcy and reorganization
   a. use of intellectual property as collateral on secured debt
   b. use of intellectual property as collateral or debtor in possession (DIP) secured debt
   c. intellectual property sale or license as a DIP cash generation spinoff opportunity
   d. use of corporate intellectual property in the assessment of a debtor corporation solvency or insolvency
   e. license or operating use of debtor intellectual property as part of plan of reorganization
Individual Reasons to Value Intellectual Property (cont.)

6. Litigation claims and dispute resolution
   a. intellectual property royalty rate analysis in infringement claims
   b. intellectual property breach of contract or noncompete/nondisclosure agreement economic damages claims
   c. intellectual property condemnation, expropriation, eminent domain, or dissipation of corporate assets claims
   d. intellectual property lost profits in interference with business opportunity or lender liability claims
Individual Reasons to Value Intellectual Property (cont.)

7. Management information and strategic planning
   a. formation of intellectual property joint venture, joint development, or joint commercialization agreements
   b. negotiation of inbound or outbound intellectual property use, development, commercialization, or exploitation agreements
   c. analysis of intellectual property-based capital formation alternatives
   d. analysis of intellectual property-based (license, sale, use, etc.) wealth creation alternatives

8. Corporate governance and regulatory compliance
   a. custodial inventory of all owned and licensed intellectual property
   b. assessment of insurance coverage needed on corporate intellectual property
   c. development of defense strategies against infringement, torts, breach of contract, and other wrongful acts
   d. development of defense against dissipation of corporate assets allegation
Individual Reasons to Value Intellectual Property (cont.)

9. Commercialization and development opportunities
   a. identification of intellectual property license, spin-off, joint venture, and other commercialization opportunities
   b. negotiation of intellectual property license, spin-off, joint venture, and other commercialization opportunities

10. Taxation planning and compliance
   a. purchase price allocations among all acquired tangible assets and intangible assets in a taxable business acquisition
   b. depreciation and amortization accounting for purchased tangible assets and intangible assets
   c. charitable contribution deductions of donated intellectual property
   d. intercompany transfer pricing of intellectual property owned by controlled foreign subsidiaries of a multinational corporation
   e. state and local ad valorem property tax compliance and appeals related to exempt (or taxable) intellectual property
Objectives of the Intellectual Property Analysis

1. to estimate a defined value for a specific ownership interest in the intellectual property
2. to measure an appropriate royalty rate or license fee associated with the third party license of the intellectual property
3. to calculate the arm’s-length price (ALP) for the intercompany transfer of intellectual property between controlled foreign entities of a multinational taxpayer corporation
4. to quantify the expected remaining useful life (RUL) of the ownership or operating (or associated rate of change in the value) of the intellectual property
5. to determine the amount of lost profits or other economic damages associated with a damages event suffered by the intellectual property
6. to opine on the fairness (or solvency, adequate consideration, excess benefits, etc.) of an intellectual property sale or license transaction
Elements of the Assignment – Intellectual Property Description

- The first element is a complete definition of the intellectual property.

- That definition should specify exactly what patent, copyright, trademark, or trade secret is the valuation subject.

- This definition should include the registration number and country for the patent or for the copyright and trademark (if registered).

- This definition should describe any commercial intangible assets to be considered with the intellectual property.
Elements of the Assignment – Bundle of Rights

- The second element is a description of the bundle of legal rights.

- Which of the following bundles should be included in the valuation?
  1. fee simple interest
  2. term/reversion interest
  3. licensor/licensee interest
  4. sublicensee interest
  5. territory (domestic/international) interest
  6. product line/industry interest
  7. life/residual interest
  8. use rights
  9. development rights
  10. commercialization/exploitation rights
Elements of the Assignment – License or Contract Terms

The third element describes any contract or license terms in effect

1. Licensor/licensee responsibility common contract terms:
   - identity of the licensor and the licensee
   - term of the agreement (including any renewal options)
   - the 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, etc.
The third element describes any contract or license terms in effect (cont.)

2. Other common intellectual property contract terms:
   - minimum use, production, or sales requirements
   - minimum marketing, promotion, or commercialization expense requirements
   - research and development technology development payments, development completion payments
   - party responsible to obtain the required regulatory approvals
   - milestone license payments
   - rights to any future developments
   - rights to sub-license
Elements of the Assignment – Standard of Value

• The fourth element is the standard (or definition) of value the analyst is asked to conclude:
  – fair value
  – fair market value
  – use value
  – user value
  – owner value
  – investment value
  – acquisition value
  – collateral value
Elements of the Assignment – Premise of Value

• The fifth element is the premise of value that the analyst should assume:
  – 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
Purpose of the Intellectual Property Valuation

• The purpose of the valuation considers the following questions:
  1. what will the intellectual property valuation be used for?
  2. who will rely on (or receive a copy of) the valuation?
  3. what form and format of intellectual property valuation report is required?
  4. are there any legal instructions (e.g., specific statutory definitions, judicial precedent, or reporting requirements) that the analyst should consider?
Data Gathering and Due Diligence

• The valuation analyst will typically gather and analyze information related to the intellectual property current owner/operator.

• Such information will typically include the following:
  1. owner/operator historical and prospective financial statements
  2. owner/operator historical and prospective development/maintenance costs
  3. owner/operator current and expected resource/capacity constraints
  4. description and estimate of the intellectual property economic benefits to the current owner/operator
     • associated revenue increase (e.g., related product unit price/volume, market size/position)
     • associated expense decrease (e.g., expense related to product returns, COGS, SGA, R&D)
     • associated investment decrease (e.g., inventory, capital expenditures)
     • associated risk decrease (existence of intellectual property contracts, decrease of cost of capital components)
     • assessment of intellectual property impact on owner/operator strategic position: SWOT – strengths, weaknesses, opportunities, and threats
Market Potential

- The analyst will consider the intellectual property market potential outside of the current owner/operator.

- The analyst may consider the following factors:
  1. change in the market definition or the market size for an alternative owner/user
  2. change in alternative/competitive uses to an alternative owner/user
  3. the intellectual property ability to create inbound/outbound license opportunities to an alternative owner/user
  4. whether the current owner can (a) operate the intellectual property and also (b) outbound license the intellectual property (in different products, different markets, different territories, etc.)
Review of Financial Projections

- The analyst will review and challenge (a) any owner/operator-prepared financial projections and (b) any owner/operator-prepared measures of intellectual property economic benefits.

- The analyst may perform the following benchmark analyses:
  1. compare prior management projections to prior actual results of operations
  2. compare management projections to current capacity constraints
  3. compare management projections to the current total market size
  4. consider published industry average comparable profit margin (CPM) data
  5. consider guideline publicly traded company CPM data
  6. consider the quality and quantity of available license data
  7. perform remaining useful life (RUL) analysis, with consideration of:
     • legal/statutory life
     • contract/license life
     • technology obsolescence life
     • economic obsolescence life
     • lives of prior generations of the subject IP
     • position of the subject IP in its life cycle
Published Industry Benchmark Analysis
Data Sources

- 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*
Benchmark Analysis Data Sources for Guideline Company Profit Margins

- 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
Common Intellectual Property License Transaction Databases

- **RoyaltySource**
  www.royaltysource.com—The AUS Consultants database provides license transaction royalty rates. The database can be searched by industry, technology, and/or keyword. The information includes royalty rates, name of the licensee and the licensor, a description of property licensed (or sold), the transaction terms, and the original information sources.

- **RoyaltyStat, LLC**
  www.royaltystat.com—RoyaltyStat is a subscription-based database of license royalty rates and license agreements, compiled from Securities and Exchange Commission documents. It is searchable by SIC code or by full text.
Common Intellectual Property License Transaction Databases (cont.)

- **Royalty Connection**

  www.royaltyconnection.com—Royalty Connection™ provides online access to license royalty rate and other license information on all types of technology, patents, trade secrets, and know-how. Users can search by industry, product category, or keyword.

- **ktMINE**

  www.bvmarketdata.com—ktMINE is an interactive database that provides direct access to license royalty rates, actual license agreements, and detailed agreement summaries. License agreements are searchable by industry, keyword, and various other other parameters.
Common Intellectual Property License Transaction Print Sources

• AUS Consultants publishes a monthly newsletter, *Licensing Economics Review*, which contains license royalty rates on recent transactions. The December issue contains an annual summary of license royalty rates by industry.

• Gregory J. Battersby and Charles W. Grimes annually author a book called *License Royalty Rates*, that is published by Aspen Publishers. This reference provides license royalty rates for 1,500 products and services in 10 different licensed product categories.

Intellectual Property Valuation Approaches and Methods

- **Market approach methods**
  - comparable uncontrolled transactions – sales
  - comparable uncontrolled transactions – license
  - comparable profit margin method

- **Cost approach methods**
  - reproduction cost new less depreciation method
  - replacement cost new less depreciation method
  - cost avoidance method

- **Income approach methods**
  - incremental income methods
  - relief from royalty methods
  - differential income methods
  - comparable profit margin methods
  - residual/excess profits methods
  - profit split methods
  - residual profit split methods
Market Approach Valuation Process

- Research the appropriate exchange market for sale or license transactions, involving either “guideline” or “comparable” intellectual property.

- Verify the information by confirming (1) the reported data are correct and (2) the transactions reflect arm’s-length market considerations.

- Select relevant units of comparison (income multipliers or dollars per unit—such as “per drawing,” “per customer,” “per line of code”) and develop a comparative analysis for each unit of comparison.

- Compare the guideline or comparable sale or license transactions with the subject, using the selected elements of comparison; adjust the sale or license price of each transaction to the subject intellectual property.
Market Approach Valuation Process (cont.)

- Calculate the various pricing metrics (for each unit of comparison) from the guideline or comparable transactions. Quantify the mean, median, high, and low pricing metrics.

- Select various pricing metrics (e.g., revenue multiples, income multiples, price per drawings, price per line of code, etc.) appropriate to the subject. The selected pricing metrics may be at the low, middle, or high end of the transaction range. Select subject-specific pricing metrics.

- Apply subject-specific pricing metrics to the subject intellectual property financial or operational fundamentals (e.g., revenue, income, etc.) to conclude one or more value indications.

- Reconcile the various value indications produced from the analysis of the sale or license pricing metrics.
Cost Approach Valuation Process

• Reproduction cost new or replacement cost new

• Four cost components:
  – direct costs
  – indirect costs
  – developer’s profit
  – entrepreneurial incentive

• Physical deterioration

• Functional obsolescence
  – excess capital costs
  – excess operating costs

• Economic obsolescence
  – inability to earn a fair ROI
Income Approach Valuation Process

- Methods that quantify the incremental income level – the owner/operator earns greater revenue or incurs lower costs with the intellectual property.

- Methods that estimate a relief from a hypothetical royalty payment – owner/operator actually owns the intellectual property. Therefore, the owner/operator does not have to inbound license the intellectual property from a hypothetical third party licensor.

- Methods that measure a differential income level – compare the owner/operator income to some benchmark income measure.
Income Approach Valuation Process (cont.)

- Methods that consider comparable companies – compare the owner/operator to selected publicly traded companies; the selected comparable companies don’t operate the intellectual property; assign excess profit margin (above the comparable companies margin) to the subject intellectual property.

- Methods that quantify residual or excess profits – start with owner/operator total operating income; identify all contributory assets; assign a fair rate of return to each contributory asset; total income minus the contributory asset charge equals the residual or excess profits.

- Methods that quantify a profit split – allocate the owner/operator profit margin between (1) the intellectual property and (2) all other contributory assets.

- Residual profit split methods – assign a capital charge to some contributory assets (e.g., NWC, RE, TPP); assign a profit split to the post-capital charge residual income.
Income Tax Amortization Adjustment

• When an intellectual property is purchased as part of the taxable acquisition of a going concern business, the price of that asset may be amortizable for federal income tax purposes.

• This amortization deduction is allowed under Internal Revenue Code Section 197.

• The valuation analyst should realize that:
  – not all intellectual property qualifies as Section 197 intangible assets
  – a Section 197 intangible asset has to be purchased as part of a going concern business
  – the business acquisition has to be a taxable transaction
  – the owner/operator contemplated in the defined standard of value should be a taxpayer that is able to use the income tax deduction
Income Tax Amortization Adjustments Principle

- Applicable only to the income approach value indication
- Start with the intellectual property unadjusted value, estimated at owner/operator effective income tax rate
- Divide the unadjusted value by 15 (i.e., for the 15 year amortization period) to estimate the annual deduction
- Multiply the annual amortization tax deduction by the owner/operator’s marginal tax rate
- Present value the annual income tax savings over the 15 year amortization period
Income Tax Amortization Adjustment Formula

- The value adjustment formula is:

\[
\text{value adjustment factor} = \frac{1}{1 - \text{(income tax rate)} \times (\text{present value annuity factor})}
\]

\[
\text{amortization period}
\]

- Assuming a 40% income tax rate, the adjustment is calculated as follows:

\[
\text{value adjustment factor} = \frac{1}{1 - (40\%) (4.6755)}
\]

\[
\text{15 years}
\]

\[
\text{value adjustment factor} = 14\%
\]

- Assuming that the unadjusted income approach value indication is $1,000, the adjustment is $140 (i.e., $1,000 \times 14\%). The total income approach value indication is $1,140.
# Computer Software Copyright Cost Approach Illustrative Example

<table>
<thead>
<tr>
<th>System No.</th>
<th>Computer Software System</th>
<th>Estimated Software Development Effort in Person Months</th>
<th>Elapsed Time to Develop Replacement Software in Calendar Months</th>
<th>Full Absorption Cost per Person Month (includes direct and indirect cost components)</th>
<th>Indicated RCNLD Method Component $000</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>AS/400</td>
<td>4,531</td>
<td>29</td>
<td>$14,585</td>
<td>66,100</td>
</tr>
<tr>
<td>2</td>
<td>Point of Sale</td>
<td>575</td>
<td>25</td>
<td>14,585</td>
<td>8,400</td>
</tr>
<tr>
<td>3</td>
<td>Tandem</td>
<td>3,304</td>
<td>16</td>
<td>14,585</td>
<td>48,200</td>
</tr>
<tr>
<td>4</td>
<td>Unisys</td>
<td>1,229</td>
<td>5</td>
<td>14,585</td>
<td>17,900</td>
</tr>
<tr>
<td>5</td>
<td>Pioneer</td>
<td>1,807</td>
<td>41</td>
<td>14,585</td>
<td>26,400</td>
</tr>
<tr>
<td>6</td>
<td>Voyager</td>
<td>325</td>
<td>12</td>
<td>14,585</td>
<td>4,700</td>
</tr>
<tr>
<td>7</td>
<td>Host to Host</td>
<td>85</td>
<td>9</td>
<td>14,585</td>
<td>1,200</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>11,856</strong></td>
<td><strong>24</strong></td>
<td><strong>14,585</strong></td>
<td><strong>172,900</strong></td>
</tr>
</tbody>
</table>

Plus: Developer’s profit (rounded)  
Subtotal  
200,600

Plus: Entrepreneurial incentive (rounded)  
Equals: Total replacement cost new  
231,800

Less: Functional obsolescence  
Equals: Subtotal  
194,900

Less: Economic obsolescence, at 19%  
Equals: Computer software RCNLD  
157,900

Fair market value of computer software copyright (rounded)  
$158,000
### Computer Software Copyright

**Cost Approach**

**Functional Obsolescence**

**As of January 1, 2012**

<table>
<thead>
<tr>
<th>Computer Software System</th>
<th>RCN Total Direct and Indirect Cost Components $000</th>
<th>RCN Developer’s Profit and Entrepreneurial Incentive Cost Components</th>
<th>Total RCN Cost Components $000</th>
<th>Percent Functional Obsolescence</th>
<th>Total Functional Obsolescence $000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unisys</td>
<td>17,900</td>
<td>34%</td>
<td>24,000</td>
<td>80%</td>
<td>19,200</td>
</tr>
<tr>
<td>Pioneer</td>
<td>26,400</td>
<td>34%</td>
<td>35,400</td>
<td>50%</td>
<td>17,700</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>36,900</strong></td>
<td></td>
<td><strong>69,400</strong></td>
<td><strong>130%</strong></td>
<td><strong>36,900</strong></td>
</tr>
</tbody>
</table>
Computer Software Copyright Cost Approach Illustrative Example

Computer Software Copyright
Cost Approach
Economic Obsolescence
As of January 1, 2012

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>EBIT profit margin</td>
<td></td>
<td>24$</td>
<td>20%</td>
<td>-16.7%</td>
</tr>
<tr>
<td>Net cash flow margin</td>
<td></td>
<td>12%</td>
<td>10%</td>
<td>-16.7%</td>
</tr>
<tr>
<td>Pre-tax net income margin</td>
<td></td>
<td>15%</td>
<td>12%</td>
<td>-20.0%</td>
</tr>
<tr>
<td>EBIT return on total assets</td>
<td></td>
<td>16%</td>
<td>14%</td>
<td>-12.5%</td>
</tr>
<tr>
<td>EBIT return on net assets</td>
<td></td>
<td>20%</td>
<td>16%</td>
<td>-20.0%</td>
</tr>
<tr>
<td>5-year compound revenue growth rate</td>
<td></td>
<td>6.5%</td>
<td>4.5%</td>
<td>-30.8%</td>
</tr>
<tr>
<td>5-year compound net cash flow growth rate</td>
<td></td>
<td>7.5%</td>
<td>5.5%</td>
<td>-26.7%</td>
</tr>
<tr>
<td>Average sales price per unit sold:</td>
<td></td>
<td>$1,200</td>
<td>$1,050</td>
<td>-12.5%</td>
</tr>
</tbody>
</table>

Mean percent decline in metrics: -19.5%
Median percent decline in metrics: -18.4%
Trimmed mean percent decline in metrics: -18.8%
Selected economic obsolescence indication: -19%
### Trade Secret Income Approach Illustrative Example

<table>
<thead>
<tr>
<th>With the Trade Secret Projection Variables ($ in 000s):</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>EBIT</td>
<td>22,037</td>
<td>24,240</td>
<td>26,665</td>
<td>29,331</td>
<td>32,264</td>
</tr>
<tr>
<td>Income tax</td>
<td>(7,933)</td>
<td>(8,727)</td>
<td>(9,599)</td>
<td>(10,559)</td>
<td>(11,615)</td>
</tr>
<tr>
<td>Operating income</td>
<td>14,104</td>
<td>15,514</td>
<td>17,065</td>
<td>18,772</td>
<td>20,649</td>
</tr>
<tr>
<td>Depreciation expense</td>
<td>1,469</td>
<td>1,616</td>
<td>1,778</td>
<td>1,955</td>
<td>2,151</td>
</tr>
<tr>
<td>Capital expenditures</td>
<td>(1,469)</td>
<td>(1,616)</td>
<td>(1,778)</td>
<td>(1,955)</td>
<td>(2,151)</td>
</tr>
<tr>
<td>Capital charge</td>
<td>(2,200)</td>
<td>(2,200)</td>
<td>(2,200)</td>
<td>(2,200)</td>
<td>(2,200)</td>
</tr>
<tr>
<td>NWC changes</td>
<td>(696)</td>
<td>(735)</td>
<td>(808)</td>
<td>(889)</td>
<td>(978)</td>
</tr>
<tr>
<td>NCF</td>
<td>11,208</td>
<td>12,579</td>
<td>14,057</td>
<td>15,683</td>
<td>17,471</td>
</tr>
<tr>
<td>PV factor</td>
<td>0.9325</td>
<td>0.8109</td>
<td>0.7051</td>
<td>0.6131</td>
<td>0.5332</td>
</tr>
<tr>
<td>Discounted NCF</td>
<td>10,451</td>
<td>10,200</td>
<td>9,912</td>
<td>9,616</td>
<td>9,315</td>
</tr>
</tbody>
</table>

Sum of discounted NCF (rounded) 49,500
## Trade Secret
### Income Approach Illustrative Example

With the Trade Secret Projection Variables ($ in 000s):

<table>
<thead>
<tr>
<th></th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>EBIT</td>
<td>19,172</td>
<td>21,089</td>
<td>23,198</td>
<td>25,518</td>
<td>28,070</td>
</tr>
<tr>
<td>Income tax</td>
<td>(6,902)</td>
<td>(7,592)</td>
<td>(8,351)</td>
<td>(9,186)</td>
<td>(10,105)</td>
</tr>
<tr>
<td>Operating income</td>
<td>12,270</td>
<td>13,497</td>
<td>14,847</td>
<td>16,331</td>
<td>17,965</td>
</tr>
<tr>
<td>Depreciation expense</td>
<td>1,322</td>
<td>1,454</td>
<td>1,600</td>
<td>1,760</td>
<td>1,936</td>
</tr>
<tr>
<td>Capital expenditures</td>
<td>(1,322)</td>
<td>(1,454)</td>
<td>(1,600)</td>
<td>(1,760)</td>
<td>(1,936)</td>
</tr>
<tr>
<td>Capital charge</td>
<td>(2,200)</td>
<td>(2,200)</td>
<td>(2,200)</td>
<td>(2,200)</td>
<td>(2,200)</td>
</tr>
<tr>
<td>NWC changes</td>
<td>(876)</td>
<td>(926)</td>
<td>(1,018)</td>
<td>(1,120)</td>
<td>(1,232)</td>
</tr>
<tr>
<td>NCF</td>
<td>9,194</td>
<td>10,372</td>
<td>11,629</td>
<td>13,012</td>
<td>14,533</td>
</tr>
<tr>
<td>PV factor</td>
<td>0.9259</td>
<td>0.7982</td>
<td>0.6881</td>
<td>0.5932</td>
<td>0.5114</td>
</tr>
<tr>
<td>Discounted NCF</td>
<td>8,512</td>
<td>8,279</td>
<td>8,002</td>
<td>7,718</td>
<td>7,432</td>
</tr>
<tr>
<td>Sum of discounted NCF without trade secret</td>
<td>39,900</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sum of discounted NCF with trade secret</td>
<td>49,500</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>= Trade secret fair market value</td>
<td><strong>9,600</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Market Approach—Drug Patent Guideline License Agreements

<table>
<thead>
<tr>
<th>License</th>
<th>Licensee</th>
<th>Licensor</th>
<th>Start Date</th>
<th>License Term</th>
<th>Royalty %</th>
<th>Other Consideration</th>
<th>Type of Drug</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pfizer, Inc.</td>
<td>Columbia U.</td>
<td>2009</td>
<td>15</td>
<td>6</td>
<td>$4m</td>
<td>ED</td>
</tr>
<tr>
<td>2</td>
<td>Glaxo Smith Kline</td>
<td>Autogen</td>
<td>2009</td>
<td>10</td>
<td>5</td>
<td>$10m</td>
<td>cardiovascular</td>
</tr>
<tr>
<td>3</td>
<td>Johnson &amp; Johnson</td>
<td>Nobel N.V.</td>
<td>2009</td>
<td>12</td>
<td>10</td>
<td></td>
<td>antiobesity</td>
</tr>
<tr>
<td>4</td>
<td>Merck &amp; Co.</td>
<td>All Saints Hospital</td>
<td>2009</td>
<td>10</td>
<td>4.5</td>
<td></td>
<td>vascular</td>
</tr>
<tr>
<td>5</td>
<td>Pharmacia &amp; Upjohn</td>
<td>MIT</td>
<td>2008</td>
<td>15</td>
<td>5.5</td>
<td></td>
<td>pulmonary hypertension</td>
</tr>
<tr>
<td>6</td>
<td>Wyeth-Ayerst</td>
<td>MD, LP</td>
<td>2008</td>
<td>20</td>
<td>8-10</td>
<td></td>
<td>botanical ED</td>
</tr>
</tbody>
</table>
## Market Approach—Drug Patent Royalty Rate Adjustment Grid

<table>
<thead>
<tr>
<th>License</th>
<th>Patent Royalty</th>
<th>Comparable to Subject</th>
<th>Size of Market</th>
<th>Market Growth Rate</th>
<th>Relative Market Share</th>
<th>Other Consideration</th>
<th>Adjusted Royalty %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>6</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>—</td>
<td>+.5%</td>
<td>6%</td>
</tr>
<tr>
<td>2</td>
<td>5</td>
<td>2</td>
<td>++</td>
<td>++</td>
<td>0</td>
<td>+1%</td>
<td>7%</td>
</tr>
<tr>
<td>3</td>
<td>10</td>
<td>2</td>
<td>+</td>
<td>0</td>
<td>0</td>
<td>-2%</td>
<td>8%</td>
</tr>
<tr>
<td>4</td>
<td>4.5</td>
<td>3</td>
<td>+</td>
<td>0</td>
<td>-</td>
<td>-</td>
<td>4%</td>
</tr>
<tr>
<td>5</td>
<td>5.5</td>
<td>2</td>
<td>+</td>
<td>+</td>
<td>0</td>
<td>-</td>
<td>6%</td>
</tr>
<tr>
<td>6</td>
<td>8-10</td>
<td>3</td>
<td>++</td>
<td>-</td>
<td>-</td>
<td>-2%</td>
<td>7%</td>
</tr>
</tbody>
</table>

Mean: 6.3%
Trimmed Mean: 6.5%
Median: 6.5%
Mode: 6.5%
Selected License Royalty Rate: 6.5%
## Drug Patent Market Approach Conclusion

<table>
<thead>
<tr>
<th>Valuation Analysis (in $ millions)</th>
<th>Projection Period</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Year 1</td>
</tr>
<tr>
<td>Revenue growth rate</td>
<td>10%</td>
</tr>
<tr>
<td>Product revenue</td>
<td>440</td>
</tr>
<tr>
<td>License royalty rate</td>
<td>6.5%</td>
</tr>
<tr>
<td>Royalty expense</td>
<td>29</td>
</tr>
<tr>
<td>Maintenance expense</td>
<td>10</td>
</tr>
<tr>
<td>Net license expense</td>
<td>19</td>
</tr>
<tr>
<td>PV factor</td>
<td>.9091</td>
</tr>
<tr>
<td>PV net license expense</td>
<td>17</td>
</tr>
<tr>
<td>PV net license expense</td>
<td>90</td>
</tr>
<tr>
<td>Patent fair market value</td>
<td>90</td>
</tr>
</tbody>
</table>
The Effective IP Valuation Report

• In order to encourage the reader’s acceptance, the IP valuation report should be:
  – clear, convincing, and cogent
  – well-organized, well-written, and well-presented
  – free of grammar, punctuation, spelling, and mathematical errors
  – procedurally and mathematically replicable, without the use of any unexplained or unsourced valuation variables

• The persuasive valuation report will tell a narrative story that:
  – defines the valuation analyst’s assignment,
  – describes the analyst’s IP data gathering and due diligence procedures,
  – justifies the analyst’s selection of (and rejection of) the generally accepted valuation approaches, methods, and procedures,
  – explains how the analyst performed the valuation synthesis and reached the final value conclusion,
  – defends the analyst’s IP value conclusion, and
  – describes all of the data sources that the analyst relied on (and includes copies of non-public source documents)
Conclusion

• The intellectual property valuation approaches, methods, and procedures selected will depend on:
  – the particular characteristics of the intellectual property,
  – 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 final intellectual property value conclusion is typically based on a synthesis of the value indications from each applicable valuation approach and method.