# PIERCE LAW

## Twelfth Annual Advanced Licensing Institute
## July 2003

## "Intellectual Property Valuation"

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Mr. Smith is President of AUS Consultants, located in Moorestown, New Jersey. A graduate of Harvard University, he has been in the valuation profession for forty years. His consulting practice includes advising clients as to the value of all types of intellectual property, as well as business enterprises and closely-held stock. He also consults with clients on royalties and in support of business transactions as well as litigation.

He has written extensively on a variety of valuation subjects and has lectured in North and South America, Europe and Asia. Mr. Smith is Chairman of the Advisory Board, Licensing Economics Review, and serves on the Pierce Law Advisory Committee on Intellectual Property. He is an Adjunct Professor at Pierce Law and is the Founding Director of the Intellectual Property Management Institute.

Mr. Smith is also a member of the International Trademark Association and active in committee work with that organization. Other memberships include the Licensing Executives Society.

Mr. Smith is the author of Corporate Valuation - A Business and Professional Guide, and Trademark Valuation. He is co-author of Valuation of Intellectual Property and Intangible Assets (currently in its third edition and translated into Korean and Japanese), Intellectual Property - Licensing and Joint Venture Profit Strategies (in second edition), and a contributing author to Transfer Pricing Handbook and Intellectual Property Assets in Mergers and Acquisitions, all published by John Wiley & Sons.

## SOME INTRODUCTORY COMMENTS

A. LICENSING

Many have considered licensing to be an "art form" to be learned only by experience, as one might have been apprenticed to Antonio Stradivari in order to learn violin making. While this is true to some degree, I believe there are tools in use in the financial community that can be very helpful in the process.

Licensing is not just a legal exercise, it is a commercial transaction whose objective is to exploit intellectual property for the economic benefit of licensor and licensee.

B. WHY IS IT NECESSARY TO CONSIDER *VALUE* IN LICENSING?

There is an essential relationship between the value of property and the amount that would be paid for the right to use it. The amount of rent that is paid for the right to occupy real estate is related to the market value of the property.

This is also true for royalties paid for the right to use intellectual property. Royalty considerations are an essential part of the licensing process.

## II. UNDERLYING PRINCIPLES – The Business Enterprise

A. LICENSE = $

A license, just like intellectual property, does not by itself create economic benefit.

Intellectual property must be teamed with complementary assets.

The resulting asset portfolio is analogous to a business enterprise.

B. MICROSOFT EXAMPLE

Investors and auditors have quite a different opinion about the "value" of the Microsoft business.

Is this a real difference of opinion or a difference in underlying definition?

We can also observe a surprising change in the value of Microsoft - $73.8 billion in 4 months.

Which of Microsoft's assets took the hit?

1. The enterprise value equation:
   Enterprise value = value of debt and equity = value of monetary, tangible and intangible assets.
2. Loss in value was mostly in the intangible asset classification

C. IMPACT ON MICROSOFT AS LICENSOR

Its portfolio of technology has lower value

Perhaps due to lower income

Perhaps due to increased risk in the eyes of investors

## D. THE BUSINESS ENTERPRISE

Every business enterprise, large or small, is comprised of three elements: monetary assets, tangible assets, and intangible assets.

## E. SPECIFIC ELEMENTS OF THE BUSINESS ENTERPRISE

1. Monetary Assets

Monetary assets comprise inventories, cash investments, work in process, accounts receivable, less current liabilities. Some refer to this asset as "net working capital".

2. Tangible Assets

These assets include land, buildings, machinery and equipment, mineral reserves, and the like.

3. Intangible Assets

Included in this category is computer software, assembled work force, patents, trademarks, copyrights, proprietary technology, customers, favorable contracts, and goodwill.

## F. INTANGIBLE ASSETS

1. Rights
   a. Contractual
2. Relationships
   a. Non-Contractual
3. Intellectual Property
4. Undefined
   a. Goodwill
   b. Elements of a Going Concern

G. BUSINESS ENTERPRISE CHARACTERISTICS

1. The business enterprise is a portfolio of assets - analogous to an investment portfolio.

2. Important Characteristics of Risk, Financing, and Liquidity

a. Monetary Assets

Monetary assets tend to be liquid and versatile, can often be financed with debt, and are relatively low-risk assets to own, requiring a relatively low rate of return on investment.

b. Tangible Assets

Tangible assets can be either general or special purpose, with a corresponding range of liquidity. Debt financing is usually available for general purpose tangibles, and return rates approximate mortgage or corporate bond rates.

c. Intangible Assets

Intangible assets tend to be non-liquid, with a very narrow market, and command the highest rates of return because of their increased risk and their degree of specialization.

H. ESSENTIAL RELATIONSHIP OF EARNINGS AND VALUE

There is an essential and very important concept which relates the value of a business enterprise to the value of its underlying assets. If a business is persistently not earning an adequate return on the value of its underlying assets, the value of the enterprise is best realized in a disposal of those assets in some form of liquidation value. As the earnings of the business rise, so does the value of the underlying assets, to a maximum of their replacement cost. Increases in the value of the enterprise after that point result from the creation of new intangible assets or unidentified goodwill.

It is very important to keep this relationship in mind and to continually test the valuation of specific business assets with the value of the business enterprise as a whole. The sum of the parts must be commensurate with the value of the whole.

Is this an outmoded concept in the "dot-com" New Economy?? NO. Recent trends in the markets have again proved that earnings and value are interdependent.

## III. UNDERLYING PRINCIPLES – What is Value ?

A. PREMISE OF VALUE

This is an essential specification in the appraisal process and one without which an appraisal assignment cannot proceed. Value does not exist in the abstract and must be addressed within the context of time, place, potential owners, and potential uses. This is often put in the form of a question -- value "to whom and for what purpose?".

1. Cost of Reproduction New

This refers to the cost, as of the appraisal date, to construct identical property.

2. Cost of Replacement

This is the cost that would be incurred to obtain a property with equivalent utility to the subject.

3. Book Value

This is sometimes referred to as book cost or net book value and refers to the original cost of an asset reduced by accounting depreciation. Since property accounting practices vary widely and original costs can change markedly over time, this is not really a measure of value, though it is often referred to in those terms.

Tax Basis

This is the original coast of property reduced by tax depreciation. The tax laws of most nations specify depreciation rates or periods that are often different than those used for accounting purposes.

4. Market Value

This is an often misunderstood term and is often used synonymously with "fair market value", "fair value", 'true value", or "exchange value" which terms are often found in appraisal literature, the law, and in court decisions.

We utilize two definitions of market value, one which embodies the concept of an exchange of property and describes the conditions of that exchange, and another definition which presents market value in economic terms as being represented by all future benefits of ownership compressed into a single payment.

## IV. UNDERLYING PRINCIPLES – Valuation Methods

### A. THE THREE BASIC METHODS

1. Cost Approach
2. Market Approach
3. Income Approach

### B. COST APPROACH

The cost approach seeks an indication of asset value by estimating the cost of reproduction or cost of replacement of the asset, less an allowance for loss in value due to physical, functional, and economic causes.

1. Cost Approach Applied to Intellectual Property

a. Trended Historical Costs

If one can determine, from accounting or other cost records, the amount of costs expended in the development of the intellectual property, together with the date at which those costs were expended, one can develop an indication of the current reproduction cost by the use of price trends for the types of labor and other expenses incurred. One must know something about the derivation of the price trends used, in order to form an opinion as to whether the result represents reproduction cost or replacement cost.

b. Estimates of Current Cost

An alternative method is to estimate the number of man hours of work effort that would be required by the various skills involved to develop the subject asset using the skills and technology of today. The hourly cost of those various skills, including base salary, benefits, overhead, and the like, are utilized to develop the total current cost.

2. Cost Approach Cautions

Trending historical costs may bring forward the costs of inefficiencies incurred in the original development of the intellectual property. It may also bring forward the costs of outmoded technologies, operating inefficiencies, and will reflect whatever accounting techniques were utilized at the time to record the costs.

One must remember that the objective is to estimate the cost to replace the or functionality of the asset.

C. MARKET APPROACH

The market approach seeks an indication of value from the exchanges of comparable property in an active marketplace.

There are relatively few instances where the market approach can be utilized for intangible assets and intellectual property. Intangibles are not commonly exchanged free of other assets in arms-length transactions of sufficient number to provide a "market." In addition, the determination of comparability can be quite difficult.

1. The Market Approach as a Check

The market approach can be useful as a check when one is developing an indication of value for intellectual property by another method. If the subject is comparable enough to assets that are sold in the market place, value indications by an income or cost approach can be checked against the market prices for similar property which should set the upper limit of value.

D. THE INCOME APPROACH

1. Income Capitalization

The income approach seeks to value property by calculating the present value of the future economic benefits of ownership in a capitalization of income process.

The underlying theory behind the income approach is to calculate the present value of a future stream of earnings by a direct capitalization (which assumes that the income will continue unchanged forever) or a technique of calculating the present value of discrete amounts of income to be received in the future (a discounted cash flow process).

In order to utilize this technique one needs to know the: (a) amount of income, (b) the duration of the income, and (c) the amount of risk of achieving it.

This technique can also be used for early stage projects. In this instance, there may be some period of time during which cash flows from the product will be negative (due to development and marketing expenses) and then some period of time of income growth after the product is introduced to the marketplace. Income forecasts are more difficult to quantify in this situation, but the technique can still be used.

2. Understanding Present Value

a. Time value of money concept. ("A bird in the hand...")

b. Direct capitalization

c. Direct capitalization with growth

d. Discounting

3. The Impact on Value of Time and Interest Rate

4. Applying the Income Approach

a. Quantifying the economic benefit - investigate what the IP does to the business - the "but for..." principle - "follow the dollars" technique.

b. Quantifying the risk - identify the risk elements - go to the market for risk surrogates.

c. Quantify the economic remaining life - be alert to the possibility of a transfer of protection between forms of IP.

e. A more complex cash flow model. The base case presents the business enterprise value without the benefit of the IP technology, and then we measure the business enterprise value with the technology.

f. Sophisticated techniques such as Monte Carlo or options forecasting may be introduced as a substitute for the "single outcome" DCF.

## V. UNDERLYING PRINCIPLES – The License

*A. THE MOST BEAUTIFULLY CRAFTED LICENSE IS A FAILURE UNLESS IT ENABLES COMMERCIAL SUCCESS*

B. EXPLOITATION INVOLVES INVESTING CAPITAL AND LABOR FOR THE PURPOSE OF EARNING A RETURN

1. A fundamental law of nature (certainly of business!)

C. LICENSING TRANSACTIONS MUST BE EVALUATED THE SAME WAY THAT WE EVALUATE OTHER COMMERCIAL TRANSACTIONS.

D. BASIC INVESTMENT TRANSACTIONS

1. Investment for a Return

a. Labor and capital invested

b. Return of and return on

2. Business Plan as Surrogate

a. Usually covers all the steps

E. BASIC LICENSE TRANSACTION

1. USE OF INTELLECTUAL PROPERTY IN RETURN FOR CASH, RIGHTS, ETC.

a. An exchange of rights for cash. This is the basic licensing transaction. We must also remember that both licensor and licensee may have income and expenses associated with the transaction, but not a part of it. They also have their own particular situation with respect to taxes, business strategy, emotions.

b. "Bundle of Rights"

c. Licensing economics - every licensing clause and term has some economic impact on one or both of the parties.

d. The growing importance of IP

## VI. UNDERLYING PRINCIPLES - Royalties

A. WE MUST REMEMBER THAT A ROYALTY IS:

1. A payment in exchange for rights
2. A sharing of the economic benefits of exploitation

B. EXAMINING THE VARIOUS INCOME STREAMS ASSOCIATED WITH IP IN A LICENSING SITUATION

1. Applying the cost, market and income approaches. Cost approach ignores the EBA and ignores the concept of sharing between licensee and licensor. The market approach suggests that you use the same EBA and sharing scheme as others. The income approach focuses on the EBA and the sharing process.

C. THE RELATIONSHIP OF VALUE AND ROYALTY

D. THE LICENSE CONTROLS THE ALLOCATION OF VALUE BETWEEN LICENSOR AND LICENSEE

1. "Water Rights"

a. A licensing analogy – the relationship of underlying asset value and royalties.

b. A licensing analogy - how the license controls the allocation of economic benefit and value.

c. Just like Hoover Dam.

E. USING THE COST, MARKET AND INCOME APPROACHES

1. Cost Approach – not recommended

2. Market Approach – use with caution

3. Income Approach – strongly recommended because it focuses on defining the economic benefit and the sharing of that between licensor and licensee.

F. USING DCF FOR ROYALTY RATE ANALYSIS

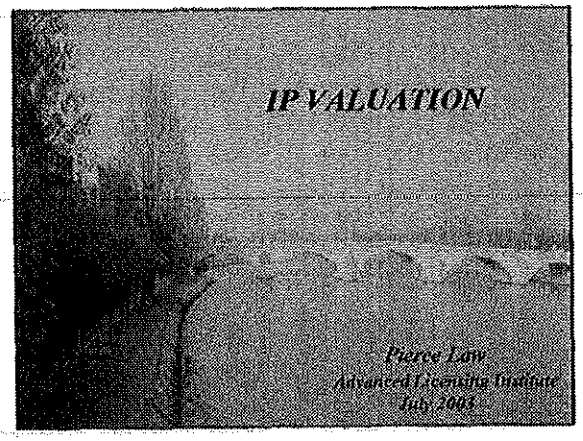
1. Base case
2. Introducing the economic benefit
3. Calculating a royalty

G. SHARING THE ECONOMIC BENEFIT

1. What determines the sharing % ? Risk, amount of investment, success prospects AND the structure of the license. You can't determine the royalty until the major license terms are decided.

H. THE ECONOMICS OF THE LICENSEE'S BUSINESS IS CONTROLLING

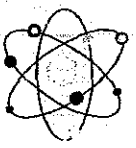
I. UNLESS YOU'RE MICHAEL JORDAN, MICKEY MOUSE OR TIGER WOODS




## LICENSING IS BOTH

## ART.....and.....SCIENCE



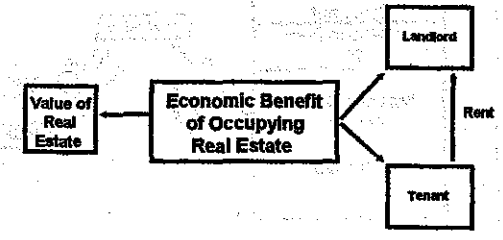


and.....MAGIC



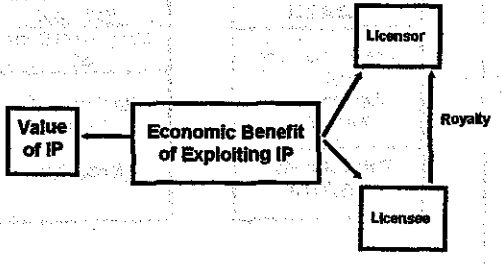
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## WHY DO WE TALK ABOUT VALUATION IN A LICENSING SEMINAR ?




3

## WHY DO WE TALK ABOUT VALUATION IN A LICENSING SEMINAR ?




4



## UNDERLYING PRINCIPLES -

## The Business Enterprise



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## Turning a License into $

Rights obtained by license + Complementary Assets (*Money, Buildings, Machinery, People, Customers, Products, Services*) = $

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## Turning a License into $

Complementary Assets

*Money*
*Buildings*
*Machinery*
*People*
*Customers*
*Products*
*Services*

=

BUSINESS ENTERPRISE

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ON 12/31/2001,
INVESTORS THOUGHT MICROSOFT
STOCK WAS WORTH $ 356.8 BILLION

MICROSOFT's FINANCIAL STATEMENTS
SAID IT WAS WORTH $ 48.1 BILLION

**WHO WAS RIGHT ??**

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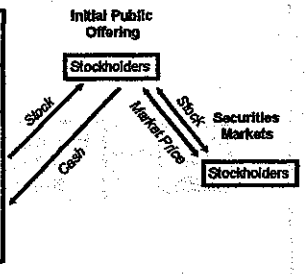
## Microsoft Balance Sheet

| Current Assets $39.6 bill | Current Liabilities $11.1 bill |
|---|---|
| Plant, Property and Equipment $2.3 bill | Long-Term Debt $0 |
| Other Assets $17.3 bill | Stockholder's Equity $ 48.1 bill |

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## Microsoft Balance Sheet

| Current Liabilities $11.1 bill |
|---|
| Long-Term Debt $0 |
| Stockholder's Equity $ 48.1 bill |




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## Microsoft Value Balance Sheet

| Current Assets $39.6 bill | Current Liabilities $11.1 bill |
|---|---|
| Plant, Property and Equipment $2.3 bill | Long-Term Debt $0 |
| Other Assets $17.3 bill | Stockholder's Equity $ 345.7 bill |
| Intangible Assets $308.7 bill | |
| **$367.9 bill** | **$367.9 bill** |

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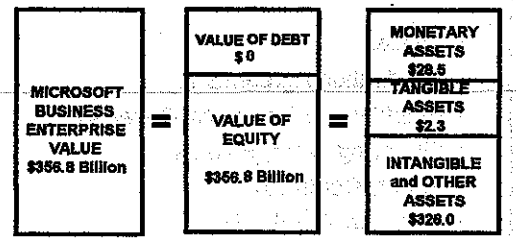
ON 12/31/2001,
INVESTORS THOUGHT MICROSOFT
STOCK WAS WORTH $ 356.8 BILLION

FOUR MONTHS LATER,
INVESTORS THOUGHT MICROSOFT
STOCK WAS WORTH $ 283.0 BILLION

**WHAT HAPPENED TO**
**$ 73.8 BILLION ??**

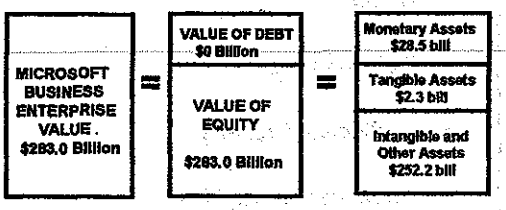
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## 12/31/01 Microsoft Value



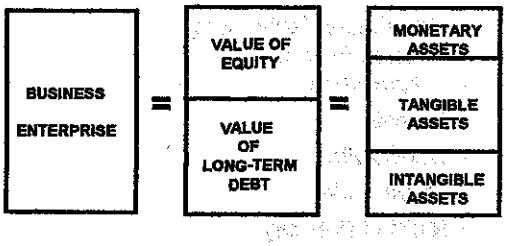

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## 4/30/02 Microsoft Value




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## Business Enterprise




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## ELEMENTS OF THE BUSINESS ENTERPRISE

**MONETARY ASSETS**

**Cash, Inventories, Work in Process, Finished Goods, Accounts Receivable**
**LESS:**
**Accounts Payable and other Current Liabilities**

**"Net Working Capital"**

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## ELEMENTS OF THE BUSINESS ENTERPRISE

**TANGIBLE ASSETS**

**Land, Land Improvements, Buildings Machinery and Equipment, Vehicles**

**"Plant, Property and Equipment"**

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## ELEMENTS OF THE BUSINESS ENTERPRISE

**INTANGIBLE ASSETS**

**Computer Software, Assembled Workforce, Favorable Contracts, Customer Relationships, Intellectual Property**

**"Goodwill or (ugh!) Going Concern Value"**

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## INTANGIBLE ASSETS

- Rights
- Relationships
- Intellectual Property
- Undefined Intangibles

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## Rights

- Leases
- Distribution Agreements
- Employment Contracts, Covenants
- Financing Arrangements
- Supply Contracts
- Licenses, Certifications
- Franchises

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## Relationships

- Trained and Assembled Workforce
- Customer Relationships
- Distribution Relationships

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## Intellectual Property

- Proprietary Technology
  - Trade Secrets
  - Know-how
- Patents
- Copyrights
- Trademarks
- Right of Publicity

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## Proprietary Technology

- **Formulas, Recipes, Specifications**
- **Management, Accounting, Mfg. Procedures**
- **Formations, Plays, Training programs**
- **Marketing Strategies**
- **Artistic Techniques**
- **Customer Lists, Routes, Demographic Studies**
- **Job Files, Product test results**
- **Business Knowledge - Suppliers, Lead times, Cost and pricing data**

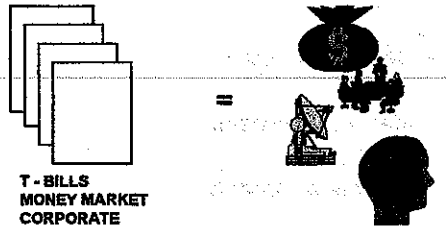
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## Undefined Intangibles

- Goodwill
- Elements of a Going Concern ("going concern value")

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## BUSINESS ENTERPRISE is a PORTFOLIO



T - BILLS
MONEY MARKET
CORPORATE BONDS
EQUITIES
LOTTERY TICKETS

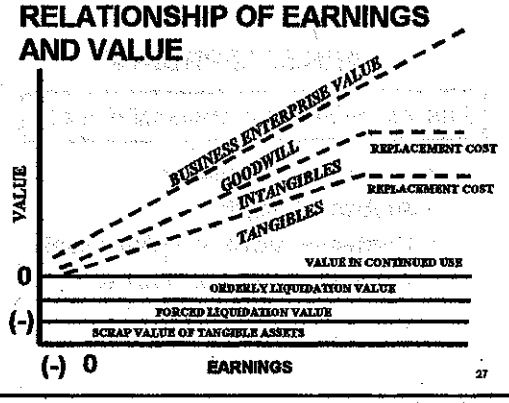
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## BUSINESS ASSET CHARACTERISTICS

| | MONETARY | TANGIBLE | INTANGIBLE |
|---|---|---|---|
| | CASH<br>RECEIVABLES<br>INVENTORY | GENERAL PURPOSE | SPECIAL PURPOSE | TECHNOLOGY<br>RIGHTS<br>TRADEMARKS |
| RETURN REQUIREMENT | 5 - 10 % | 10 - 15 % | 15 - 40 % |
| FINANCING | DEBT | EQUITY | |
| INVESTMENT QUALITIES | LIQUID<br>VERSATILE | NON-LIQUID<br>NARROW MARKET | |

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## RELATIONSHIP OF EARNINGS AND VALUE

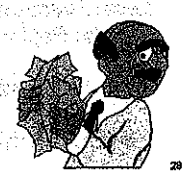



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## UNDERLYING PRINCIPLES -

### What is Value ?



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## PREMISE OF VALUE

- Cost of Reproduction
- Cost of Replacement
- Book Value
- Tax Basis
- Market Value

  **Fair Market Value, Fair Value, Exchange Value Orderly / Forced Liquidation Value, Investment Value**

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## PREMISE OF VALUE

### MARKET VALUE

**"The amount at which a property would exchange between a willing buyer and seller, neither under compulsion, each having knowledge of the facts, and with equity to both."**

**or**

**"The present value of the future economic benefits of ownership."**

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## UNDERLYING PRINCIPLES -

Valuation Methods



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## VALUATION METHODS

- Cost Approach
- Market Approach
- Income approach

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## COST APPROACH

Cost of Reproduction or
Cost of Replacement

Less: Physical Depreciation
Less: Functional Obsolescence
Equals: Replacement Cost Less Depreciation

Less: Economic Obsolescence

Equals: MARKET VALUE

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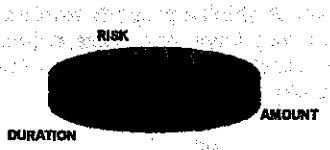
## MARKET APPROACH

Analyze evidence of transactions of:

- Comparable Property
- At Arm's Length
- Contemporaneous to Appraisal
- In an Active, Public Market

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## INCOME APPROACH




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## PRESENT VALUE (direct cap)

DIRECT CAPITALIZATION

$$PV = \frac{\text{AMOUNT (\$)}}{\text{RATE (\%)}}$$

Used when we are to receive an unchanging amount in each period into perpetuity

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## PRESENT VALUE (direct cap with growth)

**DIRECT CAPITALIZATION with GROWTH**

$$PV = \frac{\text{AMOUNT} \times (1 + \text{Growth Rate})}{(\text{Rate} - \text{Growth Rate})}$$

Used when we are to receive a constantly growing amount each year into perpetuity

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## PRESENT VALUE (discounting)

**DISCOUNTING**

$$PV = \frac{\text{AMOUNT 1}}{(1 + \text{Rate})} + \frac{\text{AMOUNT 2}}{(1 + \text{Rate})^2} + \frac{\text{AMOUNT 3}}{(1 + \text{Rate})^3} + \cdots$$

Used when we are to receive varying amounts in each period for a finite number of periods.

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## PRESENT VALUE of $ 300,000

To be received in:

| | 1 YEAR | 2 YEARS | 5 YEARS | 10 YEARS |
|---|---|---|---|---|
| @ 4% | $288,000 | $277,000 | $246,000 | $201,000 |
| @ 15% | 258,000 | 223,000 | 142,000 | 68,000 |
| @ 25% | 234,000 | 183,000 | 87,000 | 25,000 |

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## INCOME APPROACH (NPV = PV future benefits..)




= NET PRESENT VALUE

"The present value of the future economic benefits of ownership."

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## QUANTIFYING THE ECONOMIC BENEFIT

- Enables the use of lower cost materials
- Enables the use of less material
- Reduces the amount of labor
- Increases speed of production
- Improves quality / Reduces defects
- Eliminates or reduces environmental and/or safety hazards
- Results in premium pricing
- Provides economies of scale
- Provides purchasing power
- Relieves the owner of the cost to create

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## "FOLLOW THE DOLLARS" TO THE ECONOMIC BENEFIT

| | |
|---|---|
| Sales Revenue | *Premium Price* |
| Cost of Goods Sold | *Economies of Scale, Labor, Mat'l Savings* |
| Gross Profit | |
| Selling, Gen'l & Admin. | *Operating Exp. Benefit* |
| Pre-tax Profit | |
| Taxes | |
| Net Income | |

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## INCOME RISK

- WILL WE RECEIVE IT ?
- WILL WE RECEIVE IT IN THE EXPECTED AMOUNT ?
- WILL WE RECEIVE IT WHEN EXPECTED ?
- MUST WE INVEST TO GET IT ?
- MUST WE INVEST IN "BIG LUMPS" ?
- HOW LONG MUST WE WAIT FOR INCOME TO START ?

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## RATES OF RETURN

1.9% - Money market
2.00-3.00% - Short-term Treasury Notes, Bills
4.75% - Prime rate
4.90% - 5-year CD's
5.90% - 30-year Treasury bonds
6.30% - 30-year mortgage commitments
7.00-10.00% - Corporate bonds
9.00-12.00% - High-yield bonds
9.90-10.90% - Large company equities (Treasury plus 4-5%)
4-5%)
11.90-13.90% - Small company equities (plus 6-8%)
20% - 2nd or 3rd stage venture capital
40% - Venture capital, early commercialization
50% - Venture capital, early stage

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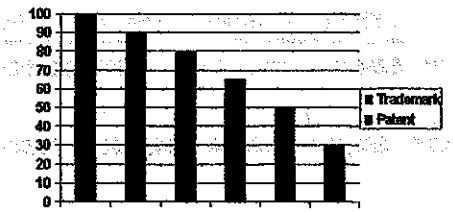
## INCOME DURATION (economic life vs. legal...)

ECONOMIC LIFE = the period during which it is profitable to use an asset

MAY OR MAY NOT BE =
Legal Life
Physical Life
Technological Life
Depreciable Life

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## TRANSFER OF VALUE BETWEEN FORMS OF INTELLECTUAL PROPERTY




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**DISCOUNTED CASH FLOW MODEL - BASE CASE**

| | | | | | |
|---|---|---|---|---|---|
| SALES | $10,000 | $11,000 | $12,000 | $14,000 | $15,000 |
| COST OF GOODS SOLD | 4,000 | 4,400 | 4,800 | 5,600 | 6,000 |
| GROSS PROFIT | 6,000 | 6,600 | 7,200 | 8,400 | 9,000 |
| OPERATING EXPENSES | 3,000 | 3,300 | 3,600 | 4,200 | 4,500 |
| GENERAL & ADMINISTRATIVE | 1,500 | 1,650 | 1,800 | 2,100 | 2,250 |
| INCOME BEFORE TAXES | 1,500 | 1,650 | 1,800 | 2,100 | 2,250 |
| INCOME TAXES | 600 | 660 | 720 | 840 | 900 |
| NET INCOME | $ 900 | $ 990 | $ 1,080 | $ 1,260 | $ 1,350 |
| DEPRECIATION | 200 | 200 | 200 | 300 | 300 |
| ADDITIONS TO NWC | 0 | 50 | 100 | 200 | 50 |
| ADDITIONS TO PLANT | 50 | 50 | 150 | 75 | 75 |
| NET CASH FLOW | $1,050 | $1,090 | $1,030 | $1,285 | $1,525 |
| PRESENT VALUE | $979 | $984 | $726 | $788 | $913 |
| TOTAL PRESENT VALUE | $4,190 | | | | |

47

**DISCOUNTED CASH FLOW MODEL - WITH TECHNOLOGY BENEFIT**

| | | | | | |
|---|---|---|---|---|---|
| SALES | $10,000 | $11,000 | $12,000 | $14,000 | $15,000 |
| COST OF GOODS SOLD | 4,000 | 4,400 | 4,800 | 5,600 | 6,000 |
| TECHNOLOGY BENEFIT | -400 | -440 | -480 | -560 | -600 |
| GROSS PROFIT | $8,400 | $7,040 | $7,680 | $8,960 | $9,600 |
| OPERATING EXPENSES | 3,000 | 3,300 | 3,600 | 4,200 | 4,500 |
| GENERAL & ADMINISTRATIVE | 1,500 | 1,650 | 1,800 | 2,100 | 2,250 |
| INCOME BEFORE TAXES | 1,900 | 2,090 | 2,280 | 2,660 | 2,850 |
| INCOME TAXES | 760 | 836 | 912 | 1,064 | 1,140 |
| NET INCOME | $ 1,140 | $ 1,254 | $ 1,368 | $ 1,596 | $ 1,710 |
| DEPRECIATION | 200 | 200 | 200 | 300 | 300 |
| ADDITIONS TO NWC | 0 | 50 | 100 | 200 | 50 |
| ADDITIONS TO PLANT | 50 | 50 | 150 | 75 | 75 |
| NET CASH FLOW | $1,290 | $1,354 | $1,318 | $1,621 | $1,885 |
| PRESENT VALUE | $1,205 | $1,098 | $929 | $994 | $1,005 |
| TOTAL PRESENT VALUE | $5,229 | | | | |

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UNDERLYING PRINCIPLES -

The License



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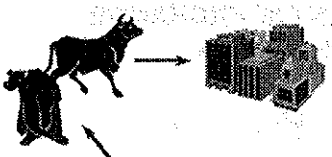
The Most Beautifully Crafted License

is a Failure ... Unless

it Enables Commercial Success



## BASIC INVESTMENT TRANSACTION



SALES
COGS
OPER. EXP.
TAXES
CAPITAL COSTS

RETURN ON INVESTMENT

51

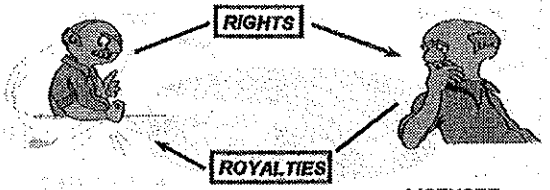
## BASIC INVESTMENT TRANSACTION



SALES
COGS
OPER. EXP.
TAXES
CAPITAL COSTS

RETURN ON INVESTMENT

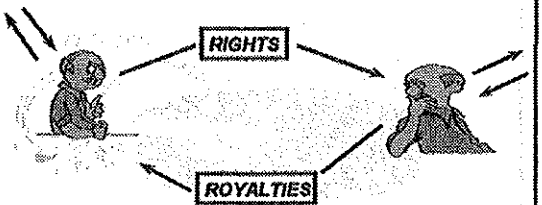
52




LICENSOR

LICENSEE

53

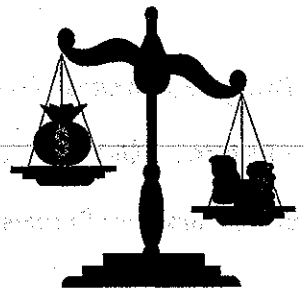



LICENSOR

LICENSEE

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## LICENSING ECONOMICS



***ALMOST EVERY CLAUSE HAS SOME ECONOMIC WEIGHT***

55

## Financial Impact of License Clauses

| | PRESENT VALUE |
|---|---|
| Primary Royalty Stream | $520,000 |
| Technology Grantbacks | 35,000 |
| Sublicense Royalties | 75,000 |
| Administration, auditing, quality control | (90,000) |
| Providing technical assistance | (50,000) |
| Indemnification - best case | (25,000) |
| Indemnification - worst case | (250,000) |
| NET PRESENT VALUE | $485,000 |
| NET PRESENT VALUE | $240,000 |

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## UNDERLYING PRINCIPLES -

**Royalties**



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## ROYALTY :

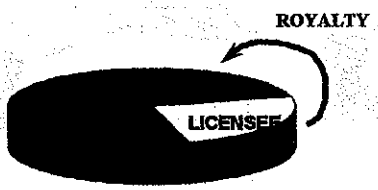
**A PAYMENT IN EXCHANGE FOR RIGHTS**

**or**

**A SHARING OF THE ECONOMIC BENEFITS OF EXPLOITATION**

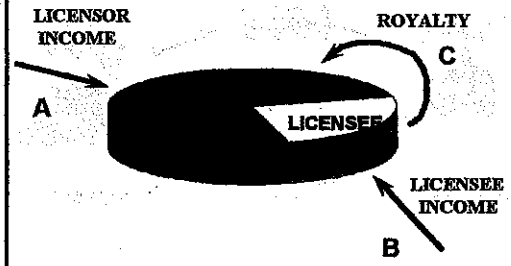
58

## THE LICENSING TRANSACTION



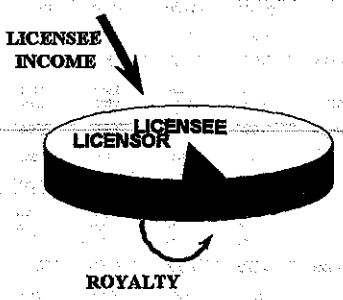

59

## THE LICENSING TRANSACTION



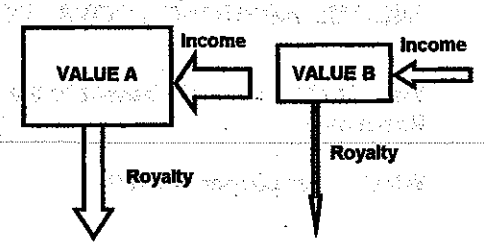

60

## THE LICENSING TRANSACTION




61

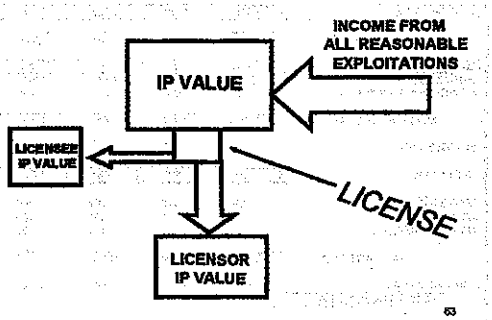
## Relationship of Value and Royalty



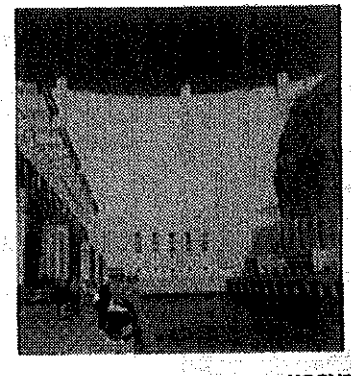

*INCOME : VALUE*
*ROYALTY : INCOME*
*ROYALTY : VALUE*

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## LICENSE CONTROLS THE ALLOCATION OF VALUE




63



HOOVER DAM

## COST APPROACH ROYALTY

What did it cost to develop the IP ?

Set a royalty that will recoup the cost.

**NO !!**

65

## MARKET APPROACH ROYALTY

What royalties have others paid or received ?

What is the "industry standard" ?

**MAYBE !!**

66

## INCOME APPROACH ROYALTY

**What is the economic benefit to the licensee ?**

**What is our proper share ?**

**YES !!**

67

**DISCOUNTED CASH FLOW MODEL - BASE CASE**

| | | | | | |
|---|---|---|---|---|---|
| SALES | $10,000 | $11,000 | $12,000 | $14,000 | $15,000 |
| COST OF GOODS SOLD | 4,000 | 4,400 | 4,800 | 5,600 | 6,000 |
| GROSS PROFIT | 6,000 | 6,600 | 7,200 | 8,400 | 9,000 |
| OPERATING EXPENSES | 3,000 | 3,300 | 3,600 | 4,200 | 4,500 |
| GENERAL & ADMINISTRATIVE | 1,500 | 1,650 | 1,800 | 2,100 | 2,250 |
| INCOME BEFORE TAXES | 1,500 | 1,650 | 1,800 | 2,100 | 2,250 |
| INCOME TAXES | 600 | 660 | 720 | 840 | 900 |
| NET INCOME | $ 900 | $ 990 | $ 1,080 | $ 1,260 | $ 1,350 |
| DEPRECIATION | 200 | 200 | 200 | 300 | 300 |
| ADDITIONS TO NWC | 0 | 50 | 100 | 200 | 50 |
| ADDITIONS TO PLANT | 50 | 50 | 150 | 75 | 75 |
| NET CASH FLOW | $1,050 | $1,090 | $1,030 | $1,285 | $1,525 |
| PRESENT VALUE | $979 | $984 | $726 | $788 | $913 |
| TOTAL PRESENT VALUE | $4,190 | | | | |

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**DISCOUNTED CASH FLOW MODEL - WITH BENEFIT OF IP**

| | | | | | |
|---|---|---|---|---|---|
| SALES | $10,000 | $11,000 | $12,000 | $14,000 | $15,000 |
| COST OF GOODS SOLD | 3,600 | 3,960 | 4,320 | 5,040 | 5,400 |
| GROSS PROFIT | 6,400 | 7,040 | 7,680 | 8,960 | 9,600 |
| OPERATING EXPENSES | 3,000 | 3,300 | 3,600 | 4,200 | 4,500 |
| GENERAL & ADMINISTRATIVE | 1,500 | 1,650 | 1,800 | 2,100 | 2,250 |
| INCOME BEFORE TAXES | 1,900 | 2,090 | 2,280 | 2,660 | 2,850 |
| INCOME TAXES | 760 | 836 | 912 | 1,064 | 1,140 |
| NET INCOME | $ 1,140 | $ 1,254 | $ 1,368 | $ 1,596 | $ 1,710 |
| DEPRECIATION | 200 | 200 | 200 | 300 | 300 |
| ADDITIONS TO NWC | 0 | 50 | 100 | 200 | 50 |
| ADDITIONS TO PLANT | 50 | 50 | 150 | 75 | 75 |
| NET CASH FLOW | $1,290 | $1,354 | $1,318 | $1,621 | $1,885 |
| PRESENT VALUE | $1,203 | $1,096 | $929 | $994 | $1,005 |
| TOTAL PRESENT VALUE | $5,229 | | | | |

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**DISCOUNTED CASH FLOW MODEL - WITH ROYALTY PAYMENT**

| | | | | | |
|---|---|---|---|---|---|
| SALES | $10,000 | $11,000 | $12,000 | $14,000 | $15,000 |
| COST OF GOODS SOLD | 3,600 | 3,960 | 4,320 | 5,040 | 5,400 |
| GROSS PROFIT | 6,400 | 7,040 | 7,680 | 8,960 | 9,600 |
| ROYALTY EXPENSE 4.0% | 400 | 440 | 480 | 560 | 600 |
| OPERATING EXPENSES | 3,000 | 3,300 | 3,600 | 4,200 | 4,500 |
| GENERAL & ADMINISTRATIVE | 1,500 | 1,650 | 1,800 | 2,100 | 2,250 |
| INCOME BEFORE TAXES | 1,500 | 1,650 | 1,800 | 2,100 | 2,250 |
| INCOME TAXES | 600 | 660 | 720 | 840 | 900 |
| NET INCOME | $ 900 | $ 990 | $ 1,080 | $ 1,260 | $ 1,350 |
| DEPRECIATION | 200 | 200 | 200 | 300 | 300 |
| ADDITIONS TO NWC | 0 | 50 | 100 | 200 | 50 |
| ADDITIONS TO PLANT | 50 | 50 | 150 | 75 | 75 |
| NET CASH FLOW | $1,050 | $1,090 | $1,030 | $1,285 | $1,525 |
| PRESENT VALUE | $979 | $984 | $726 | $788 | $913 |
| TOTAL PRESENT VALUE | $4,190 | | | | |

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## Options for Sharing the Economic Benefit

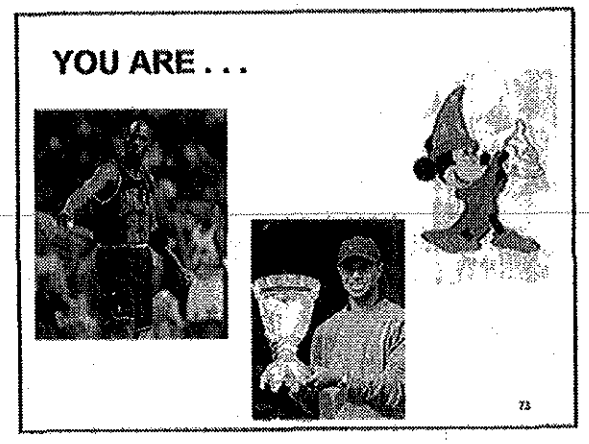
| | | |
|---|---|---|
| **Business Enterprise Value** | | |
| with technology benefit | $ | 5,229 |
| without technology benefit | $ | 4,190 |
| **Economic Benefit Attributable to Technology** | $ | 1,039 |
| **Assume 50-50 Split** | | |
| economic benefit retained by licensor | $ | 520 |
| economic benefit granted to licensee | $ | 520 |
| **Options for Payments to Licensor** | | |
| Running Royalty on Net Sales | | 2 percent |
| Lump-sum Upfront Royalty | | $520 |
| Five equal annual payments | | $240 |
| Royalty "holiday" for 1 year, then Running Royalty | | 2.5 percent |

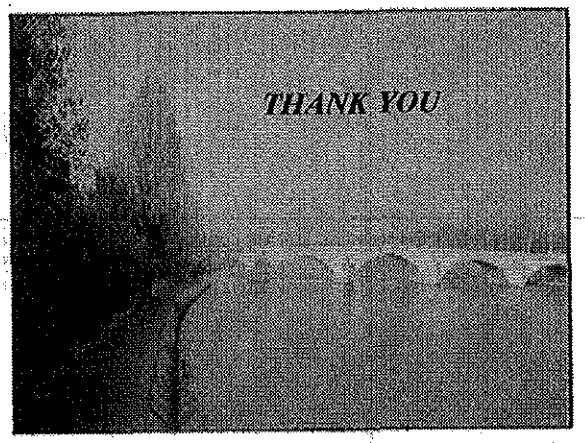
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## THE LICENSING TRANSACTION IS CONTROLLED BY THE ECONOMICS OF THE LICENSEE'S BUSINESS

**unless . . . .**

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YOU ARE . . .
73


THANK YOU

