AUTM
Association of University Technology Managers®
Advancing Discoveries for a Better World®

AUTM Professional Development Programs
www.autm.net/events

University Patent License Valuation – Measuring Value

The formal presentation will begin at Noon Eastern

FOR AUDIO:
To connect by phone: dial +1-866-365-4406 Access code 5627649
To connect by VoIP: Click the AUDIO button at the top of the screen.

For a list of international toll-free numbers check your confirmation email for the direct link.

AUTM
Association of University Technology Managers®
Advancing Discoveries for a Better World®

AUTM Professional Development Programs
www.autm.net/events

The following presentation reflects the personal views and thoughts of the speakers and are not to be construed as representing in any way the corporate views or advice of the Organizations and their Affiliates, Subsidiaries or Divisions, nor the views or advice of the Association of University Technology Managers (AUTM). The content is solely for purposes of discussion and illustration, and is not to be considered legal advice.

2

AUTM Association of University Technology Managers® Advancing Discoveries for a Better World®

AUTM Professional Development Programs
www.autm.net/events

University Patent License Valuation – Measuring Value

Speakers:
John M. Christie, *Tulane University*
Ashley J. Stevens, CLP, *The Focus IP Group*

November 10, 2016

AUTM Association of University Technology Managers® Advancing Discoveries for a Better World®

AUTM Professional Development Programs
www.autm.net/events

Thank you to our sponsors.

MARSHALL GERSTEIN ip

UNIVERSITY OF PITTSBURGH innovation INSTITUTE

AUTM Professional Development Programs
www.autm.net/events

Questions?

We will be taking questions at the conclusion of the presentation.

AUTM Professional Development Programs
www.autm.net/events

Operator Assistance

Audio difficulties: Dial 0 0

Other issues: +1-847-686-2244

AUTM
Association of University Technology Managers®
Advancing Discoveries for a Better World®

AUTM Professional Development Programs

www.autm.net/events

AUTM
Association of University Technology Managers®
Advancing Discoveries for a Better World®

www.autm.net

AUTM
Association of University Technology Managers®
Advancing Discoveries for a Better World®

AUTM Professional Development Programs

www.autm.net/events

AUTM
Association of University Technology Managers®
Advancing Discoveries for a Better World®

Welcome

AUTM Members

www.autm.net

AUTM Association of University Technology Managers® Advancing Discoveries for a Better World®

AUTM Professional Development Programs

www.autm.net/events

Member Benefits

Discounted Pricing

- Professional development courses
- Annual Meeting
- Online courses
- Online job posting
- Membership mailing lists

Access to AUTM Publications

- *AUTM Better World Report*
- AUTM Salary Survey
- AUTM Technology Transfer Practice Manual
- AUTM Licensing Activity Survey (currently for United States and Canada)
- AUTM Update

In-person and Online Networking

- Special Interest Groups (SIGS)
- Online Discussion Groups
- Volunteer committees
- Partnership Forums
- Meetings at national and regional levels

AUTM Association of University Technology Managers® Advancing Discoveries for a Better World®

AUTM Professional Development Programs

www.autm.net/events

University Patent License Valuation

(Webinar -- Intermediate Level)

AUTM Association of University Technology Managers® Advancing Discoveries for a Better World®

AUTM Professional Development Programs

www.autm.net/events

Course Outline:

1. Creating Value Oct 27, 2016
2. Measuring Value Today!
3. Sharing Value
4. Special Issues for startups

AUTM Association of University Technology Managers® Advancing Discoveries for a Better World®

AUTM Professional Development Programs

www.autm.net/events

Measuring Value

Faculty

John Christie
Tulane University
Email: jchrist@Tulane.edu

Ashley Stevens
The Focus IP Group
Email: astevens@fipgllc.com

Overview

- Why do academic institutions engage in technology transfer?
- How should licensor and licensee share financial success?
- Basic finance:
  - License terms
  - Financial accounting
  - Financial statements
- Cash flow from a successful license
- Net present value

AUTM Association of University Technology Managers® Advancing Discoveries for a Better World®
AUTM Professional Development Programs
www.autm.net/events

Why do academic institutions engage in technology transfer?

- To see that research results are made tangible, so that they can have a positive impact on the world
- To deliver a benefit to the public, whose taxes have often directly supported the research

Where does the money come in?
or
If the goal is so noble, why not give technology away?

- It's not so simple:
  - Government wants academics to receive fair market value:
    - Tax implications, especially for the tax-exempt
    - Bayh-Dole purposes
- And any proceeds can be put to good use:
  - Supporting further research (and commercialization)
  - Supporting the research institution
  - Rewarding (motivating) inventors and discoverers

AUTM Association of University Technology Managers® Advancing Discoveries for a Better World®
AUTM Professional Development Programs
www.autm.net/events

Where does the money come in?
or
If the goal is so noble, why not give technology away?

- Some technologies have long and expensive development processes and complex regulatory pathways
  - Investors need market exclusivity
- Patents (and other forms of IP protection) provide exclusivity
- Resource-constrained research institutions need incentives to invest in securing IP protection

How should the licensor and licensee share the profits?

- In technology licensing, we often rely on the 25% Rule:

  The licensor should receive 25% and the licensee 75% of the pre-tax profit from the commercialization of a licensed IP

- Reflects the risk / reward relationship going forward
  - Licensor's risk is over
  - Licensee's is just beginning
- It may not be perfect, but it's an excellent starting point
  - Based on real world experience
  - Stood the test of time for 60 years
    - Except in litigation

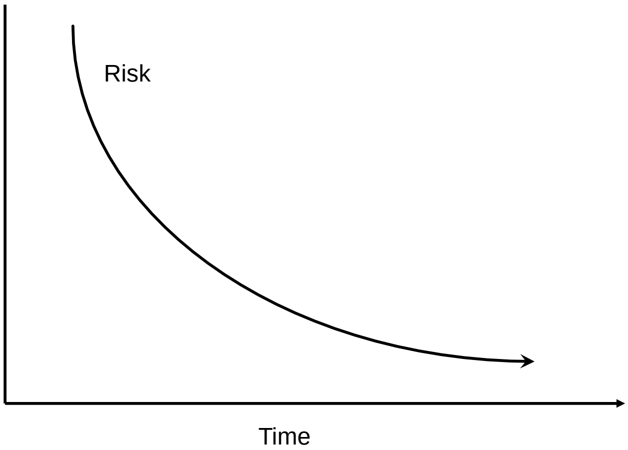
AUTM Association of University Technology Managers® Advancing Discoveries for a Better World®
AUTM Professional Development Programs
www.autm.net/events

Some Fundamental Principles of License Valuation

- We very rarely get paid in full upfront
  - Academic technologies are generally very high risk
    - Technology unvalidated
    - Market unvalidated
- Risk and value are inversely related

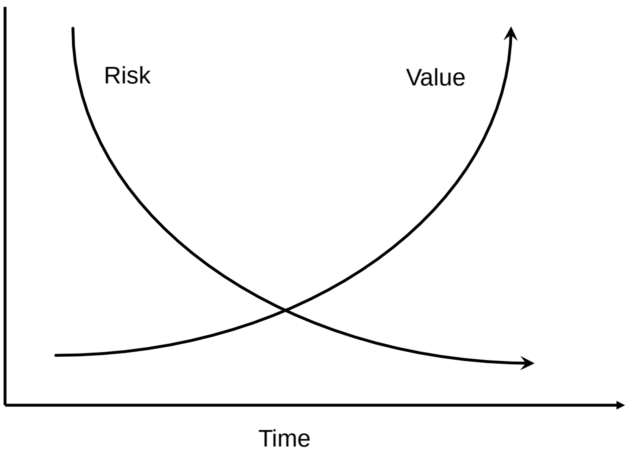
AUTM Association of University Technology Managers® Advancing Discoveries for a Better World®
AUTM Professional Development Programs
www.autm.net/events

Value vs. Risk



AUTM Association of University Technology Managers® Advancing Discoveries for a Better World®
AUTM Professional Development Programs
www.autm.net/events

Value vs. Risk



Some Fundamental Principles of License Valuation

- We probably shouldn’t even **TRY** to get paid upfront in full
- Our job is to **EXTRACT** the value over time
  - Share in the growth in value

AUTM Professional Development Programs
www.autm.net/events

Royalties vs. Running Royalties

- Royalties are the totality of payments a licensor receives in return for granting a license to its IP:
  - Upfront fees, including equity;
  - Annual minimum royalties / license maintenance fees;
  - Milestone payments;
  - Running royalties.
- Excludes payments reimbursing for a deliverable:
  - Patent prosecution;
  - R&D;
  - Product manufacture.
- Running royalties are payments received by the licensor that are proportionate to the extent of the licensee’s use of the IP.

Royalty Payments

- Three basic types of payment:
  - Fixed lump sum payments
    - Single payments we get as long as the license is in effect
      - Upfront fee, Annual maintenance fee, Annual minimum royalties
  - Contingent lump sum payments
    - Single payments we get if certain things happen
      - Patent milestones, Development milestones, Sales milestones, Equity liquidation
  - Running royalties
    - Payments that depend on the **extent** of licensee's use of the licensed technology
  - Some payments are made pre-commercialization, some after

AUTM Association of University Technology Managers® Advancing Discoveries for a Better World®
AUTM Professional Development Programs
www.autm.net/events

Running Royalties

- Aka "Earned Royalties"
- The main post-commercialization economic component of the license
- Biggest long term impact if the product is successful
- An equation:

  Royalty payments = Royalty base * Royalty rate
- Payments are made for the Royalty Term

Royalty Base

- Measure of the **extent** of licensee's return from using the technology
  - Number of units sold
  - Revenues
  - Profits
    - Define carefully
      - Gross Profits / Net Profits / Profits after taxes
    - Very difficult to audit
- Most common is "Net Sales"
    - Gross Sales less either
      - Standard deductions
        - » Shipping / Insurance / Returns
      - Or a standard deduction – typically 5%

AUTM
Association of University Technology Managers®
Advancing Discoveries for a Better World®
AUTM Professional Development Programs
www.autm.net/events

Royalty Rate

- **How much** of the licensee's return from using the technology we get
- Royalty rate can be either:
  - Flat
    - Single royalty rate for all sales
  - Tiered
    - Royalty rate is different at different levels of sales
    - Basic marketing theory says that bigger selling products are more profitable
      - Basic royalty theory (25% Rule) says royalty rate should therefore increase at higher sales levels

AUTM Professional Development Programs
www.autm.net/events

Royalty Term

- How long we get paid
- Universities usually use:
  - Last to expire patent on a country-by-country basis
- Companies frequently use:
  - Longer of:
    - Last to expire patent on a country-by-country basis; or
    - Ten years from first commercial sale on a country-by-country basis
- Why don't more universities use this formulation?
  - Particularly on a "reach through" product
    - A product that is **discovered** using the licensed technology

27

AUTM Professional Development Programs
www.autm.net/events

Basic financial accounting

Revenue: Money received in exchange for its products, services, sale of assets etc.

- The "Gross Sales" figure from which allowable costs are subtracted to get "Net Sales"

Cost of Goods Sold: Direct costs of making the goods sold

- Cost of materials, direct labor, royalties paid

Gross Margin: Revenue minus COGS as a percentage

All definitions adapted from http://www.investopedia.com/ and used here purely for purposes of education.

AUTM Professional Development Programs
www.autm.net/events

Basic financial accounting

Net Margin: Gross Margin less Indirect Costs

- R&D, Marketing and Sales, General and Administrative
- Shows how profitable a company is

Discounted Cash Flow: (DCF) A valuation method used to evaluate an investment opportunity.

- Projects future free cash flow
- Discounts them to arrive at a present value estimate.

Time Value of Money: The idea that money available at the present time is worth more than the same amount in the future

- Core principle of finance
- Money is worth more the sooner it is received.

AUTM Professional Development Programs
www.autm.net/events

A Company's Principal Financial Statements

- Income Statement
  - Flow of Activity Over a Time Period
  - "For the _______ Ended…"
- Balance Sheet
  - Snapshot at a Particular Time
  - "As of __/__/__"
- Cash Flow Statement
  - Simply a Restatement of the Balance Sheet
    - To Reflect Changes (Flows) Over Time
    - "For the _______ Ended…"

AUTM Professional Development Programs
www.autm.net/events

Income Statement

- *aka* P&L Statement, Operating Statement
- Reflects revenue sources & expenses
- Single line for revenues
- Expenses are typically grouped by function
  - COGS
  - Sales & Marketing
  - G&A
- Various subtotals reflecting various measures of profitability
  - Gross Profit
  - Operating Profit
  - Profit before Interest and Taxes
  - Net Profit

AUTM Professional Development Programs
www.autm.net/events

Income Statement

Income Statement: For the Year Ended Dec 31:		
	2005	2004
Sales	810,000	775,000
COGS:		
Material	162,000	150,000
Direct Labor and Overhead	202,500	187,500
Total COGS	364,500	337,500
Gross Margin	**445,500**	**437,500**
Product Development	100,000	92,000
Sales & Marketing	156,000	145,000
General & Administration	70,000	65,000
Total Operating Expenses	**326,000**	**302,000**
(EBIT) Operating Profit	**119,500**	**135,500**
Interest Expense	660	850
Pretax Income	118,840	134,650
Tax Provision	47,536	53,860
Net Income	**71,304**	**80,790**

Balance Sheet

- Reflects financial health of company
- Snapshot in time
- Changes over time reveal a lot
- Two halves
  - What's owned – Assets
  - What's owed – Liabilities
- They must equal each other
  - Balancing item is "Equity"
    - The Net Worth of the business

AUTM Professional Development Programs
www.autm.net/events

Assets

- Assets reflect cash and future claims to cash
  - In descending order of when we expect cash
  - Two groups
    - Current Assets – Convertible to cash in <u>less</u> than 12 months
    - Other Assets – Relatively illiquid

AUTM Professional Development Programs
www.autm.net/events

Assets

- Current Assets
  - Cash and Cash Equivalents
  - Accounts Receivable
  - Inventory
  - Notes Receivable
- Other Assets
  - Gross Fixed Assets
  - Accumulated Depreciation
  - Other Operating Assets
  - Other Investment
  - Goodwill

AUTM Professional Development Programs
www.autm.net/events

Liabilities

- Liabilities reflect future claims on cash
  - In descending order of when we expect to pay
  - Three groups
    - Current Liabilities – Payable in <u>less</u> than 12 months
    - Long Term Liabilities -- Payable in <u>more</u> than 12 months
    - Equity
      - Not repayable
      - Owned by shareholders

AUTM Association of University Technology Managers® Advancing Discoveries for a Better World®

AUTM Professional Development Programs
www.autm.net/events

Liabilities

- Current Liabilities – Payable in less than 12 months
  - Accounts Payable
  - Taxes Payable
  - Other Liabilities
    - Deposits, Employee vacations, etc.
- Long Term Liabilities -- Payable in more than 12 months
  - Debt
- Equity – Not repayable
  - Common Stock
  - Paid in Capital
  - Retained Earnings

AUTM Association of University Technology Managers® Advancing Discoveries for a Better World®

AUTM Professional Development Programs
www.autm.net/events

Balance Sheet

Balance Sheet - As of December 31					
	2005	2004		2005	2004
Assets			Liabilties & Equity:		
Cash	25,792	2,699	Notes Payable	5,000	2,500
Accounts Receivable	342,005	322,266	Acounts Payable	42,300	40,283
Inventory	425,505	378,545	Accrued Expenses	47,850	48,200
Other Current Assets	20,000	20,000	Accrued Taxes	48,500	46,896
Total Current Assets	**813,302**	**723,510**	**Total Current Liab.**	**143,650**	**137,880**
Fixed Assets	375,500	355,100	LTD	278,500	325,005
Acc Depreciation	(95,000)	(60,000)			
Net Fixed Assets	280,500	295,100	**Shareholders Equity**		
			Capital Stock	20,000	20,000
			Paid-in-Capital	180,000	180,000
			Retained Earnings	471,652	355,725
			Total Shareholders Equ.	**671,652**	**555,725**
Total Assets	**1,093,802**	**1,018,610**	**Total Liab. & Sh. Equity**	**1,093,802**	**1,018,610**

Example

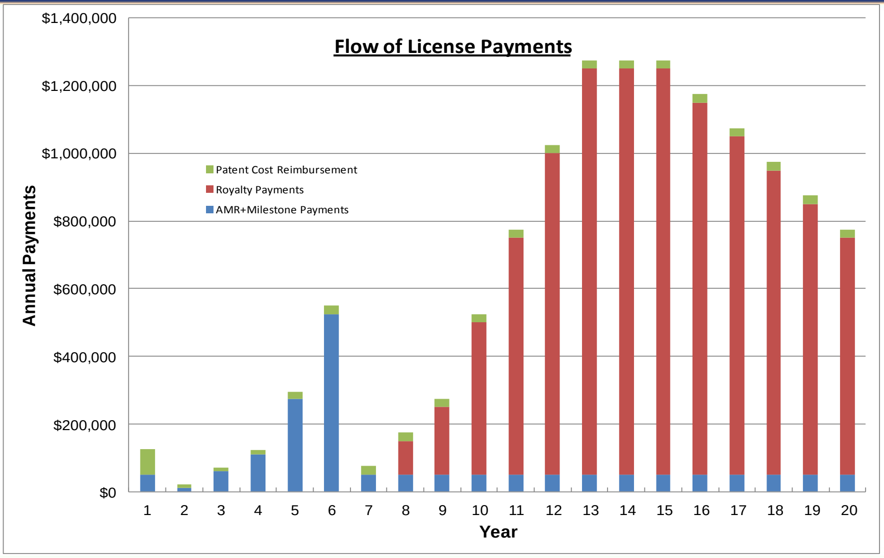
- License issue fee $50k
- Annual minimum royalties $10k yrs 2-4
  $25k yrs 5-7
  $50k thereafter
- Milestone payments $50k yr 3
  $100k yr 4
  $250k yr 5
  $500k yr 6
- Royalty rate 5%
- Sunk patent costs $75k
- Annual patent costs $10 - $25k

AUTM Professional Development Programs
www.autm.net/events

Product Sales

YEAR	PRODUCT SALES	YEAR	PRODUCT SALES
7	$750,000	14	$25,000,000
8	$3,000,000	15	$25,000,000
9	$5,000,000	16	$23,000,000
10	$10,000,000	17	$21,000,000
11	$15,000,000	18	$19,000,000
12	$20,000,000	19	$17,000,000
13	$25,000,000	20	$15,000,000

AUTM Professional Development Programs
www.autm.net/events



AUTM Professional Development Programs
www.autm.net/events

Time Value of Money

- Hypothetically, money can be loaned and borrowed at interest (but don't tell Janet Yellen)
- Simple interest: at an interest rate of 10% per year, if I borrow $1,000 today, then I will owe $1,100 one year from today
  - $1,000 + (10% of $1,000 = $100) = $1,100
- Compound interest: if I repay that loan in two years, then I will owe $1,210
  - $1,100 + (10% of $1,100 = $110) = $1,210

Conversely …

- Suppose somebody owed me $1,000 one year from today
- How much would I accept for it today?
- Using that imaginary 10% interest rate, my breakeven point would be about $909
  – $909 invested today would yield $90.90 in interest
  – $909 + $90.90 = $999.90
- Offer me $910 or above, and you've got a taker

AUTM Professional Development Programs
www.autm.net/events

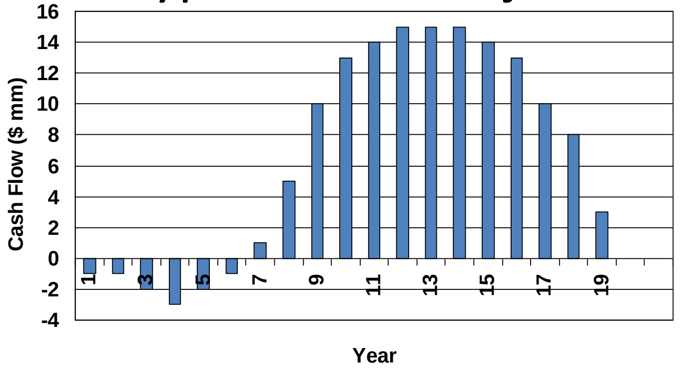
Net Present Value

- Model out expenses and revenues as realistically as you can as far out in the future as you need
- Discount each time period's cash flow using the formula
- Sum the discounted cash flows back to today
- Et, voilá, you have arrived at the Net Present Value of your Discounted Cash Flows

AUTM Professional Development Programs

www.autm.net/events

A Typical R&D Project

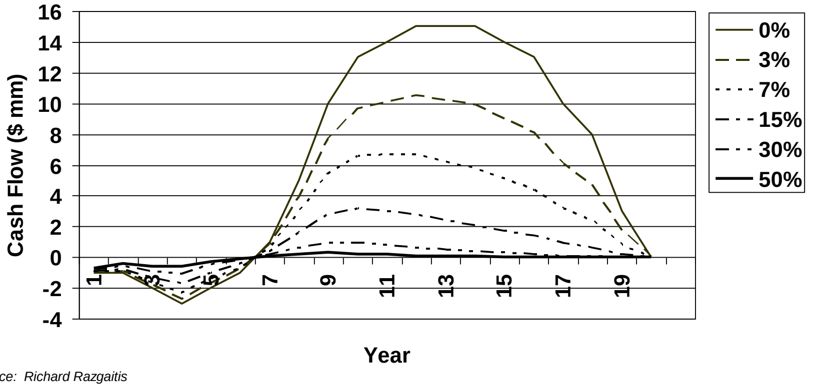


Source: Richard Razgaitis

AUTM Professional Development Programs

www.autm.net/events

How it looks at various discount rates



Source: Richard Razgaitis

AUTM Professional Development Programs
www.autm.net/events

Suggested Reading

- The AUTM Licensing Manual (1994 and 2003 Editions)
  - *Valuation -- Richard Razgaitis*
  - *Finding Comparables – Ashley Stevens*
- Valuation and Pricing of Technology-Based Intellectual Property

  Richard Razgaitis, 2002, Wiley Intellectual Property Series
- Use of the 25 Per Cent Rule in Valuing IP

  Robert Goldscheider, John Jarosz and Carla Mulhern, les Nouvelles 37 123-133, December 2002

AUTM Professional Development Programs
www.autm.net/events

Questions? Comments?

AUTM Professional Development Programs

www.autm.net/events

Discussion and Q&A

Click the raise hand button.

When called on, press * 7 on your telephone keypad to un-mute your phone.

Press * 6 to re-mute your phone.

AUTM Professional Development Programs

www.autm.net/events

Thank you for your participation.

Remember to complete our online survey.

AUTM Association of University Technology Managers® Advancing Discoveries for a Better World®

AUTM Professional Development Programs

www.autm.net/events

Thank you to our sponsors.

MARSHALL GERSTEIN ip

UNIVERSITY OF PITTSBURGH innovation INSTITUTE

AUTM Association of University Technology Managers® Advancing Discoveries for a Better World®

AUTM Professional Development Programs

www.autm.net/events

Webinar Recordings

Basics of Technology Transfer for Licensing Professionals
Basic Patenting 101
Copyright Law and Content/Software Licensing
Equity Based License Agreements
Financial Conflicts of Interest
Marketing: Whether By Traditional or Social Media, the Value
Need to Know Basics of Technology Transfer for Support Staff
Negotiation of License Agreements
Nuts and Bolts for Compliance Under Federal Funding Awards
The Basics of Open Source Licensing
Tips for Managing MTAs
Triage
Valuation of Inventions and Patents
(More Added Monthly)

www.autm.net/onlinelearning

AUTM
Association of University Technology Managers®
Advancing Discoveries for a Better World®

AUTM Professional Development Programs
www.autm.net/events

Register now for AUTM's next webinar

- **Valuation and Negotiation Webinar Series:**
  - **Part 3: Sharing Value: Thursday, Nov. 17**
  - **Part 4: Startup Issues: Thursday, Dec. 1**

- **European Patent Practice – The Good, The Bad and The Ugly**
  - **Wednesday, Nov. 16**

www.autm.net

AUTM
Association of University Technology Managers®
Advancing Discoveries for a Better World®

Association of University Technology Managers®
www.autm.net

AUTM 2017 Annual Meeting

March 12-15
Hollywood, FL USA

AUTM Professional Development Programs

www.autm.net/events

Have an Interesting Topic?

The Online Professional Development Committee is seeking proposals and speakers for potential webinars.

Submit Your Idea Today!

www.autm.net

AUTM Professional Development Programs

www.autm.net/events

Get Involved

We need your help. The Online Professional Development Committee is seeking professionals interested in joining their committee.

Interested? Please contact Melinda Briggs – mbriggs@autm.net