

# Introduction to IP Valuation & Damages Analysis

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## National Litigation Support Services' Spring Conference

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**Scott Nammacher, ASA, CFA**  
Empire Valuation Consultants, LLC  
Scottn@empireval.com

**John Finnerty, Ph.D**  
Finnerty Economic Consulting, LLC  
Finnerty@finnecon.com

**Jeffrey Kinrich, CPA/ABV**  
Analysis Group, Inc.  
Jkinrich@analysisgroup.com

**EMPIRE**  
VALUATION CONSULTANTS

**ANALYSIS GROUP**  
ECONOMIC, FINANCIAL and STRATEGY CONSULTANTS

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# Agenda

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- ◆ Part One – Scott Nammacher

- Overview of Intellectual Property

- General Valuation Approaches

- ◆ Part Two – John Finnerty

- Data Sources

- IP Valuation Example

- ◆ Part Three - Jeffrey Kinrich

- Litigation Damages Analyses

# Overview – Intellectual Property (IP)

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## ◆ What Is Intellectual Property

- Intangible asset – knowledge based
- Some legally protected for limited life
  - Patents
  - Copyrights
- Salable or Licensable
- Enduring in Nature

# Overview – IP Examples

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## ◆ Typical IP Assets

- Patents – process/products
- Copyrights – film, literary, music, etc.
- Trademarks/names, designs
- Software
- Databases/lists
- Know-how/designs
- Licenses – franchise, broadcast

# Overview – Why Value It?

- ◆ Financial reporting
  - Allocation of purchase price
  - Impairment testing
- ◆ Bankruptcy
  - Value negotiations
  - Fresh start accounting
- ◆ Litigation (of course!)
- ◆ Transactions
  - Sale/acquisitions/joint ventures
  - Licensing
- ◆ Financing
- ◆ Portfolio management

# Overview - Nature of Value

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- ◆ Valuation for Non-litigation
  - Financial reporting – GAAP & economics driven
  - Transactions – economics
  - Portfolio management – economics
- ◆ Valuations Typically Focused on 100% Interest in Intangible Asset being Valued

# Overview - Nature of Value

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## ◆ Valuation for Litigation

- Case law and “net economics” driven
- Issue is damage not valuation
- Damages Focus
  - Loss to Plaintiff
  - Benefit to Defendant (Disgorgement)

## ◆ Specific Facts & Circumstances

- Nebulous

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# General Valuation Overview

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- ◆ Basic Valuation Approaches for IP
  - Cost/Asset Approach
  - Market Approach
  - Income Approach – Litigation’s Focus
  
- ◆ Adjusted From Normal Business Valuation Approaches

# General Valuation Concepts

## ◆ Factors That Impact IP Value

- Type of Protection
- Stage of development/commercial success
- Exclusivity
- Advantages
- Market size – current and future
- Patent/license remaining duration
- Licensee's/licensor's anticipated profits
- Scope/geographic territory of license
- Enforcement costs

# General Valuation Concepts

- ◆ Value is a Function of Expected Future Economic Returns
  - Timing of these returns (assume annual)
  - Size of returns (\$ measure and growth)
  - Risk related to returns (required rate of return)
  
- ◆ Future Returns are Discounted to a Present Value (PV)
  - Risk Adjusted, Time Value of Money Concept
    - Explicitly by DCF Method
  
- ◆ Relevant for All Approaches
  - Income, Market & Cost

# Valuation Approach: Cost

## ◆ Cost Approach – Limited Use

- Asset is newly created with limited protection
- Commercially untested
- Where reproduction cost best estimate of value
  - Buyer unwilling to pay more than cost to recreate or engineer around protected design

## ◆ Components of Value

- Materials
- Labor
- Overhead
- Developer's/entrepreneur's profit
- Tax impact considered

# Valuation Approach: Cost

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- ◆ Typical Intangible/intellectual Property Valued Using Cost Approach
  - Software
  - Designs/patterns
  - Early stage tradenames/trademarks
  - Customer lists
  - Databases
  
- ◆ Need to Adjust for Various Forms of Obsolescence
  - Functional
  - Economic
  - Technical

# Valuation Approach: Market

- ◆ **Market Approach – Limited Use**
  - Focus on market transactions – sales/licenses
  - IP transaction details highly confidential
  - Assets typically not comparable
    - Different underlying IP assets
    - Different compensation structures
    - Different geographic territories
    - Different market potentials/degree of success
  
- ◆ **Best for Deriving Income Approach Inputs**
  - Royalty rates in certain types of analyses
  - Benchmarking profits/costs of companies or brands
  - Source of other financial and market performance information

# Valuation Approach: Income

- ◆ Various Methods Within Approach
  - Capitalization of historical cash flows
    - Adjusted historical performance with expectations for growth built into single formula
  - Discounted (future) cash flows (DCF)
    - Explicit forecast for future periods with long-term flows captured in single “horizon” formula (where appropriate)
- ◆ Litigation Valuations Generally Focus On Versions of DCF Method

# Valuation Approach: Income (DCF)

- ◆ Most Versatile of Methods
  - Can explicitly forecast future cash flows of almost any financial asset or liability or “net” flow
  - Used to compare “before and after” and “but for” type analyses in damages analyses
- ◆ Large Potential for Error or Manipulation, and Misunderstandings as to Impacts of Assumptions
  - GIGO (Garbage in garbage out) Risk



# Valuation Approach: Income (DCF)

- ◆ Valuation of 100% Interest in IP Asset
  - Direct Value of IP Asset Cash Flows
    - Intellectual asset's contributory cash flow is identified
    - Economic life determined
      - Attrition/obsolescence/legal life issues
    - Discount rate determined on each type of asset
    - Depending on analysis - returns (cash “rent” charges) on contributing assets subtracted to determine net cash flow
    - Taxes may/may not apply
    - Tax shield value may/may not apply
    - Present value (IP value) determined

# Valuation Approach: Income (DCF)

- ◆ Valuation of 100% Interest in IP Asset
  - “Relief from Royalty” method
    - Royalty rate for use of asset determined and applied to revenues being generated
    - Costs to maintain/protect license estimated
    - Economic life determined
      - Attrition/obsolescence/legal life issues
    - Discount rate determined on each type of asset
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# Data Sources for Industry Royalty Rates

- ◆ Selected Licensed Royalty Rate Databases That Are Commercially Available Online
  - RoyaltySource Database
  - RoyaltyStat Database
  - rDNA Alliances Database
  
- ◆ Litigated Royalty Rates
  - Use Lexis/Nexis to Research Legal Decisions
  - Proprietary Databases (e.g., Analysis Group)
  - Litigated Royalty Rates Usually Incorporate a Litigation Premium as Compared to Licensed Royalty Rates

# RoyaltySource Database

- ◆ RoyaltySource.com
- ◆ Searchable database of IP transactions
- ◆ Compiled from public information such as SEC filings (EDGAR), internet news or other public media sources
- ◆ Provides transaction summaries
- ◆ Characteristics of database
  - Late 1980's – 2005
  - More than 5,900 agreements
  - All industries

# RoyaltyStat Database

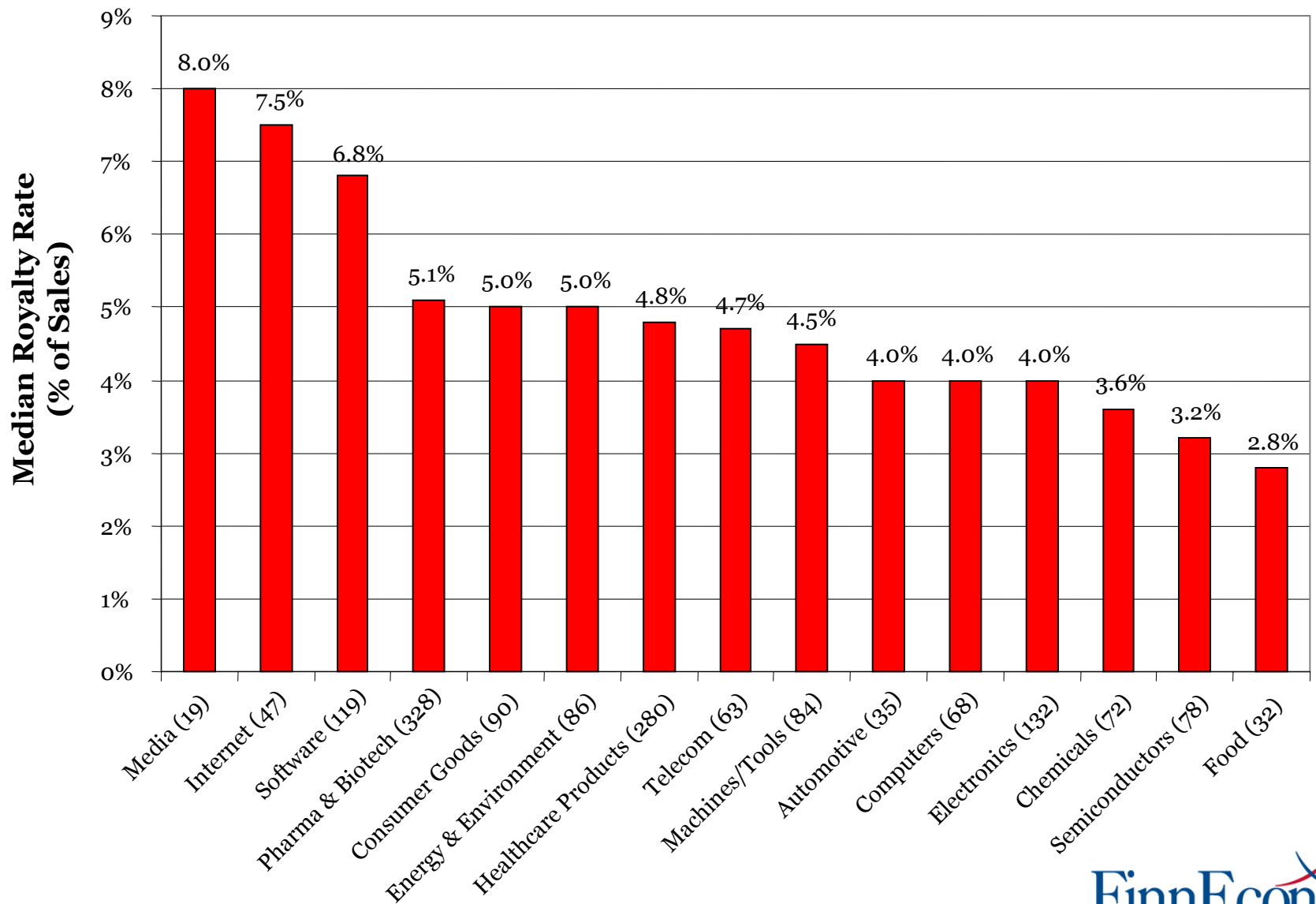
- ◆ Roytystat.com
- ◆ Database of IP transactions searchable by SIC code, keyword, territory or type of agreement
- ◆ Compiled from SEC filings (EDGAR)
- ◆ Provides transaction agreements and online statistics
- ◆ Characteristics of database
  - Mid 1990's – 2005
  - More than 3,500 agreements
  - All industries

# rDNA Alliances Database

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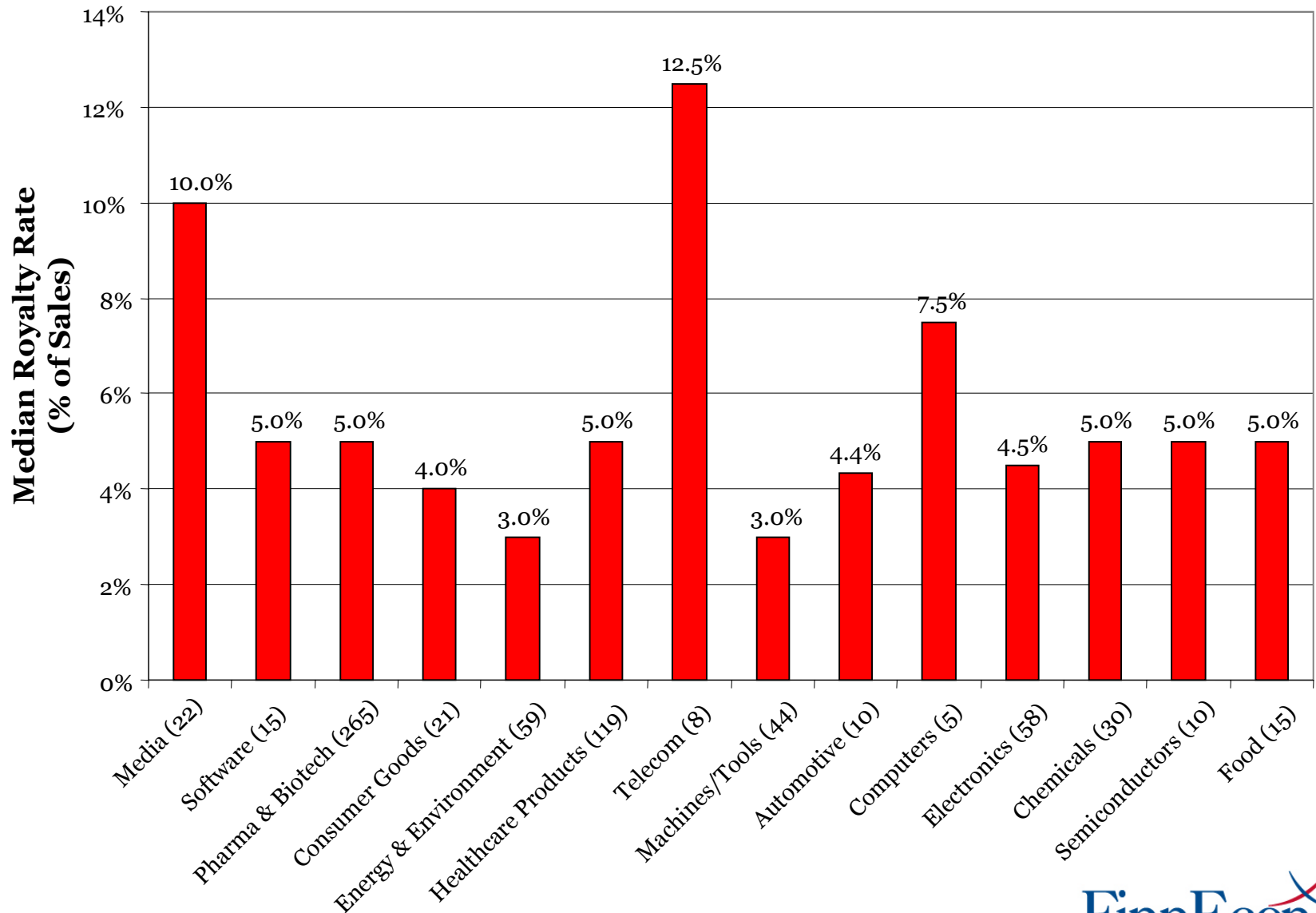
- ◆ rDNA.com
- ◆ Searchable database of strategic corporate alliances
- ◆ Compiled from public information
- ◆ Provides transaction agreements and summaries
- ◆ Characteristics of database
  - Early 1980's – 2005
  - More than 19,000 agreements
  - Concentrated in Pharmaceutical/Biotech industries

# Median Royalty Rates for Selected Industries

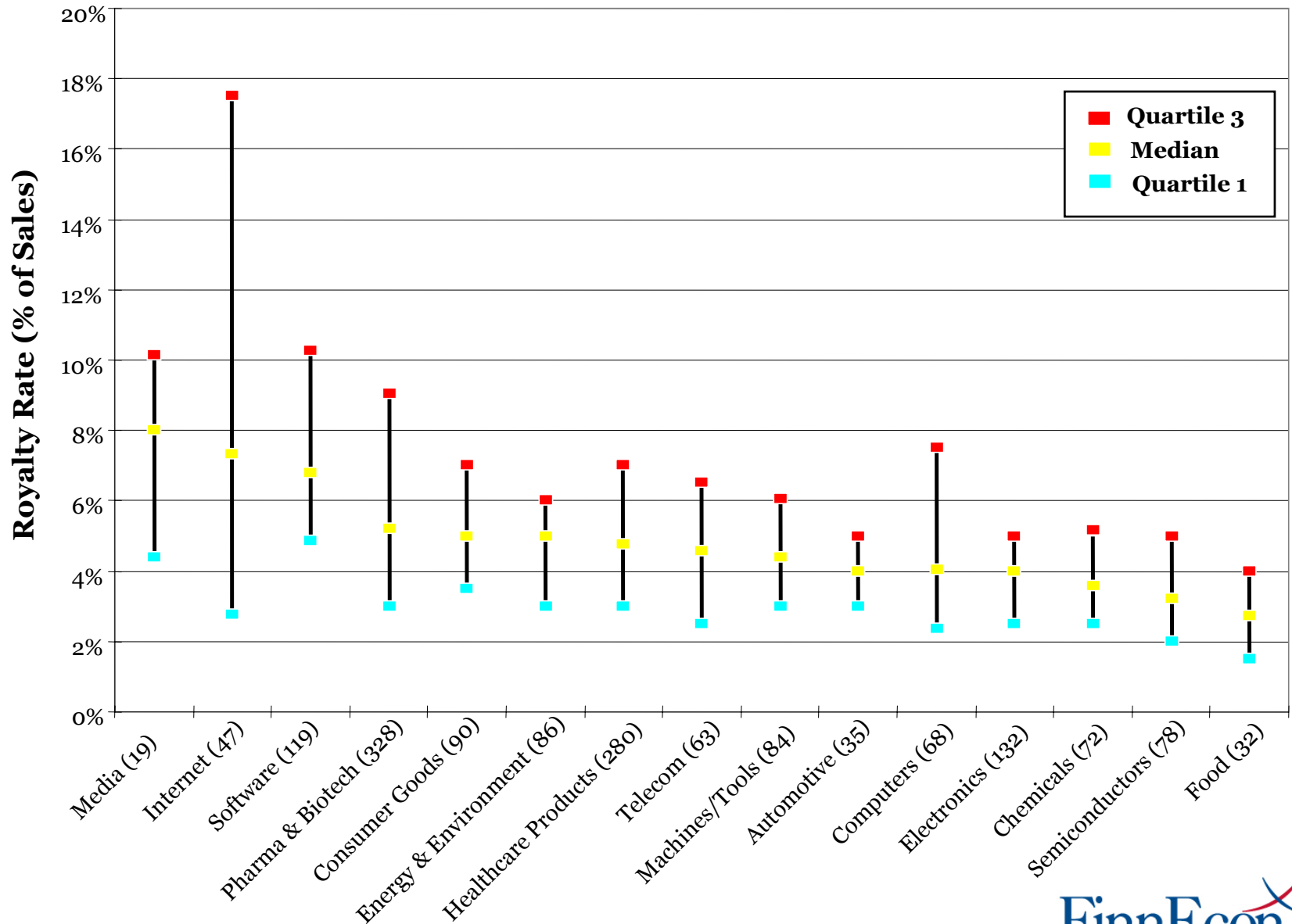




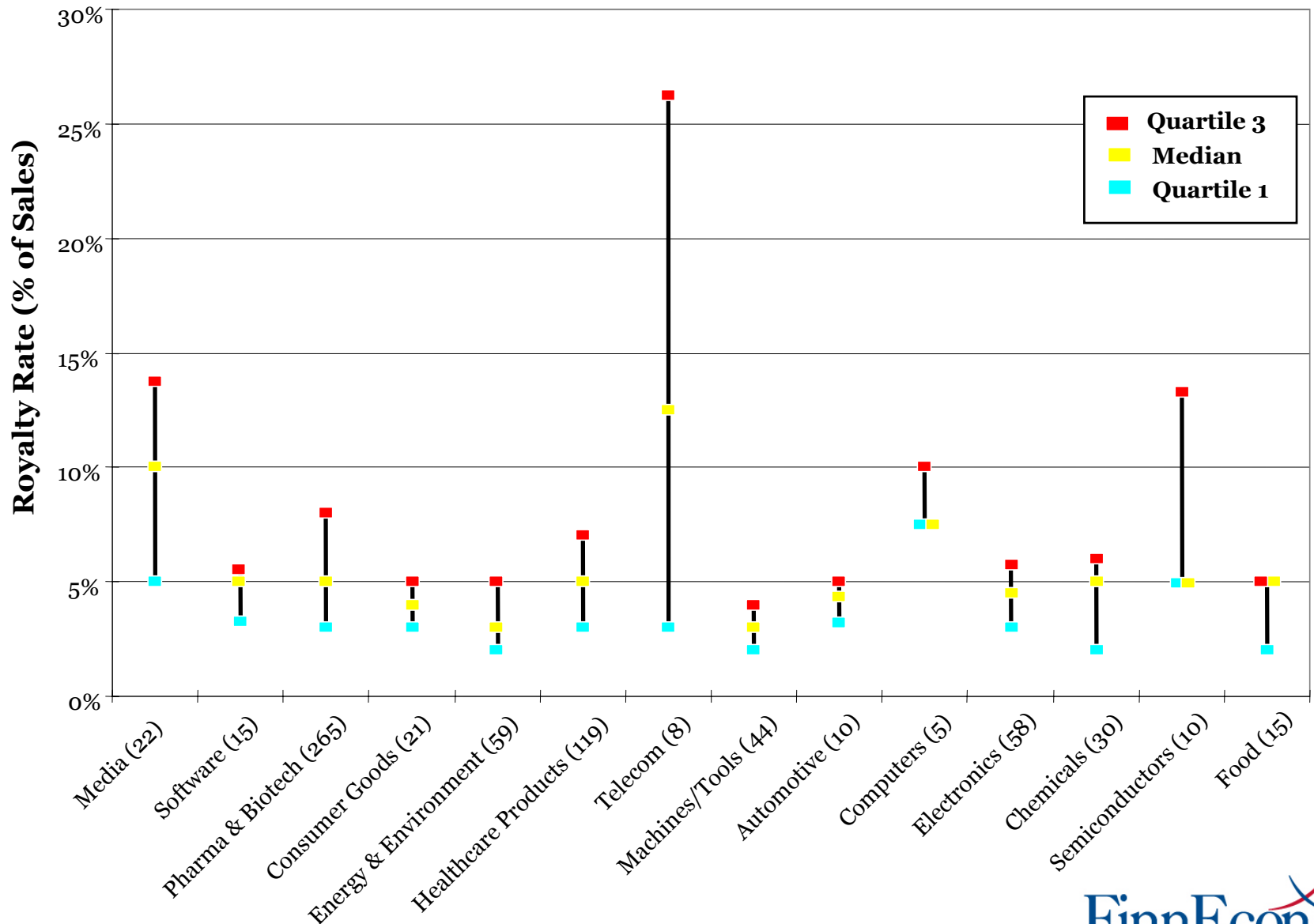
# Median Royalty Rates for Selected Industries



# Interquartile Range of Royalty Rates - Selected Industries



# Interquartile Range of Royalty Rates - Selected Industries



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# IP Valuation Example

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# Tradenname Valuation Example

XYZ Food Corporation  
Value of Trademarks/names -  
Snack Unit  
As of May 31, 2004

<i>(numbers in 000s)</i>	Projected 6/01/04-6/30/04	Projected FY 2005	Projected FY 2006	Projected FY 2007	Projected FY 2008	Projected FY 2009	Horizon
Projected product revenue	7,425	89,098	105,901	116,491	128,140	140,954	
Times: % sales w/co. trademarks/names	<u>0.97</u>	<u>0.97</u>	<u>0.97</u>	<u>0.97</u>	<u>0.97</u>	<u>0.97</u>	
	7,202	86,425	102,724	112,996	124,296	136,726	
Times: Royalty rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	
Company royalty savings	144	1,729	2,054	2,260	2,486	2,735	
Less: Maintenance costs	<u>(4)</u>	<u>(51)</u>	<u>(58)</u>	<u>(63)</u>	<u>(67)</u>	<u>(72)</u>	
	140	1,678	1,996	2,197	2,419	2,662	
Less: Provision for taxes	<u>(56)</u>	<u>(671)</u>	<u>(799)</u>	<u>(879)</u>	<u>(967)</u>	<u>(1,065)</u>	
Tax rate:	40.00%	40.00%	40.00%	40.00%	40.00%	40.00%	
After-tax royalty income	84	1,007	1,198	1,318	1,451	1,597	25,311
Times: Discount factor	<u>0.9963</u>	<u>0.9485</u>	<u>0.8662</u>	<u>0.7911</u>	<u>0.7225</u>	<u>0.6598</u>	<u>0.6598</u>
Discounted after tax royalty income	84	955	1,038	1,043	1,048	1,054	16,700
Present Value of Discounted Royalty Streams:		21,921					
Times: Tax Amortization Benefit Factor		<u>1.19</u>					
		26,086					

**Value of Trademarks/names - Snack Unit**

**\$26,100**

## Sensitivity Analysis

		WACC Rate:		
		8.5%	9.5%	10.5%
Royalty	1.5%	\$22,900	\$19,400	\$16,800
Rate:	2.0%	\$30,900	\$26,100	\$22,600
	2.5%	\$38,800	\$32,800	\$28,400

## Assumptions:

WACC: 9.5%

LT growth rate: 3.0%

Maint. costs % sales growth rate: 75.0%

Revenue growth: '07 to '09:

(revenue growth in FY '06)

FY '05 Oper. Income Margin

10% Total trademark/name expense:

19% % Unit/total TM/TN revenue:

7.6% Trademark/name expense allocated:

\$360

14.3%

\$51

# Tax Amortization Benefit

XYZ Food Corporation  
Tax Amortization Benefit Calculation  
As of May 31, 2004

WACC	10.0%
Tax life	15.0
Base intangible asset value	100.0
Amortization/year	6.7
Tax rate	40.0%
Amortization benefit/year	2.6667

Year	Period	Period to Year End	Mid Year Disc. Factor	Amort.	PV of Amort.
2004	0.5833	0.2917	0.9726	2.67	2.5936
2005	1.5833	1.0833	0.9019	2.67	2.4051
2006	2.5833	2.0833	0.8199	2.67	2.1864
2007	3.5833	3.0833	0.7454	2.67	1.9877
2008	4.5833	4.0833	0.6776	2.67	1.8070
2009	5.5833	5.0833	0.6160	2.67	1.6427
2010	6.5833	6.0833	0.5600	2.67	1.4934
2011	7.5833	7.0833	0.5091	2.67	1.3576
2012	8.5833	8.0833	0.4628	2.67	1.2342
2013	9.5833	9.0833	0.4207	2.67	1.1220
2014	10.5833	10.0833	0.3825	2.67	1.0200
2015	11.5833	11.0833	0.3477	2.67	0.9273
2016	12.5833	12.0833	0.3161	2.67	0.8430
2017	13.5833	13.0833	0.2874	2.67	0.7663
2018	14.5833	14.0833	0.2612	<u>2.67</u>	<u>0.69666</u>
			Total:	37.33	19.4891

PV of Amortization Benefits	19.5
Add: Base Value	<u>100.0</u>
Adjusted Asset Value	119.5

<b>Tax Amortization Benefit Factor:</b>	<b>1.19</b>
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# Overview of Presentation

- ◆ Damages in Intellectual Property Cases, including:
  - Copyright
  - Trademark
  - Trade Secret
  - Patent
- ◆ Lost Profits
- ◆ Reasonable Royalty

# Intellectual Property: State v. Federal Jurisdiction

	<u>Copyright</u>	<u>Trademark/ Trade Dress</u>	<u>Trade Secret</u>	<u>Patent</u>
Federal	<b>X</b>	<b>X</b>		<b>X</b>
State		<b>X</b>	<b>X</b>	

- ◆ Patent cases appealed to the Court of Appeals for the Federal Circuit (“CAFC”)
- ◆ Copyright and trademark cases appealed to Circuit Court level

# What Are Typical Types of Damages?

MEASURE OF DAMAGES	COPYRIGHT	TRADEMARK	TRADE SECRET	PATENT
Disgorgement	X	X	X	
Lost Profits from Sales	X	X	X	X
Lost Profit from Price Erosion	?	X	?	X
Lost Profits from Collateral Sales	“X”	?	?	X
Impairment of Goodwill	X	X		
Advertising Costs to Correct Confusion		X		
Costs to Restore Competitive Position			X	X
Reasonable Royalty	“X”	X	“X”	X
Statutory Damages	X	X		
Costs of Litigation and/or Prejudgment Interest	X	X	X	X

# Damages in Copyright Cases

- ◆ Profits realized by the infringer (i.e., disgorgement)
- ◆ Losses suffered by the copyright owner
  - Lost sales
  - Goodwill
  - Reasonable royalty (in certain situations)
- ◆ Costs of litigation and reasonable attorneys' fees
  - OR -
- ◆ Statutory damages
  - \$200/\$750 to \$30,000 per infringement
  - Up to \$150,000 per infringement, if deemed willful

# Damages in Trademark Cases

- ◆ Infringer's profits
  - May be decreased/increased as the Court finds just
- ◆ Owner's damages
  - Lost profits
  - Price erosion
  - Harm to reputation/goodwill up to trebled for willfulness
  - Costs of corrective action required by the infringement
  - Reasonable royalty
- ◆ Costs of the action/attorneys' fees
  - Only in exceptional cases
- ◆ Counterfeiting: Trebled, attorney's fees

# Damages in Trade Secret Cases

- ◆ Disgorgement/Infringer's Profits
  - Attributes all of defendant's sales to misappropriation
  - Defendant's burden:
    - Misappropriation did not result in all sales
    - Which costs to deduct from profits
- ◆ Damages
  - Lost sales and profits
  - Reasonable royalties (in lieu of proving actual damages or infringer's profits)
  - Loss of value
  - Costs to restore
  - Increased expenses: start up costs, mitigation efforts, reduction in capital value
  - Interest, Attorneys' fees (when appropriate)
- ◆ Impact of injunction?

# Damages in Patent Cases

- ◆ Injunction
- ◆ Damages
  - Lost profits
  - Not less than reasonable royalty
  - Prejudgment interest
  - Other (treble damages, costs and fees, mixed awards - lost profit and reasonable royalty)
- ◆ Interest and costs as fixed by the court
- ◆ Reasonable attorneys' fees, in exceptional cases

# What are Infringer's Profits?

- ◆ Revenue less costs
- ◆ Plaintiff's burden: revenue
  - Related to infringement?
- ◆ Defendant: Costs and apportionment
  - Apportion to causes other than infringement
- ◆ For apportionment, see: Frank Music
  - Direct profits
  - Indirect profits
- ◆ Profits attributable to the infringement



# Lost Profits: The Panduit Test for IP Cases

- ◆ *Panduit Corp. v. Stahlin Brothers Fibre Works, Inc.*
  - Factor 1 - Demand for the patented product
  - Factor 2\* - No acceptable non-infringing substitutes
  - Factor 3 - Sufficient manufacturing and marketing capabilities
  - Factor 4 - The profit that would have been made

\*Factor 2 has been modified over time

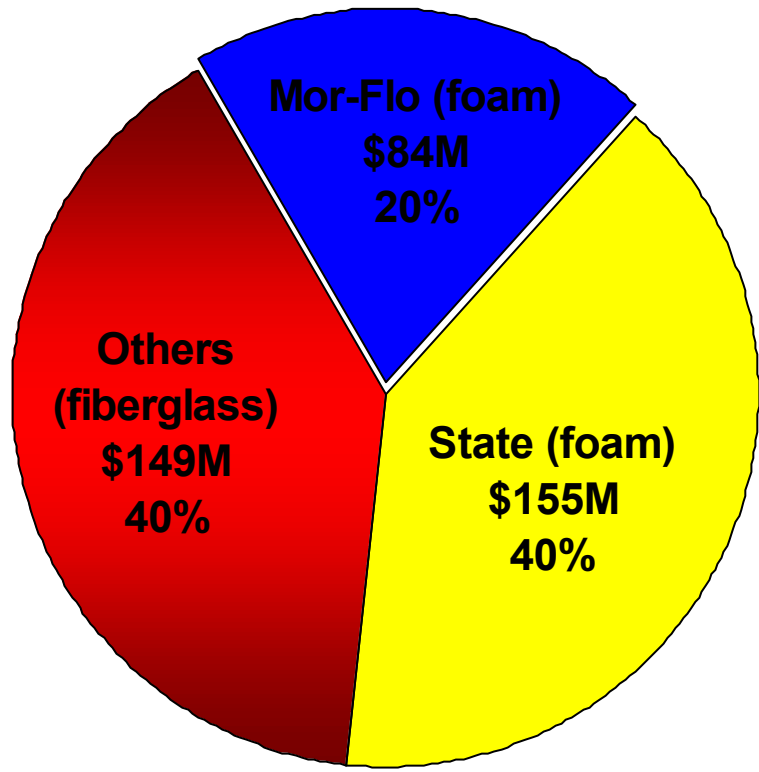
# Computing Lost Profits

- ◆ **Lost Profits = Lost Sales - Incremental Costs**
- ◆ **Lost Sales:**
  - But-for world
  - How “bad act” affected sales
  - Substitutability of plaintiff and defendant products
  - Similarity of underlying customer base
- ◆ **Incremental Costs:**
  - What costs would have been incurred?

# Computing Lost Profits: Lost Sales

- ◆ Many methods
  - Direct computation
  - Before-and-after
  - Benchmark
  - Market comparable
  - Etc.

# Market Share Analysis: Mor-Flo (1989)



Total Market: \$388M

Court's Allocation to State:

$$40/100 \times \$84M = \$34M$$

Corrected Allocation to State:

$$40/(100 - 20) \times \$84M = \$42M$$

## Refining Market Share: *Bic v. Windsurfing* (1994)

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- ◆ Price matters
- ◆ Demand for infringer's product matters
- ◆ Mere existence of patented feature not enough

## Alternative Products: *Grain Processing v. American Maize* (1999)

- ◆ Look at economics
- ◆ Must show demand for the patented invention
- ◆ Even if new process not developed, it is a non-infringing alternative if:
  - Materials available
  - Technical process known
  - Defendant had necessary equipment, know-how, and experience
- ◆ Consider actual alternatives available at time of infringement

# Incremental Costs: General Theory

- ◆ What costs would have been incurred to make the lost sales?
  - Incremental materials costs
  - Incremental manufacturing costs
  - Incremental sales costs
- ◆ How can you figure it out?
  - Account analysis
  - Statistical techniques

# Incremental Costs: Account Analysis

	<i>Fixed/Variable</i>	<i>2002</i>
<b>Indirect Labor</b>		
Supervision	F	\$7,108,107
Chemical Engineers	F	2,933,698
Manufacturing Engineers	V	1,002,589
Purchasing	V	895,456
Production Control	F	1,825,698
Inspection	V	1,025,863
Maintenance	V	2,369,455
Tooling	F/V	853,698
Indirect Costs	F/V	1,056,995
Overtime Premium	V	3,256,987
<b>Indirect Expenses</b>		
Warranty	V	\$4,987,568
Utilities	V	1,825,965
Supplies	V	1,058,964
Tooling	F/V	1,256,987
Transportation	F/V	1,002,560
Rentals	V	985,698
Research & Development	F	6,589,745
Selling/General & Administrative	F	8,732,249
Insurance	F	2,900,560
Worker's Compensation	V	5,897,654
Payroll Taxes	V	1,023,569
Depreciation	F	<u>4,262,575</u>
<b>Total</b>		<b>\$62,852,640</b>
<b>Subtotal Variable Expenses</b>		<b>\$26,414,888</b>
<b>Variable Expenses as % of Total</b>		<b>42.0%</b>

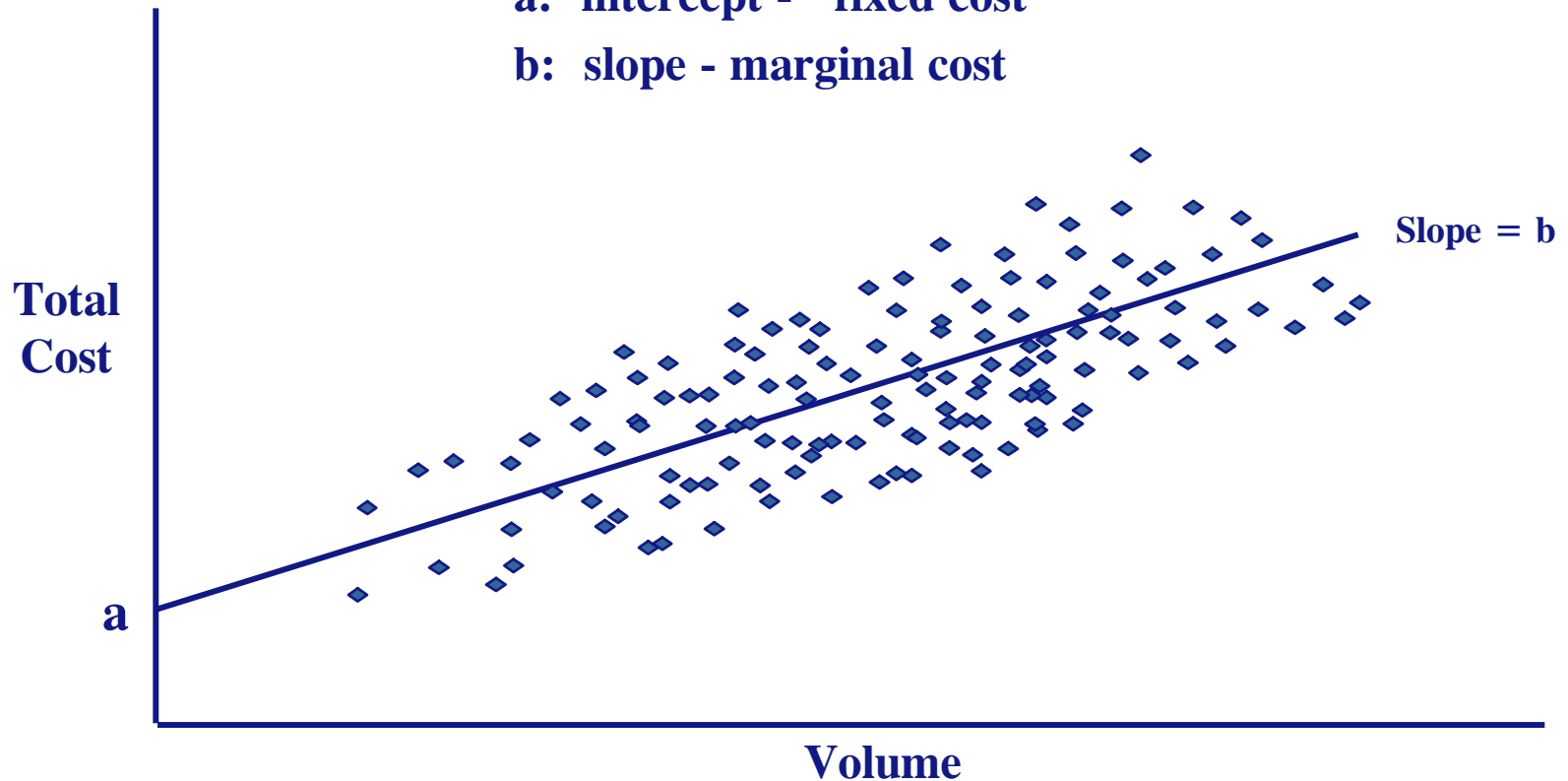


# Incremental Costs: Statistical Techniques

$$y = a + bx$$

**a:** intercept - “fixed cost”

**b:** slope - marginal cost



# Reasonable Royalty Standard

- ◆ Patents, Copyrights, Trade Secrets
- ◆ Often used for an “innocent misappropriator”
  - Good faith
  - Inextricably incorporated into product/business
- ◆ Georgia-Pacific criteria - *Georgia Pacific v. US Plywood*
  - Established licenses
  - Royalties for comparable patents
  - Commercial relationship between licensor and licensee
  - Convoyed sales promoted by sale of patented product
  - Profitability of product
  - Hypothetical negotiation

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