

# Enhancing Shareholder Value Through IP Disclosure

By

Baruch Lev

New York University

[blev@stern.nyu.edu](mailto:blev@stern.nyu.edu)

Baruch-lev.com

March 2007

© Copyright (2007) Baruch Lev. All Rights Reserved.

# The Problem: Investors In the Dark

- Deficient and distorted accounting and reporting rules:
  - Some IC investments are expensed, others are capitalized.
  - Except for R&D, IC expenditures not disclosed.
  - R&D expenditures not defined.
  - Goodwill—a black hole.
  - Most importantly: Accounting is uninformative about crucial input-output linkages:
    - R&D → Patents → Innovative Revenues
    - Alliances → Patents → Cost Savings
    - Employee Training → Turnover → Efficiencies

Accounting for IC in the Dark Ages

# The Consequences: The Lemon's Discount

- In capital markets—no news is bad news.
- Information asymmetry and Akerlof's Lemons.
- Consequences of IC information deficiencies:
  - Shares of IC-intensive companies deeply undervalued, leading to:
    - Excessive of capital → Low corporate investment and growth
    - Difficulties hiring and maintaining key talent.
    - Particularly serious for small, young companies.
    - High quality IC crowded out, moving abroad.

Very Adverse consequences to companies and investors

# Not Armchair Conjectures; Evidence-Based

- The methodology of identifying mispriced securities.
- Research mainly on R&D, but if R&D—which is reported—is undervalued, other IC investments are discounted even more deeply.
- Eberhart, Maxwell and Siddique (*Journal of Finance*, April 2004), examining companies which increased unexpectedly R&D (8,313 firms, 1951-2001):
  - “Our results provide strong evidence that investors systematically underreact to the benefits of an R&D increase.” (p. 648)

# How to Identify Mispricing?

Rank Stocks on Known  
Information, such as:

Compute **Subsequent** Abnormal,  
Risk-Adjusted Portfolio Returns

R&D Intensity in 2000

Fair Valuation

Undervaluation

Overvaluation

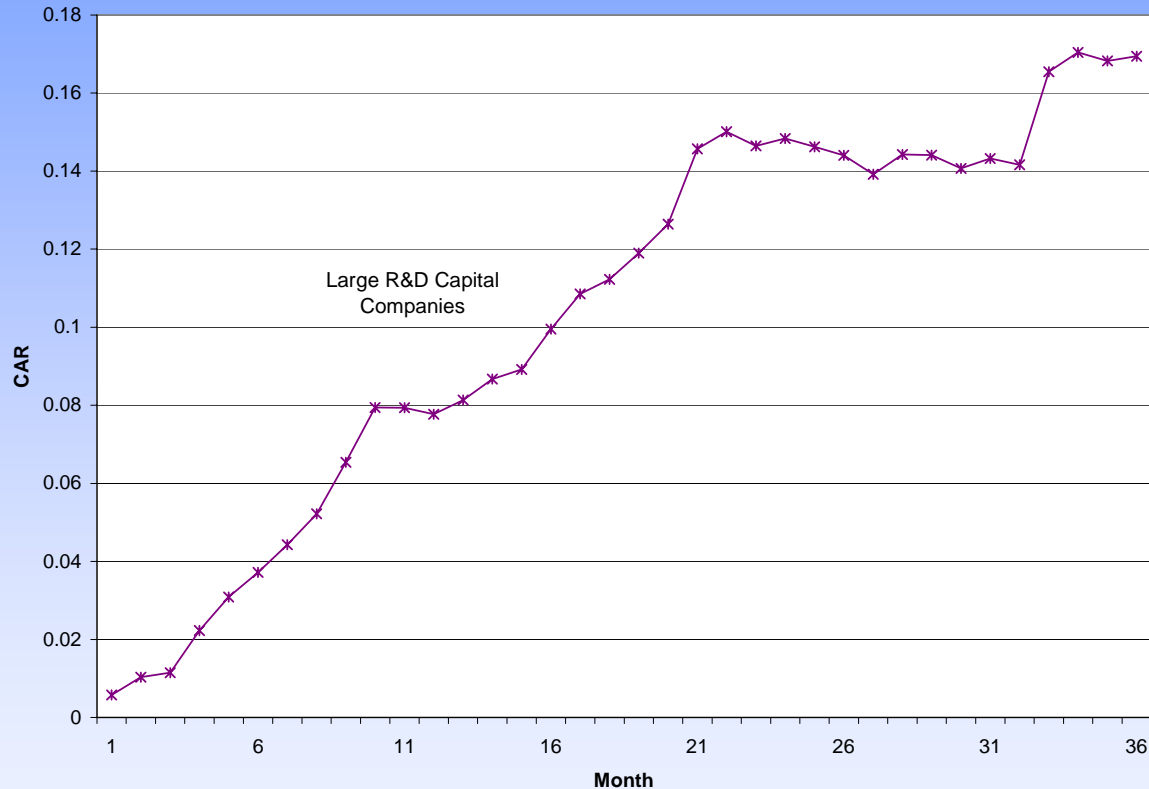
High Intensity  
Stocks

Zero  
Returns

Positive  
Returns

Negative  
Returns

# The Consequences of Expensing R&D: Deep Undervaluation, Evidenced by High Subsequent Risk-Adjusted Returns



From: Lev, Nissim, Thomas, "On the Informational Usefulness of R&D Capitalization and Amortization," 2005.

# Recapitulating

Information Deficiencies (Asymmetries)



Share Undervaluation (Lemon Discount)



Excessive Cost of Capital



Underinvestment, Lost Growth, Lost  
Competitiveness

What's To Be Done?

# Enhance Responsible Disclosure, Of Course, But...

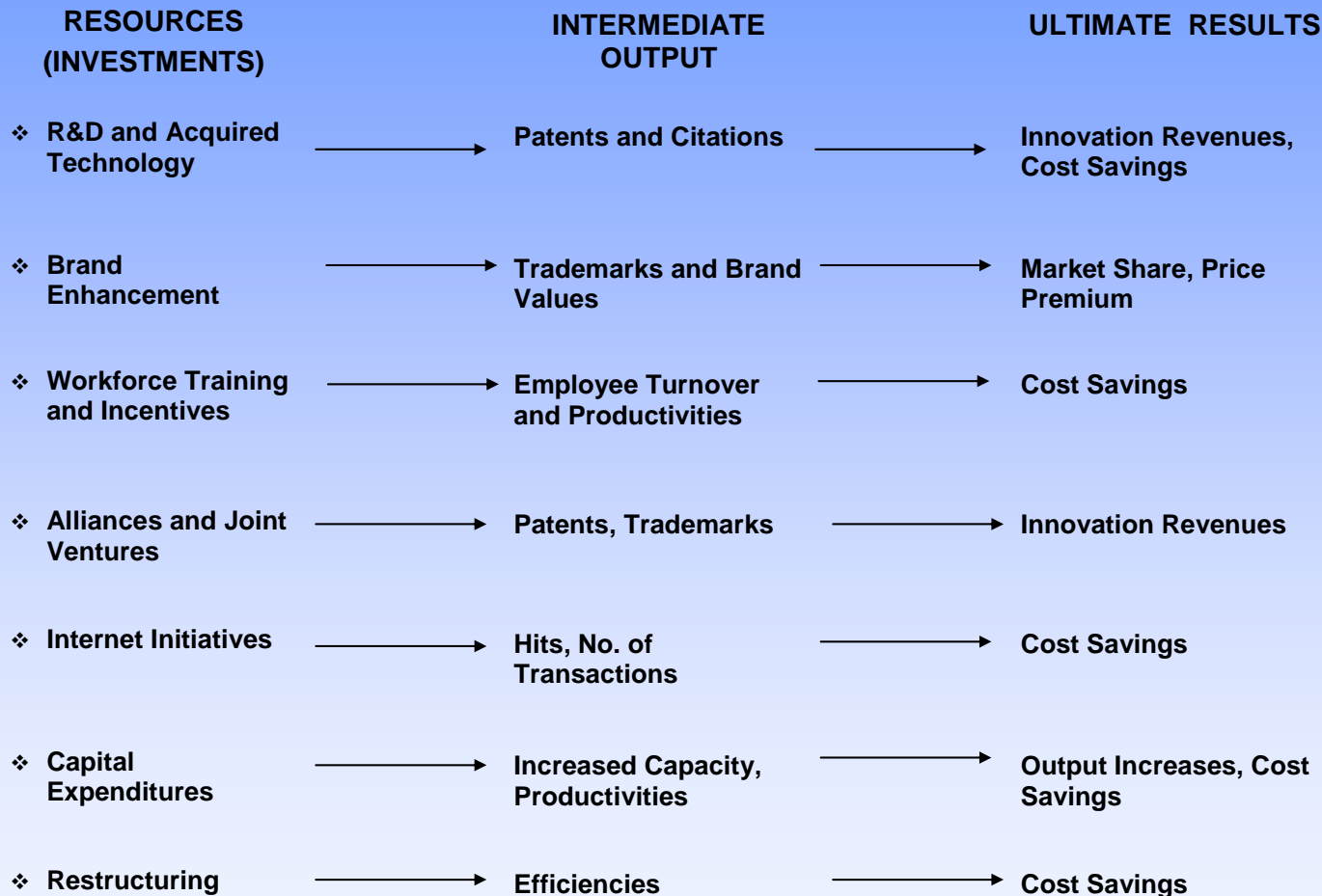
- Managers often don't know:
  - DuPont
  - Leading biotech companies
  - SwissRe
  - Employee training-survey
  - McKinsey on alliances/joint ventures

So, first order of business is “to know,”  
but know what?

# McKinsey on Alliances

“Most large companies now have at least 30 alliances, and many have more than 100. Yet despite the ubiquity of alliances—and the considerable assets and revenues they often involve—very few companies systematically track their performance. Doing so is not a straightforward task... Our experience suggests that fewer than one in four has adequate performance metrics... Few Senior management teams know whether the alliance portfolio as a whole really supports corporate strategy.”

# What Investors Want to Know: Input-Output Linkages



**FACTS, NOT CONJECTURES**

↓  
Aggregate Impact on  
Earnings and Cash  
Flows

# A First Step: The Product Pipeline

## Pharma/Biotech Pipeline

CORIXA CORP

10K filed with SEC on 12/31/00

PRODUCTS	DISEASE/INDICATION	DEVELOPMENT STAGE	PARTNER(S)
AUTOIMMUNE DISEASE			
MPL(R) adjuvant	Enhance efficacy of certain allergy vaccines	Phase III	Allergy Therapeutics holds co-exclusive rights;
PVAC(TM) treatment	Moderate to severe psoriasis	Phase II	Medicis Pharmaceutical and Zenyaku Kogyo
ANERGIX.RA(TM) complex	Rheumatoid arthritis	Phase I/II	Organon
ANERGIX.MS(TM) complex	Multiple sclerosis	Phase I/II	Unpartnered
ANERVAX.RA(TM) vaccine	Rheumatoid arthritis	Phase I/II	Unpartnered
MPL(R) adjuvant	Enhance efficacy of certain allergy vaccines	Preclinical	GSK holds co- exclusive rights
IFNAR	Several autoimmune indications	Preclinical	Unpartnered

- Even more useful: Patent protection, Expected market size, Expected market share, Launch dates.

# Will It Work? Again, Evidence Speaks

- Guo, Lev and Zhou ( “Competitive Costs of Disclosure by Biotech IPOs,” 2004)  
Extended information in biotech IPO prospectuses on patent protection, product development stage, market potential and human resources *increases* IPO price and *decreases* stock volatility and investors’ transaction costs (cost of capital).
- Gu and Lev (“The Information Content of Royalty Income,” 2004)  
Information on royalty income from licensing patents and IP increases investors’ valuation of R&D.
- Aboody and Lev ( “The Value-Relevance of Intangibles,” 1998)  
Capitalization of software development costs improve prediction of future earnings.

# Competitive Harm and Litigation Exposure: Red Herrings

- Extensive IC disclosure in pharma and biotech—fiercely competitive sectors—doesn't harm the disclosers.
- Information on key value-drivers, such as same-stores sales, order backlog, or airline passenger (cargo) load factor doesn't do harm.
- Litigation is about lies, not facts; about forward-looking, misleading pronouncements, not factual input-output linkages.

# Takeaway

- The deficient and distorted information about IC and its consequences causes significant harm to companies and their shareholders.
- Frequently, managers too are in the dark regarding IC.
- First order for managers—get informed.
- Then, disclose credibly and consistently.
- Disclose what? Input-output linkages, leading to performance consequences.