IP

VALUATION

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"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 thirty-five 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 China. Mr. Smith is Chairman of the Advisory Board, Licensing Economics Review, and serves on the Advisory Committee on Intellectual Property, and is an Adjunct Professor at Franklin Pierce Law Center.

An Accredited Senior Appraiser of the American Society of Appraisers, 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 second edition and translated into Japanese), Intellectual Property - Licensing and Joint Venture Profit Strategies (in second edition), and a contributing author to Transfer Pricing Handbook and The New Role of Intellectual Property in Commercial Transactions, all published by John Wiley & Sons.

I. SOME INTRODUCTORY COMMENTS

A. WHAT IS A LICENSE REALLY ABOUT?

B. WE TEND TO LOOK AT IT AS A LEGAL EXERCISE

1. That is our training - to protect the property interests of our clients

2. The urge to make the deal just a little bit better

C. BUT IT IS NOT JUST A LEGAL EXERCISE, OR A PHILANTHROPIC ACTIVITY - IT IS A COMMERCIAL TRANSACTION

1. The objective is to make money - by exploiting intellectual property

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

E. EXPLOITATION IS INVESTING CAPITAL AND LABOR FOR THE PURPOSE OF EARNING A RETURN

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

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

II. BASIC INVESTMENT TRANSACTIONS

A. INVESTMENT FOR A RETURN

1. Labor and capital invested

2. Return <u>of</u> and return <u>on</u>

B. BUSINESS PLAN AS SURROGATE

1. Usually covers all the steps

III. BASIC LICENSE TRANSACTION

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

1. 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.

2. "Bundle of Rights"

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

4. The growing importance of IP

IV. VALUATION AND INVESTMENT FUNDAMENTALS

A. THE BUSINESS ENTERPRISE

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

1. The Balance Sheet View

Some prefer to look at a business enterprise in terms of an accounting balance sheet. In that structure, intangible assets usually do not appear but would, if they were included, be part of the asset side along with current assets and plant property and equipment. The offsetting entry would be an addition to stockholders' equity on the liability side of the balance sheet which is usually evident in the market value of the common stock of an enterprise exceeding the book value.

B. 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.

C. INTANGIBLE ASSETS

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

D. 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.

E. 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.

V. VALUATION CONCEPTS IN LICENSING AND JOINT VENTURE TRANSACTIONS

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.

4. Fair Market Value

This is an often misunderstood term and is used synonymously with "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 fair market value, one which embodies the concept of an exchange of property and describes the conditions of that exchange, and another definition which presents fair market value in economic terms as being represented by all future benefits of ownership compressed into a single payment.

B. THREE COMMONLY ACCEPTED METHODS

1. 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.

2. Market Approach

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

3. Income Approach

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.

C. COST APPROACH

The cost approach develops an indication of fair market value by subtracting physical depreciation, and functional and economic obsolescence from cost of reproduction new or cost of replacement of the subject asset.

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 utility or functionality of the asset.

D. MARKET APPROACH

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.

E. THE INCOME APPROACH

1. Income Capitalization

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 advantage - investigate what the IP does to the business - the "but for..." principle - "follow the dollar" benefit.

   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.

   d. A simple case - "Relief from Royalty".

   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.

VI. ROYALTIES

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

   1. Applying the cost, market and income approaches.

B. USING DCF FOR ROYALTY RATE ANALYSIS

   1. Base case

   2. Introducing the economic benefit

   3. Calculating a royalty

C. APPLYING DCF TO A LICENSE

   1. Present value of license clauses

2. Primary and secondary economic drivers

   a. Revenue forecast

3. Licensee base case

4. Measuring the effect of intellectual property on the licensee

5. Calculating the royalty

VII. KEYSTONE PRINCIPLE OF LICENSING ECONOMICS

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

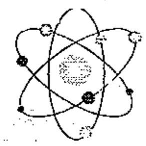
B. UNLESS YOU'RE DISNEY, MICHAEL JORDAN, OR THE DALLAS COWBOYS

LICENSING ECONOMICS
and the
VALUATION OF
INTELLECTUAL PROPERTY

Franklin Pierce Law Center
Advanced Licensing Institute
July, 1998

LICENSING IS BOTH

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



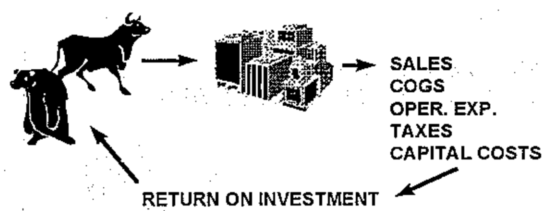
and.....MAGIC

The Most Beautifully Crafted License

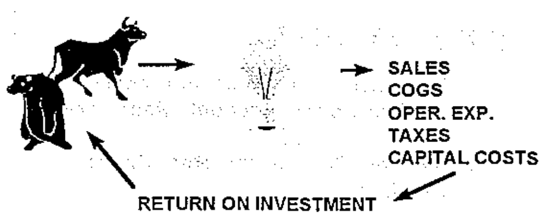
is a Failure ... Unless

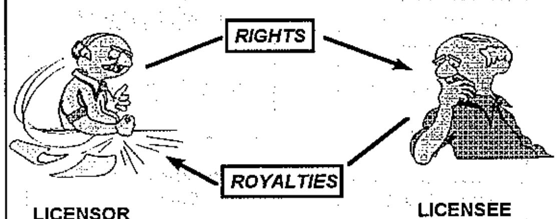
it Enables Commercial Success

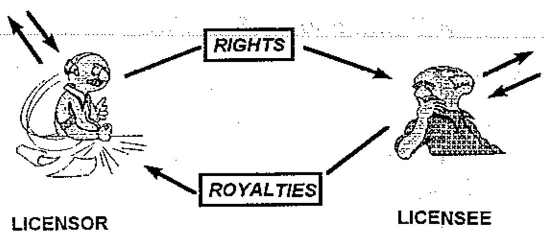
BASIC INVESTMENT TRANSACTION



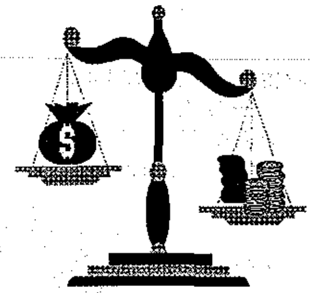
BASIC INVESTMENT TRANSACTION







LICENSING ECONOMICS



ALMOST EVERY CLAUSE HAS SOME ECONOMIC WEIGHT

VALUATION AND INVESTMENT FUNDAMENTALS

Business Enterprise

BUSINESS ENTERPRISE	=	VALUE OF EQUITY	=	MONETARY ASSETS
				TANGIBLE ASSETS
		VALUE OF LONG-TERM DEBT		INTANGIBLE ASSETS

Balance Sheet View of the Business Enterprise

Current Assets	**Current Liabilities**
Plant, Property and Equipment	**Long-Term Debt**
Other Assets	**Stockholder's Equity**
Intangible Assets and Intellectual Property	

ELEMENTS OF THE BUSINESS ENTERPRISE

<u>MONETARY ASSETS</u>

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

"Net Working Capital"

ELEMENTS OF THE BUSINESS ENTERPRISE

TANGIBLE ASSETS

Land, Land Improvements, Buildings
Machinery and Equipment, Vehicles

"Plant, Property and Equipment"

ELEMENTS OF THE BUSINESS ENTERPRISE

INTANGIBLE ASSETS

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

"Goodwill or (ugh!) Going Concern Value"

INTANGIBLE ASSETS

- Rights
- Relationships
- Intellectual Property
- Undefined Intangibles

Rights

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

Relationships

- Trained and Assembled Workforce
- Customer Relationships
- Distribution Relationships

Intellectual Property

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

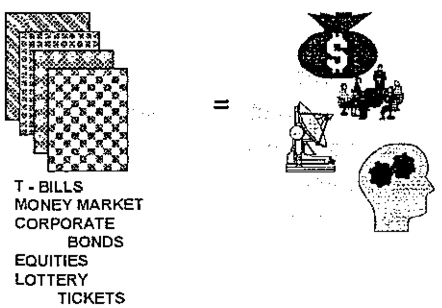
Proprietary Technology

- 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

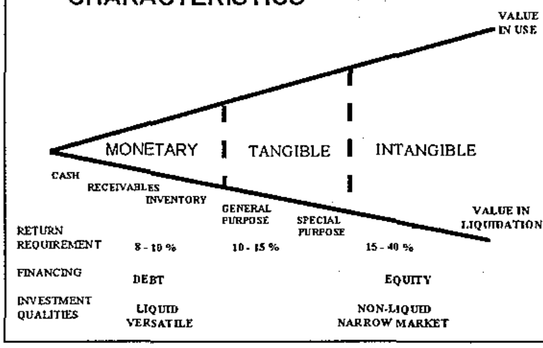
Undefined Intangibles

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

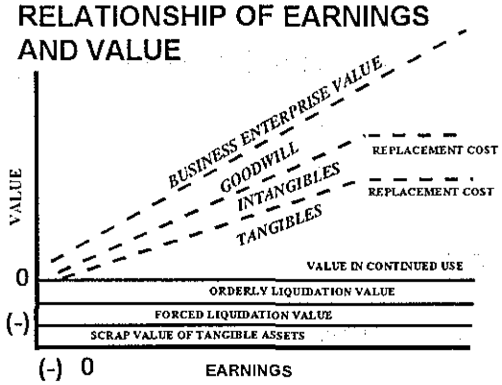
BUSINESS ENTERPRISE is a PORTFOLIO

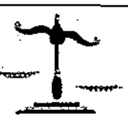


BUSINESS ASSET CHARACTERISTICS

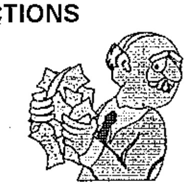


RELATIONSHIP OF EARNINGS AND VALUE





VALUATION CONCEPTS in LICENSING and JOINT VENTURE TRANSACTIONS



VALUING A BUSINESS

THE BUSINESS ENTERPRISE
(PORTFOLIO)

THE UNDERLYING ASSETS
(AS ELEMENTS OF PORTFOLIO)

THE UNDERLYING ASSETS
(FOR ALTERNATE USE)

PREMISE OF VALUE

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

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

PREMISE OF VALUE

FAIR 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."

VALUATION METHODS

- **Cost Approach**
- **Market Approach**
- **Income approach**

COST APPROACH

Cost of Reproduction or
Cost of Replacement

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

Less: Economic Obsolescence

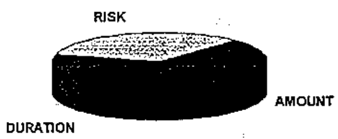
Equals: FAIR MARKET VALUE

MARKET APPROACH

Analyze evidence of transactions of:

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

INCOME APPROACH



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

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

PRESENT VALUE (discounting)

DISCOUNTING

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

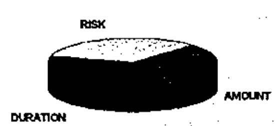
Used when we are to receive varying amounts in each period for a finite number of periods.

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

INCOME APPROACH (NPV = PV future benefits..)



= NET PRESENT VALUE

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

QUANTIFYING THE ECONOMIC ADVANTAGE

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

"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

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 ?

RATES OF RETURN

5.00% - CD's, Treasury Bills
5.65% - 30-year Treasury bonds
7.00% - 30-year mortgage commitments
7.00-8.00% - Corporate bonds
8.50% - Prime rate
8.00-10.00% - High-yield bonds
9.65-10.65% - Large company equities (Treasury plus 4-5%)
11.65-13.65% - Small company equities (plus 6-8%)
20% - 2nd or 3rd stage venture capital
40% - Venture capital, early commercialization
50% - Venture capital, early stage

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

TRANSFER OF VALUE BETWEEN FORMS OF INTELLECTUAL PROPERTY

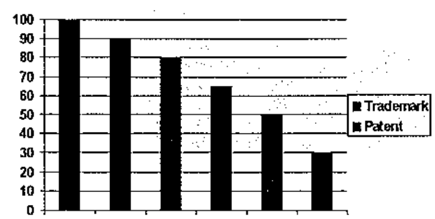


TABLE 4.11

USING MARKET ROYALTY RATES

FANCY COMPANY, INC.	1	2	3	4	5	TOTAL
Sales Revenue	$ 373,500	$ 388,440	$ 387,754	$ 386,391	$ 347,448	$ 1,883,533
Trademark Royalty Rate	5%	5%	5%	5%	5%	
Income Attributable to Trademark	$ 18,675	$ 19,422	$ 19,388	$ 19,320	$ 17,372	$ 94,177

TABLE 6.7

RELIEF FROM ROYALTY VALUATION

FANCY COMPANY, INC.	1	2	3	4	5
Sales Revenue	$ 373,500	$ 388,440	$ 387,754	$ 386,391	$ 347,448
Trademark Royalty Rate	5%	5%	5%	5%	5%
Income Attributable to Trademark	$ 18,675	$ 19,422	$ 19,388	$ 19,320	$ 17,372
INCOME ATTRIBUTABLE TO TRADEMARK	$ 18,675	$ 19,422	$ 19,388	$ 19,320	$ 17,372
Less: Income Taxes	$ 7,470	$ 7,769	$ 7,755	$ 7,728	$ 6,949
After-tax Income Attributable to Trademark	$ 11,205	$ 11,653	$ 11,633	$ 11,592	$ 10,423
Present Value of After-tax Income	$ 10,391	$ 9,294	$ 7,979	$ 6,837	$ 5,288
TOTAL PRESENT VALUE	$ 39,788				

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	$884	$726	$788	$813
TOTAL PRESENT VALUE	$4,190				

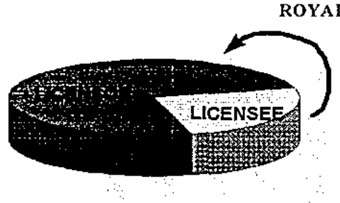
DISCOUNTED CASH FLOW MODEL - WITH TECHNOLOGY BENEFIT

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	-420	-560	-600
GROSS PROFIT	$6,400	$7,040	$7,080	$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	$1,098	$929	$994	$1,005
TOTAL PRESENT VALUE	$5,229				

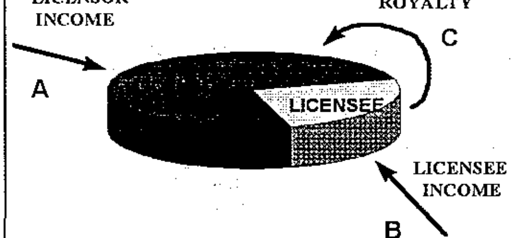
ROYALTIES

THE BURNING QUESTION

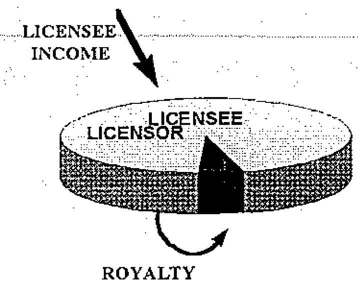
THE LICENSING TRANSACTION



THE LICENSING TRANSACTION



THE LICENSING TRANSACTION



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

COST APPROACH ROYALTY

What did it cost to develop the IP ?

Set a royalty that will recoup the cost.

NO !!

MARKET APPROACH ROYALTY

What royalties have others paid or received ?

What is the "industry standard" ?

MAYBE !!

INCOME APPROACH ROYALTY

What is the economic benefit to the licensee ?

What is our proper share ?

YES !!

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	$884	$726	$788	$813
TOTAL PRESENT VALUE	**$4,190**				

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	$920	$994	$1,005
TOTAL PRESENT VALUE		$5,229				

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	$684	$726	$788	$813
TOTAL PRESENT VALUE		$4,190				

EXPLOITATION

KEEP IT ? SELL IT ?
LICENSE IT ?
ENHANCE IT ?

EVALUATING EXPLOITATIONS

- Commercialize
- Enhance
- Sell
- License out
- License in comp.
- Joint venture