PATENT VALUATION METHODOLOGIES

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Name 5 Highly Successful Products

1.
2.
3.
4.
5.

Are patents key to the success of any of these?

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The 100 Best Products, in Ranked Order From PC World Survey

- Hulu
- Apple iPhone
- Facebook
- Microsoft Windows XP
- Lenovo ThinkPad X300
- Flock
- Eye-Fi
- Casio Exilim Pro EX-
- Harmonix Rock Band
- Wikipedia
- Netflix
- Microsoft Xbox Live
- Apple iPod Touch
- Craigslist
- Scrabulous
- Nintendo Wii
- Apple Mac OS 10.5 Leopard
- Apple HD Cinema Display
- Twitter
- Pioneer Kuro PDP-5010FD
- Mozilla Firefox 3
- Apple Safari
- NPR.org
- Adobe Photoshop CS3
- Google Maps--Street View
- Apple MacBook Pro (Penryn)
- Google Docs & Spreadsheets
- Apple Final Cut Studio 2
- Linksys WRT600N
- Flickr (Yahoo)
- Sony Bravia KDL-52XBR4
- Intel Penryn
- Apple iChat
- Creative Zen
- Verizon FiOS
- Pandora
- Canon EOS 40D
- LG Electronics L196WTY-BF
- TiVo HD
- Data Robotics Drobo DRO4DU10 4 Bay Hard Drive Array
- Google Gmail
- Electronic Arts Rock Band
- Mozilla Thunderbird
- Dell XPS
- Washington Post
- Yelp.com
- Nikon D60
- The Consumerist
- AdventNet Zoho
- OpenDNS PhishTank
- Western Digital VelociRaptor
- NYTimes.com
- Motorola MotoRokr T505 Car
- SanDisk Cruzer Titanium Plus
- Dash
- Panasonic TH-42PZ700U
- Netgear ReadyNAS Duo
- Symantec Norton IS 2008
- RIM Blackberry Curve 8300 Series
- Vimeo
- SideStep.com
- Alienware Area-51 m15x
- Microsoft TellMe
- Amazon MP3
- Samsung SyncMaster 305T
- Apple Logic Studio
- Gateway XHD3000
- HP Photosmart C5280
- USB Safely Remove 3.3
- Samsung LN-T4061
- nVidia GeForce 8800GT
- Cerulean Studios Trillian
- Creative Aurvana X-Fi
- Olympus SP-570 UZ
- Apple iMac
- Samsung 2263DX
- Canon Vixia HF10
- Mint
- VMWare Fusion
- Apple TV Take 2
- YouTube (Google)
- Chestnut Hill Sound George
- Microsoft Office 2007
- Intel SkullTrail
- Canon Pixma MX700
- AT&T Tilt
- Canon Powershot SD1100 IS
- Vizio Gallevia GV42LF
- Apple MacBook Air
- Ubuntu Linux
- The Orange Box (Valve Corp.)
- Digg
- Asus U2E
- Meebo
- HP Blackbird 002 LCi
- Partition Logic
- Palm Centro
- Audacity
- Lifehacker
- Jing Project

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Name 5 Highly Successful Products

1. iPod
2. iPhone
2. Flat panel TV's
3. Digital cameras
4. Cell Phones
5. PG&E Swiffer

Are patents key to the success of any of these?

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Name 5 Products Where a Patent Was Key to its Success

1.
2.
3.
4.
5.

Can you name <u>any</u>?

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2007 Licensing Revenues Selected Companies

Institution	U.S. Patent Portfolio	Annual Licensing Revenue	$/Patents
IBM	26,000	$ 368,000,000	$ 14,154
Rambus	630	$ 154,300,000	$ 5,935
LG Phillips LCD Co.	2,254	$ 175,000,000	$ 6,731
University of California	3,425	$ 98,000,000	$ 3,769
International Game Technology	791	$ 26,000,000	$ 1,000
Pioneer	4,694	$ 20,000,000	$ 769
TDK	3,679	$ 800,000	$ 31

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So Why All The Fuss Over Patents?

1. Maintenance of existing sales.
2. Demonstration of technical leadership.
3. Admission ticket to a market.
4. Defense against patent suits.
    a. Do it before someone else does.
    b. Use it to countersue.
5. Handicap a competitor.
6. Royalty income.
7. Increase Firm Profits

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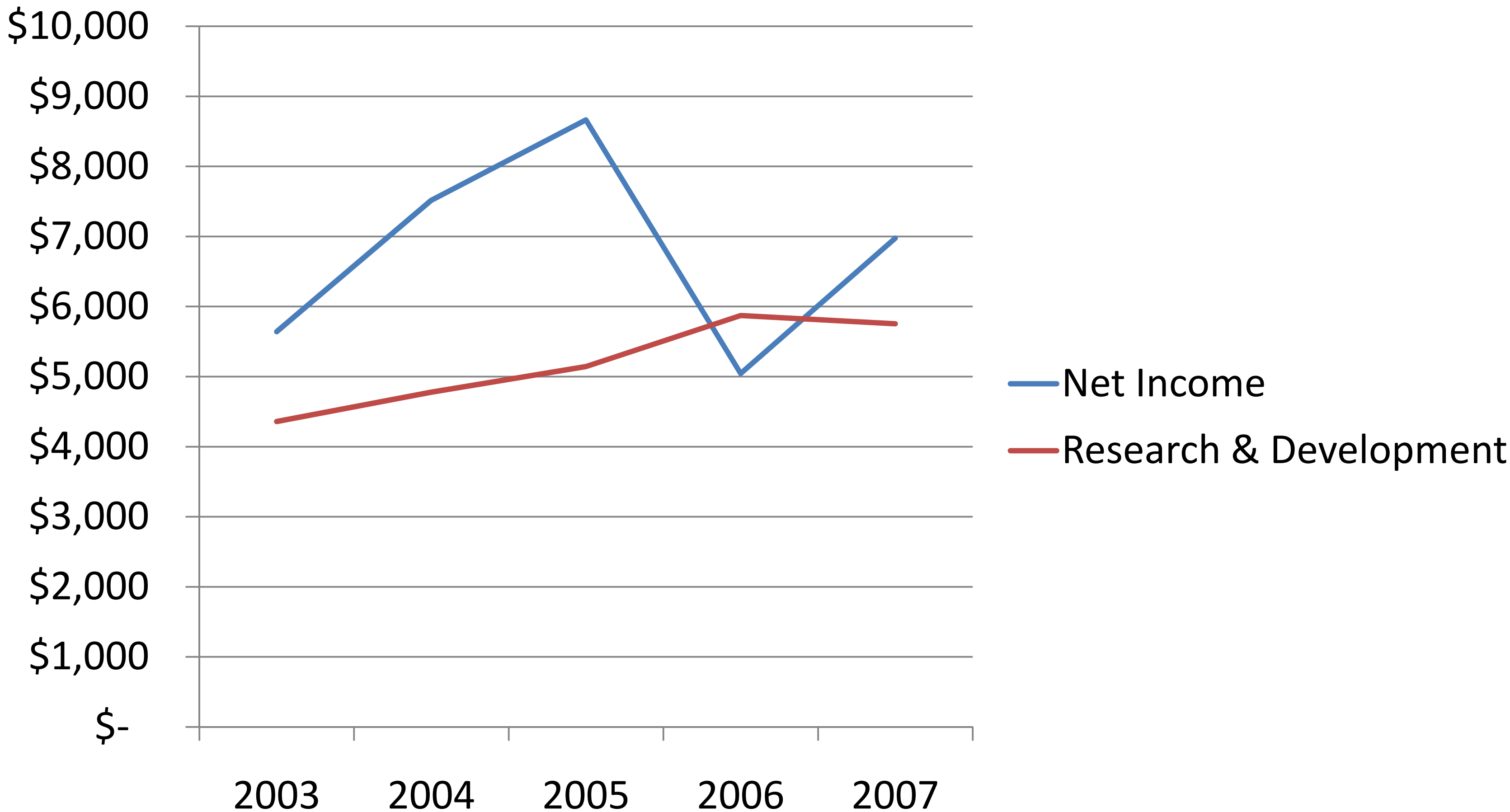
Intel: Net Income and R&D Expenditures



Patent Values Are Very Skewed

- Revenues in Licensing Programs tend to come from a handful of patents.

- Royalty rates and lump sum payments often are clustered with only a few outliers.

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UC 2007 Licensing Revenues

UC TOP-EARNING INVENTIONS
Year Ended June 30, 2007
(Thousands)

Invention (campus, Year disclosed)		
Hepatitis-B Vaccine (SF, 1979 and 1981)	$	14,656
Treatment of Intracranial Aneurysms (LA, 1989)	$	11,122
Egf Receptor Antibodies (SD, 1983)	$	8,700
Interstitial Cystitis Therapy (SD, 1980)	$	7,160
Bovine Growth Hormone (SF, 1980)	$	6,083
Subtotal (top Five Inventions)	**$**	**47,721**
Biodegradable Implant Coils (LA, 1998)	$	4,071
Dynamic Skin Cooling Device (IR, 1993)	$	3,231
Camarosa Strawberry (DA, 1992)	$	1,942
Chromosome Painting (LLNL, 1985)	$	1,715
Nicotine Patch (LA, 1984)	$	1,653
Energy Transfer Primers (BK, 1994)	$	1,451
Firefly Luciferase (SD, 1984)	$	1,413
Genomic Microarrays (SF, 1995)	$	1,176
Feline AIDS Virus Diagnostic (DA, 1986)	$	1,174
Comparative Genomic Hybridization (SF, 1992)	$	1,154
Aids for Learning Disabled (SF, 1994)	$	1,094
Liposome Storage Method (DA, 1984)	$	1,077
Ventana Strawberry (DA, 2001)	$	828
Laser/Water Atomic Microscope (SB, 1989)	$	752
Fluorescent Dyes-Calcium (BK, 1984)	$	736
Albion Strawberry (DA, 2004)	$	708
Cochlear Implants (SF, 1979)	$	672
Universal Oligonucleotide Spacer (BK, 1996)	$	544
Magnetic Resonance Imaging (SF, 1976)	$	403
Efficient GaN-based LEDs (SB, 2004)	$	400
Total income (Top 25 inventions)	**$**	**73,915**
Total income (all inventions)	**$**	**97,594**
% of Total from Top 5 inventions		**48.9%**
% of Total from Top 25 inventions		**75.7%**

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NYU 2006 Licensing Revenues

- R&D Expenditures = $210 million
- Licensing revenues = $175 million
- One drug, Remicade, dominates the revenue stream.

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Ohio State 2006 Licensing Revenue

- One drug, Somavert, accounted for 90%.

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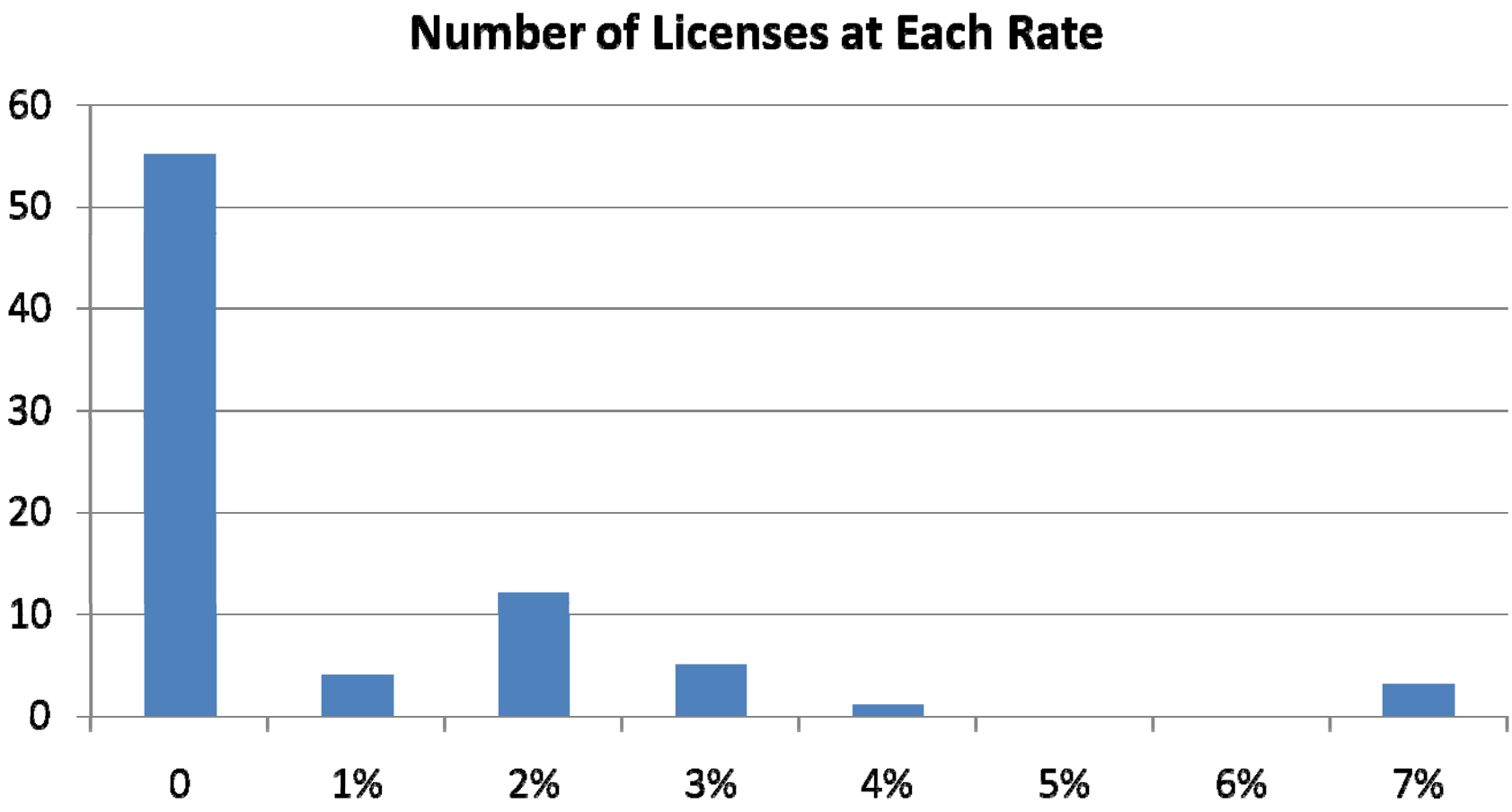
Typical Distribution of Royalty Rates



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When Are Patents Most Valuable

1. When they cause consumers to buy more of the product.

    a. Technological obsolescence (e.g. PC's)

    b. Increased utility for existing or new user (e.g. Cell Phones)

2. When the patented feature is a primary factor in the demand for the product, i.e. the patent is the product (e.g. drugs, velcro, stickey notes, etc.)

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Three Basic Valuation Methodologies

1. Cost
2. Market
3. Income

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A Fourth Valuation Methodology is Right 98% of the Time.

What Is It?

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A Fourth Valuation Methodology is Right 98% of the Time.

VALUE = $ 0

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1. Cost Approach: Defensive /Maintenance Patents

Value = Cost of Acquiring or Developing an Equivalent Portfolio

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1. Cost Approach: Income Patents

Value = cost of next best alternative

- Invent around
- Add a different features
- Lower price
- Promote a different product

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2. Market Approach

1. Examination Actual Transactions:
   - Comparable Patents
   - Part of an Efficient Market
   - Contemporaneous
   - Arm's Length
2. Inference

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2. Market Approach: "Comparable"

- Significance to the Consumer
- Industry
- Growth Prospects
- Legal protection
- Remaining Economic Life

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3. Income Approach

Value = Net Present Value

of Future Economic Benefits

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3. Income Approach: NPV Example

Ann License Revenue		$	14,154
Discount Rate			15%
Year	NPV factor		NPV
1	0.869565217	$	12,308
2	0.756143667	$	10,702
3	0.657516232	$	9,306
4	0.571753246	$	8,093
5	0.497176735	$	7,037
6	0.432327596	$	6,119
7	0.37593704	$	5,321
8	0.326901774	$	4,627
9	0.284262412	$	4,023
10	0.247184706	$	3,499
	Value	$	71,036

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3. Income Approach: Future Economic Benefits

1. Incremental Profit
    - Premium Pricing
    - Lower Costs
    - Extra Sales
2. Relief From Royalty

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3. Income Approach: Discount Rate

The Discount Rate should reflect all of the uncertainty surrounding the associated income stream.

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3. Income Approach: Discount Rate for a Licensed Patent

- WACC of the Licensee (at a minimum)
- Risk of Technological Obsolescence
- Risk of successful patent challenge (if provided for in license).

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Other Issues in Valuing Patents

- In What Context?
  - Acquisition
  - Tax
  - Litigation
- To Whom?
  - Industry Participant
  - University
  - Licensing Company
- What Time period?

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Do Profits Matter For A Nonexclusive License?

- Increased Margins?
  - Increased Prices
  - Lower Costs?
- Increased Volume?

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Pitfalls

Be Conscious About What You Are Valuing:
Complimentary Assets

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