



UNITED NATIONS  
DEPARTMENT OF ECONOMIC AND SOCIAL AFFAIRS  
STATISTICS DIVISION

IA/Keynote  
11 July 2006

**Seminar**  
**Creation, Recognition and Valuation**  
**of**  
**Intellectual Assets**

**New York, 13 – 14 July 2006**  
United Nations, Conference room 6

**Intangible Assets**  
**Issues and Solutions**

**By**

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# Intangible Assets Issues and Solutions

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## The Good News

- ❖ It's Now Widely Recognized: Intangibles Are The Main Value Driver of Business Enterprises, and National Economies.
- ❖ Nakamura: A Trillion Dollars a Year of Investment in Intangibles. Capital: \$5-6 Trillion.
- ❖ Investors' Valuation: S&P 500 Average Market-to-Book Ratio in 2005: 4.1.
- ❖ Intangibles Survived the Tech Bubble Burst and Corporate Scandals.
- ❖ The Historical Cycle: Intangibles Increasingly Become Commodities.

So, Why Bother?

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## Intangibles Are Different:

- ❖ Unique assets (compare: Real estate, Financial assets).
- ❖ Not traded in organized markets (No exit strategy).
- ❖ Hazy property rights (Trained employees, supply channels).
- ❖ Deficient information (In-house training, fair value of R&D).

### Consequently:

- ❖ Substantial information asymmetries between managers and investors (also policymakers).
- ❖ Considerable ignorance within business enterprises. (Return on types of R&D, Benefits of brand enhancement, When is investment in IT enough?)

Information Deficiencies Cause Serious Problems

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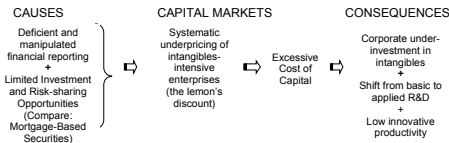
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## Intangibles' Vicious Cycle



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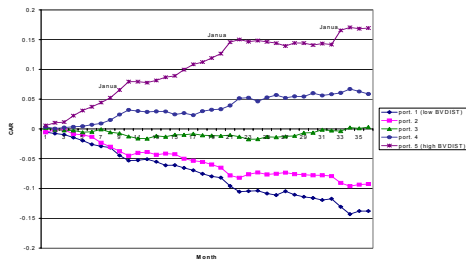
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## How Do We Know?

Figure 2: Cumulative Abnormal Returns (CAR) to BVDIST Portfolios



Cumulative abnormal return (CAR) is measured as the cumulative sum of the portfolio monthly abnormal returns. Portfolio monthly abnormal return for each of the 36 months is calculated as the average abnormal return for the corresponding month across all first-year observations that "belong" to the portfolio. Monthly abnormal return is calculated as the difference between the firm's return and the contemporaneous return on a SIZE and B/M matched portfolio (SIZE and B/M are updated every twelve months).

Source: Lev, Nissim, Thomas. 2001. "On the Informational Usefulness of R&D Capitalization."

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## It's Not Better Within Businesses: Example: Monitoring 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."

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### Not Knowing Where to Cut: 3M Co.\*

“For a company with a glorious tradition of innovation, generating products wouldn’t seem to be a major hurdle. But although in absolute terms spending on research continues to rise—3M is expected to spend \$1.1 billion in 2003, 3% above the prior year’s level, and 3.8% over 2001’s—spending on R&D as a percentage of sales is declining...McNerney’s critics argue that he is mortgaging 3M’s future.”

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“One time-honored prerogative has virtually disappeared—the “15% Rule” that let scientists spend 15% of their time “fiddling” on projects with no immediately foreseeable return.”

“Art Fry a retired 3M scientist who developed Post-it Notes... questions whether he could have developed Post-it in 3M’s current stringent atmosphere.”

❖ The Consequence: “3M Stock sees biggest loss in 9 years. The maker of post-it says it expects 2Q income to fall below expectations due to lower-than-expected sales in optical systems division.”\*\*

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### The Information Deficiencies’ Results: Corporate Resource Misallocation

❖ The Large Estimated Annual Returns on R&D—25% to 30% —Imply A Significant Underinvestment.

❖ Similar Evidence for Brands, Human Resources.

❖ Macro Studies: Optimal R&D Investment is 3-4 Times Larger Than Actual.

❖ Total R&D  
GDP            1960            2000  
                  2%                2%

❖ Industrial Research Institute: During 1993-2003, The Allocation of Funds to “Directed Basic Research” Declined Every Year.

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**Remedies I: Improve Information Environment  
Issues with Current Reporting**

- ❖ The myth of expensing intangibles as conservative accounting: Mismeasurements of Assets and Income of Intangibles-Intensive Enterprises.
- ❖ Software Capitalization: IBM-Yes; Microsoft-No.
- ❖ Asymmetric Accounting: Expense Internally-Generated Intangibles, Capitalize Acquired Intangibles. (Arms-Length Transaction?).

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**Continued:**

- ❖ Manipulation of information with In-Process R&D.
- ❖ Earnings Management with R&D Expenditures (and Other Intangibles?).
- ❖ Reporting Opaqueness: No Information on Employee Training, Brand Enhancement, Software and Technology Acquisitions, R&D Breakdowns, Innovation Revenues, etc., etc.

Key: A shift from expense to asset mentality

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The Devil's Advocate: No support for significant informational change.

Managers: Why lose informational advantage? (Aboody-Lev insider trading). Why expose embarrassments?

Analysts: Why lose competitive advantage?

But search is very expensive; free-rider problems ⇨ sub-optimal information. Moreover, what is not reported, is not measured internally.

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## A New Avenue:

- ❖ Work with Industry Groups to Develop Meaningful Information Templates:
  - ❖ Pharma, Biotech: The product pipeline.
  - ❖ Semiconductors: The book-to-bill ratio.
  - ❖ Retailers: Same-store sales.

### Wish List:

- ❖ Innovation revenues (% revenues from recent products).
- ❖ R&D productivity.
- ❖ R&D breakdowns (basic, development...)
- ❖ Information on collaborative research efforts.

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## An Aside: Intellectual Capital Reporting: A Questionable Idea

Sounds nice, but not standardized, not linked to future performance, and mostly self-serving (inconsistent).

### Examples:

- ❖ Employee satisfaction.
- ❖ % women, minorities employed.
- ❖ "Our market-to-book ratio"
- ❖ "Economic income."

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## Remedies II: Foster Markets in Intangibles

- ❖ Strengthen and broaden IP rights.
- ❖ Fight vigorously infringement.
- ❖ Encourage markets in IP, like the early 1980s' market in mortgage-based securities.
- ❖ Study performance of Internet-based IP markets (e.g., yet2.com)

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