

Licensing as a Business Strategy

**New Jersey Institute of Technology
Venture Acceleration Bootcamp**

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Steve Ludmerer

- **Member of the Licensing Executives Society with over thirty-five years experience taking new concepts and technologies from concept to multi-million dollar sales: Teflon® II coatings, Reach® toothbrush, Tychem® protective fabrics, Parmod® conductive materials.**
- **In- and Out-Licensed a broad range of technologies including diagnostics, polymers, medical devices, electronic materials, consumer products, and others to companies worldwide. Grew and monetized businesses through angel and venture financing, alliances, licenses and public offerings.**
- **Experience in DuPont and Union Carbide/Dow and as leader of three entrepreneurial companies (immunoassay diagnostics, instrument and laboratory business electronic materials).**
- **Often collaborates with Foresight Science and Technology (www.foresightst.com) for business and technology assessments, licensing strategy and deal advisories. Focus is on advanced materials, nanotechnology, specialty chemicals, medical devices, and consumer products.**

Outline

- What is Licensing
- Why License, When to License
- Finding Licensees
- Choosing Licensees
- Valuing your IP
 - Royalty Rates/Transaction Data
 - Situational Factors
 - Discount Rates
- Example
 - Low Risk
 - High Risk
- Licensing Alternative
- Take Aways
 - Sources
 - Additional Assistance

What is licensing?

Licensing is the transfer of *intangible assets* (intellectual property) from one firm or organization to another.

Intangible Assets include:

Patents

Know-How

Copyrights

Trademarks

Trade Secrets

Other Protectable Assets

Why license (for the Licensor)

- ❑ Organization is R&D focus (University, Medical Center, R&D firm, etc.)
- ❑ Innovation outside organizational fit, resources
- ❑ Infrastructure needed for commercialization
 - Manufacturing
 - Market access – domestic and international
 - Functional staffing
- ❑ Focus resources on core development
- ❑ Component in the value chain – needs pull through
- ❑ Time and dollars to realize potential
- ❑ Competitive Landscape requires a family of offerings
- ❑ SWOT analysis indicates “gaps” can be “better” filled by others
- ❑ Licenses Can be Restricted in Field/Geography

Why license (for the Licensee)

- ❑ Strategic fit
- ❑ An asset that will make money
- ❑ Protectable competitive advantage
- ❑ Sword or Shield

Differentiate from something others can acquire (real estate, skilled scientists, marketers, free agent ballplayers, etc.)

When to license

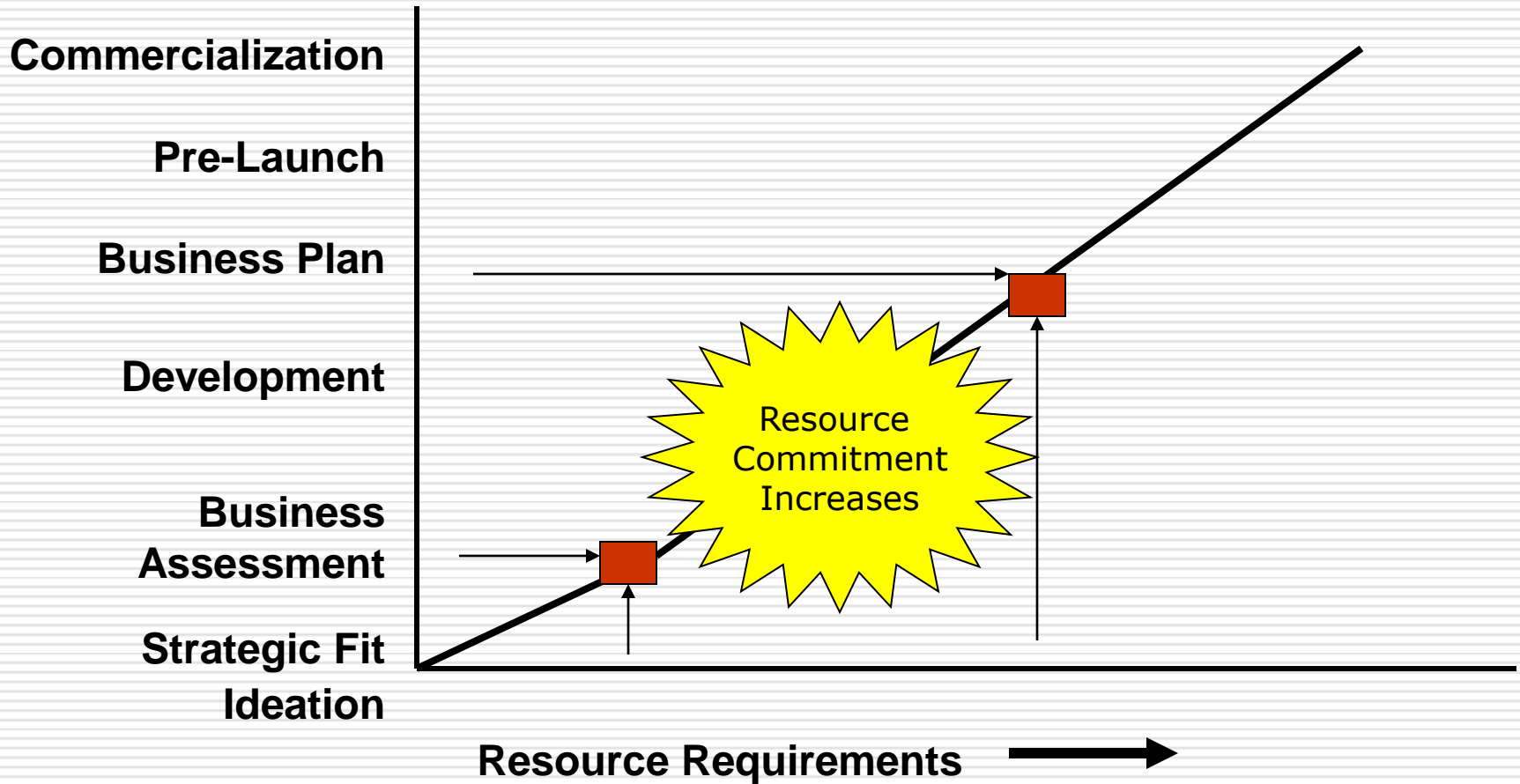
- Licensor capabilities
 - Licensor lacks capability to advance concept to commercialization
- Value increases
 - Patent status
 - Risk Reduction is reduced
 - Cost/Time to revenue decreases

For example.....

Seven Steps in Business Creation

- Idea Creation/Generation
- Scoping/Strategic Fit
- Business Assessment
- Development
- Business Plan
- Pre-Launch
- Commercialization

Business Value Evolves as Risks/Unknowns are Understood



License Value Increases with Technology Readiness Level (TRL)

- ❑ **TRL 1 Basic principles observed and reported**
- ❑ **TRL 2 Technology concept and/or application formulated**
- ❑ **TRL 3 Analytical and experimental critical function proof-of-concept**
- ❑ **TRL 4 Component/Subsystem/Product (CSP) validation in laboratory environment**
- ❑ **TRL 5 CSP validation in relevant environments (e.g. structural or environmental testing)**
- ❑ **TRL 6 CSP prototype demonstration in a relevant end environment (value chain).**
- ❑ **TRL 7 CSP prototype demonstration in an operational environment (pilot production; beta testing)**
- ❑ **TRL 8 CSP "mission/customer qualified" through test and demonstration in an operational environment**
- ❑ **TRL 9 CSP proven through successful practical use.**

Patent Increases in Value

- Idea Concept
- Provisional Patent Filed
- Product Viability Established
- Domestic Application Filed
- WIPO Application Filed
- Patent Granted
- Invention Demonstration in Use
- Made, Used and Sold Commercially

Methods to Value Intellectual Property

Cost Basis

- No longer used; Sunk cost is irrelevant

Income Basis

- How much of the income is attributable to the licensed IP
- EBIT generated from the licensed IP (versus w/o the IP) less cost of capital for plant and equipment, personnel, marketing, etc.
- Difficult for licensor to know/estimate

Revenue Basis - Comparables

- Similar IP and industry
- Industry specific royalty rate experience
- Reliable disclosure of license agreements
- Application of situational differences

Finding Licensees

- Analysis of Competition
 - Products
 - Patents
 - Research
- Analysis of Market Space
 - Industry Trade Associations
 - Industry Conferences and Expositions
 - Magazine and periodicals
 - Companies in the market space with other products

Choosing a Licensee

- Strategic Fit
 - Current competitors
 - Potential market entrants
 - Buyers, suppliers, former competitors
- Experience commercializing licensed technology
- Compelling reason for adoption
- Clear and persuasive ability to achieve objective
- Open dialogue toward a win-win deal

Typical Industry Royalty Rates

Royalty Rates for In-Licensing by Industry							
Industry	0-2%	2-5%	5-10%	10-15%	15-20%	20-25%	>25%
Aerospace	50.0%	50.0%					
Automotive	52.5%	45.0%	2.5%				
Chemical	16.5%	58.1%	24.3%	0.8%	0.4%		
Computer	62.5%	31.3%	6.3%				
Electronics		50.0%	25.0%	25.0%			
Energy		66.7%					
Food/Consumer		100.0%					
General Mfg.	45.0%	28.6%	12.1%	14.3%			
Government/University	25.0%	25.0%	50.0%				
Health Care	3.3%	51.7%	45.0%				
Pharmaceuticals	23.6%	32.1%	29.3%	12.5%	1.1%	0.7%	0.7%
Telecommunications	40.0%	37.3%	23.6%				

Source: NJSBDC Presentation December 8, 2004

Transaction Data - RoyaltySource.com

Industry	Average	Median	Max	Min	Count
Chemicals	4.7%	4.3%	25.0%	0.1%	78
Internet (incl software)	11.8%	8.8%	50.0%	0.3%	88
Telecom (excl Media)	4.9%	4.5%	15.5%	0.4%	73
Consumer Gds, Rtl & Leis	5.5%	5.0%	28.0%	0.1%	98
Media & Entertainment	9.1%	5.0%	50.0%	2.0%	25
Food Processing	3.2%	2.8%	10.0%	0.3%	38
Medical/Health Products	6.1%	5.0%	77.0%	0.1%	376
Pharma & Biotech	7.0%	5.0%	50.0%	0.0%	458
Energy & Environment	5.0%	5.0%	20.0%	1.0%	107
Machines/Tools	5.2%	4.5%	25.0%	0.5%	90
Automotive	4.3%	3.5%	15.0%	0.5%	59
Electrical & Electronics	4.2%	4.0%	15.0%	0.5%	139
Semiconductors	4.3%	3.0%	30.0%	0.0%	75
Computers & Office Equip	5.3%	4.0%	25.0%	0.2%	73
Software	11.5%	6.8%	70.0%	0.0%	147
Industry Summary	6.40%	4.80%			1,924

Source: NJSBDC Presentation December 8, 2004

Situational Factors Impacting Royalty Rates

- ❑ Significance of the Invention
- ❑ Maturity of Technology (TRL)
- ❑ Level of IP Protection
- ❑ Competitive Landscape

- ❑ Platform Technology
- ❑ Field of Use/Geography of Use
- ❑ Exclusivity/ Non-Exclusivity

- ❑ Upfront Payment
- ❑ Minimum Royalty
- ❑ Milestone Payments
- ❑ Duration of Agreement
- ❑ Time to Commercial Marketing/Sales

- ❑ Patent Maintenance and Enforcement Burden
- ❑ Ancillary Services (R&D, Training, Support, etc.)

Typical Discount Rates

<u>Risk Level</u>	<u>Approximate Discount Rate (%)</u>	<u>Description</u>
Risk Free	10 - 18	Existing product, high demand, building more of the same
Very Low Risk	15 - 20	New well understood technology for an existing product
Low Risk	20 - 30	New features, well understood technology into an existing market
Moderate Risk	25 - 35	New product, well understood technology into market with competition
High Risk	30 - 40	New product, not well understood technology into an existing market.
Very High Risk	35 - 45	New product, new technology, new market
Extremely High Risk	50 - 70	New company, unproven technology, new market

Source: Richard Razgaitis, "Early-Stage Technologies: Valuation and Pricing" John Wiley & Son 1999.

An Example

Low Risk Technology License

License Terms	
Royalty rate on gross sales	3%
License Issue Fee(s) (\$000)	\$100
License Maintenance Fee	\$0

Timing	
First year of analysis -->	2010
First year of Market Sales -->	2013

Year Year Ending	Discount Rates									
	1 2010	2 2011	3 2012	4 2013	5 2014	6 2015	7 2016	8 2017	9 2018	10 2019
Inflation	1.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Discount Rate	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%	20.0%
Total Discount for NPV	21.0%	22.0%	22.0%	22.0%	22.0%	22.0%	22.0%	22.0%	22.0%	22.0%

Invention Addressing \$200MM Market

STARTING ASSUMPTIONS - MARKET

Total Market Size for Upcoming Year (\$000)		\$200,000
Market Growth Rate	yrs 1-4	8.0%
	yrs 5-8	5.0%
	yrs 9-10	4.0%

Year Year Ending	Sales Projection By Year									
	1 2010	2 2011	3 2012	4 2013	5 2014	6 2015	7 2016	8 2017	9 2018	10 2019
Total Market Forecast (\$000s)	\$200,000	\$216,000	\$233,280	\$251,942	\$264,540	\$277,766	\$291,655	\$306,238	\$318,487	\$331,227
Licensee Market Share				2%	8%	15%	30%	40%	45%	50%
Licensee Gross Sales Forecast (\$000s)	\$0	\$0	\$0	\$5,039	\$21,163	\$41,665	\$87,496	\$122,495	\$143,319	\$165,613

Low Risk Scenario

Licensee Revenues										
Year Year Ending	1 2010	2 2011	3 2012	4 2013	5 2014	6 2015	7 2016	8 2017	9 2018	10 2019
Licensee Gross Sales Forecast (\$000)	\$0	\$0	\$0	\$5,039	\$21,163	\$41,665	\$87,496	\$122,495	\$143,319	\$165,613
NPV of revenues (\$000)	\$0	\$0	\$0	\$2,275	\$7,830	\$12,636	\$21,751	\$24,960	\$23,937	\$22,672
Cumulative NPV of Revenues	0	\$0	\$0	\$2,275	\$10,105	\$22,741	\$44,492	\$69,451	\$93,388	\$116,060
Licensor Revenues										
Year Year Ending	1 2010	2 2011	3 2012	4 2013	5 2014	6 2015	7 2016	8 2017	9 2018	10 2019
License Issue Fee (\$000)	\$100									
Subtotal	\$100	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Royalty on gross sales (\$000)	0	0	0	151	635	1,250	2,625	3,675	4,300	4,968
Total Licensor Revenue (\$000s)	\$100	\$0	\$0	\$151	\$635	\$1,250	\$2,625	\$3,675	\$4,300	\$4,968
Cumulative royalty revenue (\$000)	\$100	\$100	\$100	\$251	\$886	\$2,136	\$4,761	\$8,436	\$12,735	\$17,704
NPV of royalty revenue (\$000)	\$83	\$0	\$0	\$68	\$235	\$379	\$653	\$749	\$718	\$680
Cumulative NPV of royalty revenue (\$000)	\$83	\$83	\$83	\$151	\$386	\$765	\$1,417	\$2,166	\$2,884	\$3,564

New Market, New Technology, New Product

License Terms	
Royalty rate on gross sales	3%
License Issue Fee(s) (\$000)	\$100
License Maintenance Fee	\$0

Timing	
First year of analysis -->	2010
First year of Market Sales -->	2013

Year Year Ending	Discount Rates									
	1 2010	2 2011	3 2012	4 2013	5 2014	6 2015	7 2016	8 2017	9 2018	10 2019
Inflation	1.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Discount Rate	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%
Total Discount for NPV	41.0%	42.0%	42.0%	42.0%	42.0%	42.0%	42.0%	42.0%	42.0%	42.0%

High Risk Scenario

Licensee Revenues										
Year Year Ending	1 2010	2 2011	3 2012	4 2013	5 2014	6 2015	7 2016	8 2017	9 2018	10 2019
Licensee Gross Sales Forecast (\$000)	\$0	\$0	\$0	\$5,039	\$21,163	\$41,665	\$87,496	\$122,495	\$143,319	\$165,613
NPV of revenues (\$000)	\$0	\$0	\$0	\$1,239	\$3,666	\$5,082	\$7,516	\$7,410	\$6,105	\$4,968
Cumulative NPV of Revenues \$(000)	0	\$0	\$0	\$1,239	\$4,905	\$9,987	\$17,503	\$24,913	\$31,018	\$35,986
Licensor Revenues										
Year Year Ending	1 2010	2 2011	3 2012	4 2013	5 2014	6 2015	7 2016	8 2017	9 2018	10 2019
License Issue Fee (\$000)	\$100									
Subtotal	\$100	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Royalty on gross sales (\$000)	0	0	0	151	635	1,250	2,625	3,675	4,300	4,968
Total Licensor Revenue (\$000s)	\$100	\$0	\$0	\$151	\$635	\$1,250	\$2,625	\$3,675	\$4,300	\$4,968
Cumulative royalty revenue (\$000)	\$100	\$100	\$100	\$251	\$886	\$2,136	\$4,761	\$8,436	\$12,735	\$17,704
NPV of royalty revenue (\$000)	\$71	\$0	\$0	\$37	\$110	\$152	\$225	\$222	\$183	\$149
Cumulative NPV of royalty revenue (\$000)	\$71	\$71	\$71	\$108	\$218	\$371	\$596	\$818	\$1,001	\$1,151

Comparison

	<u>Lower Risk</u>	<u>Higher Risk</u>
NPV of Total Revenue (000)	\$116,000	\$36,000
Cumulative Royalty Revenue (000)	\$17,700	\$17,700
Cumulative NPV of License (000)	\$3,564	\$1,151

Comparison vs. Venture Investment

	<u>Lower Risk</u>	<u>Higher Risk</u>
NPV of Total Revenue (000)	\$116,000	\$36,000
Basis for Venture Investors – NPV of earnings (000)	\$~ 23,200 (est 20%)	\$~7,200 (est. 20%)
Cumulative NPV of License (000)	\$3,564	\$1,151

Takeaways

- ❑ Licensing can be an attractive strategy to monetize an innovation
- ❑ Licensing can be core or ancillary strategy
- ❑ Licensing helps validate patents
- ❑ Establishing and defending royalty rates and discount rates is an important consideration in your negotiations
- ❑ High risk, high investment scenarios are often attractive for licensing

Helpful Sources

□ **Free Sites**

- Web Search sites (Google - Advanced Search; Google Scholar; Site:.xxx, etc.)
- Licensing Executives Society - www.usa-canada.les.org
- SEC Filings - www.sec.gov/edgar.shtml
- U.S. Patent & Trademark Office - www.uspto.gov
- Industry Sites
 - ThomasNet - www.thomasnet.com
 - GlobalSpec - www.Globalspec.com
 - PubMed - <http://www.ncbi.nlm.nih.gov/sites/myncbi/searches/?db=>
 - Energy Information Administration - <http://www.eia.gov/>

□ **Fee for Service Sites**

- Delphion IP Network - www.delphion.com
- Frost & Sullivan - www.frost.com
- High Beam - www.highbeam.com
- Hoovers - www.hoovers.com
- Royalty Stat www.royaltystat.com
- Royalty Source <http://royaltysource.com/>

□ **Ludmerer & Associates LLC / Foresight Science & Technology**

- T2+2™ Technology Transfer Tools and Training
- Business Plans, Assessments, Market Overviews, Royalty Rates, Transaction Compilations, Pipeline Partners, Venture Capital Sources, Angel Sources

Contacts

Thank You!

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