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The Effects of Recent Accounting Changes for In-process Research and Development

EXECUTIVE SUMMARY

The newly-revised SFAS No. 141 (R), *Business Combinations*, offers some important changes in accounting for in-process research and development (IPR&D). Long expensed at the time of acquisition, IPR&D will henceforth be capitalized and subsequently amortized, though abandoned projects will be written off. The expectation is that earnings in years following an acquisition will be lower, though the impact is entirely dependent on whether new acquisitions result in additional amounts of capitalized IPR&D and the amortization period for previously-capitalized amounts. In this study we look at the significance of IPR&D over the period 1998 through 2006 relative to selected measures, including net sales and total assets, for a large cross-section of firms and within five technology industries. We then recast pretax income in 2006 for our sample and for fifteen firms from the five industries assuming IPR&D incurred over the 2003 – 2005 time period had been capitalized and subsequently amortized.

Across our sample period we find that the median firm that incurs IPR&D spends about 1.47% of sales and .91% of assets on those acquired projects. The effects, however, in certain industries and at selected companies were much greater. We also find that pretax income in 2006 is reduced by approximately 1.12% if IPR&D were capitalized and amortized over a five-year period. What is unclear is the extent to which companies may need to take charges for IPR&D projects abandoned in the future. Analysts and investors will want to be prepared for all of these changes as they begin to review financial statements for technology firms in 2009 and beyond.

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Georgia Tech Financial Analysis Lab

The Georgia Tech Financial Analysis Lab conducts unbiased research on issues of financial reporting and analysis. Unbiased information is vital to effective investment decision-making. Accordingly, we think that independent research organizations, such as our own, have an important role to play in providing information to market participants.

Because our Lab is housed within a university, all of our research reports have an educational quality, as they are designed to impart knowledge and understanding to those who read them. Our focus is on issues that we believe will be of interest to a large segment of stock market participants. Depending on the issue, we may focus our attention on individual companies, groups of companies, or on large segments of the market at large.

A recurring theme in our work is the identification of reporting practices that give investors a misleading signal, whether positive or negative, of corporate earning power. We define earning power as the ability to generate a sustainable stream of earnings that is backed by cash flow. Accordingly, our research may look into reporting practices that affect either earnings or cash flow, or both. At times, our research may look at stock prices generally, though from a fundamental and not technical point of view.

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The Effects of Recent Accounting Changes for
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Companies Included in this Research Report

1. Introduction

In-process research and development (IPR&D) can be defined as the fair value assigned to acquired, though incomplete R&D projects that are typically purchased in a business combination. Historically, General Accepted Accounting Principles (GAAP) for IPR&D, "required an acquirer to measure and immediately expense tangible and intangible assets to be used in research and development that had no alternative future use. A research and development asset was recognized as such only if it had an alternative future use [which typically, in the judgment of management, was never]."[1] The newly revised SFAS No. 141(Revised 2007), effective in 2009, requires "research and development assets acquired in a business combination to be recognized regardless of whether they have an alternative future use."[2]

The accounting for IPR&D has a storied past. Eager to charge off as much of the cost of acquisitions as possible, companies have historically taken significant IPR&D charges. It was the perfect place to record acquisition costs, permitting firms to avoid future earnings charges as well as the negative stigma of goodwill. In the late 1990s, at the behest of the Securities and Exchange Commission (SEC), we witnessed numerous restatements where companies were required to reduce the amount of IPR&D expenses recorded and increase goodwill. For example, contributing to a $193.1 million loss during the third quarter of 1998, Network Associates recorded $219.2 million in IPR&D out of a total acquisition cost of $284.6 million. With restatement, the company reduced IPR&D expenses by $192.1 million and reported third-quarter net income that year of $36.5 million.[3]

While restatements associated with overstated IPR&D have declined in recent years, IPR&D arising from acquisitions remains a significant expense, especially for technology firms. Moreover, because under current GAAP IPR&D is expensed immediately, future earnings have not been weighed down through the amortization of capitalized intangible assets.

SFAS No. 141(R) will change everything. Rather than expensing IPR&D, it will now be capitalized. More specifically, IPR&D "shall be considered indefinite lived until the completion or abandonment of the associated research and development efforts. During the period those assets are considered indefinite lived they shall not be amortized but shall be tested for impairment"[4]. Once the IPR&D project is completed, amortization begins. If the project is abandoned, the capitalized costs are written off.

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[1] SFAS No.141(R), *Business Combinations*, (Norwalk, CT: Financial Accounting Standards Board, December 2007), page 130, par. B149.

[2] SFAS No.141(R), *Business Combinations*, (Norwalk, CT: Financial Accounting Standards Board, December 2007), p. 130, para. B150.

[3] Banyi, Monica L., "An Evaluation of the Causes and Consequences of In-Process Research and Development Restatements*" (January 2006). AAA 2006 Financial Accounting and Reporting Section (FARS) Meeting Paper Available at SSRN: http://ssrn.com/abstract=817507.

[4] SFAS No.141(R), *Business Combinations*, (Norwalk, CT: Financial Accounting Standards Board, December 2007), p. 261, para. h.

Thus, as a result of the new standard, net income, along with total assets and stockholders' equity, are expected to increase in the current period, while future income will be lower due to the amortization of capitalized IPR&D. Measures of profitability will be impacted accordingly.

In this study we seek to determine how the new standard will impact reported financial results and position. We look at recorded amounts of IPR&D for the years 1998 through 2006 for a representative sample of all firms and for five technology industries: pharmaceuticals and medicine, computers and electronic products, medical equipment and supplies manufacturing, software, and computer systems design and related services. For these firms we look at the significance of IPR&D and examine how capitalization and subsequent amortization will alter pretax income.

2. The Financial Statement Effects of IPR&D

The database we use is COMPUSTAT North America for 1998 through 2006. These nine years include a flurry of M&A activities and also allow us to examine the immediate reclassification of IPR&D to goodwill after the SEC scrutinized IPR&D expensing in 1998. We identify three areas that would be affected by IPR&D capitalization: total assets and total stockholders' equity on the balance sheet, and pretax income on the income statement. Because there is no cash involved in capitalization or amortization, cash flow from operations is not affected. Our database includes companies with securities registered and traded in North America that reported IPR&D in at least one of the years 1998 – 2006 and for which data items were available for goodwill, total assets and stockholders' equity.

To measure the magnitude of IPR&D and its possible impact on the balance sheet and the income statement, we use IPR&D as a percentage of total assets (IPR&D/Total Assets), goodwill (IPR&D/Goodwill), total stockholders' equity (IPR&D/Total Equity), and net sales (IPR&D/Net Sales. We categorize all companies for each year into different industries according to the North American Industry Classification System (NAICS) and identify five technology industries for further study. These five industries are pharmaceuticals and medicine, computers and electronic products, medical equipment and supplies, software, and computer systems design and related services. Our results are reported for the entire sample (all industries) and for each of the five identified technology groups.

2.1 All Industries

Table 1. IPR&D as A Percentage of Goodwill, Net Sales, Total Assets and Total Equity – All Industries.

Year	Total Firms	IPR&D/Goodwill		IPR&D/Net Sales		IPR&D/Total Assets		IPR&D/Total Equity	
		Median	Mean	Median	Mean	Median	Mean	Median	Mean
1998	45	17.52%	109.75%	2.76%	5.96%	1.89%	3.60%	4.67%	9.00%
1999	29	10.62%	25.80%	1.41%	9.21%	1.05%	3.96%	1.93%	6.49%
2000	40	8.25%	55.10%	2.34%	492.83%	1.43%	4.65%	2.06%	28.57%
2001	79	10.58%	40.30%	1.99%	31.21%	1.04%	3.87%	1.93%	6.81%
2002	126	5.35%	151.38%	1.06%	51.34%	0.69%	3.10%	1.09%	5.39%
2003	123	3.05%	77.55%	0.67%	4.60%	0.41%	1.51%	0.75%	3.12%
2004	168	5.07%	46.45%	1.30%	15.97%	0.73%	3.44%	1.08%	1.50%
2005	153	3.10%	71.62%	0.78%	11.10%	0.46%	3.40%	0.73%	9.13%
2006	160	3.42%	58.88%	0.88%	5.19%	0.51%	2.43%	0.74%	4.54%
Average	-	7.44%	70.76%	1.47%	69.71%	0.91%	3.33%	1.66%	8.28%

Source: COMPUSTAT North America; Georgia Tech Financial Analysis Lab calculations.

As seen in Table 1, the number of companies that reported IPR&D charges declined in 1999 after the SEC's increased its scrutiny of the expenses in 1998. It increased again in 2000 and grew to to 160 in 2006.

As a percentage of net sales over the sample period, the median firm averaged 1.47% in IPR&D expenses. This is not a particularly noteworthy figure, however, it is important to keep in mind that without charges for IPR&D, pretax net margin at these firms would have been higher by the same amount. Note that the mean measure of IPR&D to net sales, averaging 69.71%, is much higher than the median, showing the effects that outliers can have on the results. As such, the median is more representative of the sample. As a percentage of goodwill, IPR&D for the median firm averaged 7.44%. However, in recent years, the measure has been lower, indicating that firms are allocating a larger portion of total acquisition amounts to goodwill and a smaller amount to IPR&D. Over the sample period, as a percentage of total assets and of total equity, the median firm reported IPR&D that averaged .91% and 1.66%, respectively.[5]

[5]The circumstances of each transaction dictate whether IPR&D is tax deductible. As such, we have not tax effected the charges in calculating their effects on stockholders' equity.

2.2 Pharmaceuticals and Medicine

Table 2. IPR&D as A Percentage of Goodwill, Net Sales, Total Assets and Total Equity – Pharmaceuticals and Medicine (NAICS = 3254XX).

Year	Total Firms	IPR&D/Goodwill		IPR&D/Net Sales		IPR&D/Total Assets		IPR&D/Total Equity	
		Median	Mean	Median	Mean	Median	Mean	Median	Mean
1998	6	6.35%	13.72%	0.95%	1.57%	0.78%	1.08%	1.47%	2.36%
1999	4	49.95%	73.30%	3.17%	49.33%	1.90%	17.16%	3.44%	21.76%
2000	3	5.67%	69.74%	0.61%	24.07%	0.50%	6.50%	0.78%	29.61%
2001	13	27.06%	134.06%	9.73%	112.56%	2.96%	8.14%	5.02%	14.05%
2002	15	30.31%	679.49%	21.29%	66.36%	6.05%	10.06%	8.34%	14.03%
2003	18	26.68%	421.24%	7.96%	21.92%	2.68%	5.63%	4.50%	12.78%
2004	30	20.61%	146.63%	11.40%	72.17%	3.08%	11.86%	2.59%	-6.87%
2005	23	119.29%	358.44%	27.53%	32.30%	6.81%	10.82%	11.88%	29.35%
2006	26	25.16%	265.98%	8.79%	16.11%	3.75%	6.79%	5.75%	10.55%
Average	-	34.56%	240.29%	10.16%	44.04%	3.17%	8.67%	4.86%	14.18%

Source: COMPUSTAT North America; Georgia Tech Financial Analysis Lab calculations.

The results for the pharmaceuticals and medicine industry are presented in Table 2. Here IPR&D is a much more significant expense. For the median firm reporting IPR&D, over the sample period IPR&D averaged 10.16% of net sales, significantly higher than the 1.47% observed for the entire sample. IPR&D is clearly very important to these firms' research and development activities. Note also that for this group of firms, the relative proportion of IPR&D to goodwill, at 34.56% on average for the median firm, is much higher than the 7.44% observed for the overall sample. For firms in the pharmaceuticals and medicine industry, relatively more of the total acquisition price is assigned to IPR&D than for firms overall. In Table 2 we also see that for this industry, the median firm reports on average 3.17% and 4.86%, in IPR&D as a percentage of total assets and total equity, respectively. Thus, overall for firms in the pharmaceuticals and medicine industry, capitalization of IPR&D will result in significantly higher net margin (subject to amortization), higher assets and higher stockholders' equity.

In Table 3 below, we look at four companies in the pharmaceuticals and medicine industry that report particularly high amounts of IPR&D in 2006.

Table 3. Four Companies Reporting Higher Than Average IPR&D/Goodwill, IPR&D/Net Sales, IPR&D/Total Assets and IPR&D/Total Equity in 2006 – Pharmaceuticals and Medicine. Table Includes Reported Pretax Income and Pretax Income Adjusted to Include Capitalized IPR&D ($ Amounts in millions).

	IPR&D/ Goodwill	IPR&D/ Net Sales	IPR&D/ Total Assets	IPR&D/ Total Equity	Reported Pretax Income[a]	Pretax Income Adding Back IPR&D Charges[a]	Reported IPR&D
Micromet	302.01%	75.74%	40.82%	85.20%	$-33.992	$-13.102	$20.890
Supergen	2232.28%	42.85%	18.53%	24.79%	-15.912	0.406	16.318
Watson Pharmaceuticals	55.90%	25.15%	13.24%	29.62%	-410.949	86.851	497.800
Allergan	31.59%	18.91%	10.04%	18.43%	-19.900	559.400	579.300

Source: COMPUSTAT North America; Georgia Tech Financial Analysis Lab calculations.
[a]Pretax income from continuing operations.

Table 3 provides a closer look at four companies in the pharmaceuticals and medicine industry that report especially high amounts of IPR&D during 2006. Note that in this group, Micromet reports IPR&D at 75.74% of net sales, 40.82% of total assets and 85.20% of total equity – clearly a significant expense. It is interesting to note that all four companies reported a pretax loss with IPR&D included. If IPR&D were capitalized, however, three of these companies, Supergen, Watson Pharmaceuticals and Allergan, would report a pretax profit. Only Micromet would still report a loss.

2.3 Computers and Electronic Products

Table 4. IPR&D as a Percentage of Goodwill, Net Sales, Total Assets and Total Equity – Computers and Electronic Products (NAICS = 334XXX).

Year	Total Firms	IPR&D/Goodwill		IPR&D/Net Sales		IPR&D/Total Assets		IPR&D/Total Equity	
		Median	Mean	Median	Mean	Median	Mean	Median	Mean
1998	8	37.74%	333.72%	3.35%	4.72%	2.82%	4.30%	5.43%	9.17%
1999	10	17.24%	27.09%	1.56%	2.88%	1.20%	2.48%	3.14%	5.60%
2000	18	7.85%	60.70%	2.18%	823.28%	1.50%	2.17%	3.11%	3.67%
2001	32	9.06%	17.94%	1.57%	9.83%	1.01%	2.86%	1.91%	4.67%
2002	56	5.35%	75.84%	0.92%	57.09%	0.88%	2.41%	1.19%	4.18%
2003	52	3.67%	27.60%	0.89%	2.20%	0.47%	0.98%	0.81%	1.73%
2004	67	5.02%	28.23%	1.26%	3.37%	0.64%	1.66%	1.00%	2.79%
2005	65	2.26%	20.45%	0.42%	3.62%	0.28%	1.74%	0.35%	2.50%
2006	67	3.61%	16.88%	0.65%	2.46%	0.47%	1.48%	0.63%	2.19%
Average	-	10.20%	67.61%	1.42%	101.05%	1.03%	2.23%	1.95%	4.06%

Source: COMPUSTAT North America; Georgia Tech Financial Analysis Lab calculations.

In the computers and electronic products industry, firms do not rely on expenditures for IPR&D to the extent seen for companies in the pharmaceuticals and medicine industry. In the computer industry, the median firm reported IPR&D that averaged 1.42% of net sales over the sample period. As a percentage of total assets and total equity, the median firm reported IPR&D that averaged 1.03% and 1.95%, respectively. For this group of firms, capitalization of IPR&D will have a more modest effect on financial results.

In Table 5 below, we look at five companies in the computers and electronic products industry that report particularly high amounts of IPR&D.

Table 5. Five Companies Reporting Higher Than Average IPR&D/Goodwill, IPR&D/Net Sales, IPR&D/Total Assets and IPR&D/Total Equity in 2006 – Computers and Electronic Products. Table Includes Reported Pretax Income and Pretax Income Adjusted to Include Capitalized IPR&D ($ Amounts in millions).

Company Name	IPR&D/ Goodwill	IPR&D/ Net Sales	IPR&D/ Total Assets	IPR&D/ Total Equity	Reported Pretax Income[a]	Pretax Income Adding Back IPR&D Charges	Reported IPR&D
Optium	106.21%	16.10%	18.86%	31.89%	$-8.003	$3.184	$11.187
Natus Medical	38.00%	10.90%	7.89%	9.70%	3.123	12.923	9.800
Netlogic Microsystems	28.87%	11.05%	6.78%	7.51%	1.051	11.751	10.700
Iris International	211.43%	7.35%	6.97%	8.28%	2.138	7.318	5.180
PMC-Sierra	8.92%	8.31%	3.51%	6.19%	-50.655	-15.355	35.300

Source: COMPUSTAT North America; Georgia Tech Financial Analysis Lab calculations.
[a] Pretax income from continuing operations.

Table 5 provides a closer look at five companies in the computers and electronic products industry that report especially high amounts of IPR&D during 2006. Here, IPR&D as a percentage of net sales ranges as high as 16.10% of net sales, 18.86% of total assets and 31.89% of total equity. These companies are generally more profitable, even with the inclusion of IPR&D, than noted in the pharmaceuticals and medicine industry. Only one company, Optium, reports a pretax loss that is converted to a pretax profit once IPR&D is capitalized. The pretax loss at PMC-Sierra is sufficiently large that even with the capitalization of IPR&D, the company reports a loss.

2.4 Medical Equipment and Supplies Manufacturing

Table 6. IPR&D as a Percentage of Goodwill, Net Sales, Total Assets and Total Equity – Medical Equipment and Supplies Manufacturing (NAICS = 3391XX).

Year	Total Firms	IPR&D/Goodwill		IPR&D/Net Sales		IPR&D/Total Assets		IPR&D/Total Equity	
		Median	Mean	Median	Mean	Median	Mean	Median	Mean
1998	4	13.00%	27.76%	4.65%	10.20%	2.02%	5.59%	8.24%	25.35%
1999	2	10.43%	10.43%	1.41%	1.41%	1.13%	1.13%	2.12%	2.12%
2000	5	26.15%	95.14%	3.63%	15.30%	2.86%	9.05%	8.63%	12.78%
2001	6	50.68%	72.06%	6.91%	12.81%	4.92%	5.61%	9.67%	8.64%
2002	5	10.55%	30.84%	2.01%	13.60%	1.31%	3.51%	3.45%	4.90%
2003	10	2.20%	9.41%	0.66%	2.02%	0.32%	1.23%	0.42%	1.72%
2004	9	5.97%	16.69%	1.38%	7.83%	1.24%	4.13%	1.66%	5.74%
2005	11	5.09%	54.71%	3.51%	5.74%	2.57%	3.59%	3.04%	4.67%
2006	14	7.44%	28.35%	1.18%	9.71%	0.93%	3.60%	1.40%	7.64%
Average	-	14.61%	38.38%	2.82%	8.47%	1.92%	4.16%	4.29%	8.17%

Source: COMPUSTAT North America; Georgia Tech Financial Analysis Lab calculations.

The number of companies in the medical equipment and supplies manufacturing industry that reported IPR&D is quite small. However, the amount of IPR&D is significant. Among the companies reporting IPR&D, the median firm incurred IPR&D expenses that averaged 2.82% of net sales across the sample period, indicating that had these charges been capitalized instead, pretax net margin would have increased by a similar amount. As a percentage of total assets and total equity, IPR&D for the median firm averaged 1.92% and 4.29%, respectively.

In Table 7 below, we look at three companies in the medical equipment and supplies manufacturing industry that report particularly high amounts of IPR&D.

Table 7. Three Companies Reporting Higher Than Average IPR&D/Goodwill, IPR&D/Net Sales, IPR&D/Total Assets, IPR&D/Total Equity in 2006 – Medical Equipment and Supplies Manufacturing. Table Includes Reported Pretax Income and Pretax Income Adjusted to Include Capitalized IPR&D ($ Amounts in millions).

Company Name	IPR&D/ Goodwill	IPR&D/ Net Sales	IPR&D/ Total Assets	IPR&D/ Total Equity	Pretax Income [a]	Pretax Income Adding Back IPR&D Charges	Reported IPR&D
ATS Medical	282.80%	35.60%	16.78%	24.87%	$-27.674	$-13.274	$14.400
Boston Scientific	28.16%	52.67%	13.25%	26.93%	-3,535.000	584.000	4,119.000
Orthofix International	12.78%	10.95%	4.64%	10.19%	6.319	46.319	40.000

Source: COMPUSTAT North America; Georgia Tech Financial Analysis Lab calculations.
[a] Pretax income from continuing operations.

Table 7 provides a closer look at three companies in the medical equipment and supplies manufacturing industry that report especially high amounts of IPR&D during 2006. Among these companies, Boston Scientific reported IPR&D that totaled 52.67% of net sales, 13.25% of total assets and 26.93% of total equity. Note that in 2006 the company reported a pretax loss of -$3.535 billion. However, if IPR&D of $4.119 billion were capitalized, the company would have reported a pretax profit.

2.5 Software

Table 8. IPR&D as a Percentage of Goodwill, Net Sales, Total Assets and Total Equity – Software (NAICS = 5112XX).

Year	Total Firms	IPR&D/Goodwill		IPR&D/Net Sales		IPR&D/Total Assets		IPR&D/Total Equity	
		Median	Mean	Median	Mean	Median	Mean	Median	Mean
1998	6	65.63%	197.67%	11.15%	13.62%	5.78%	7.28%	9.11%	18.99%
1999	4	9.73%	14.00%	2.21%	4.51%	2.25%	2.39%	4.41%	5.20%
2000	5	3.51%	46.86%	2.61%	18.59%	1.24%	8.94%	1.62%	12.20%
2001	9	8.00%	16.19%	1.99%	26.20%	0.82%	1.60%	1.42%	2.73%
2002	23	2.65%	16.79%	0.90%	1.88%	0.42%	1.29%	0.58%	5.27%
2003	25	2.18%	7.45%	0.57%	1.00%	0.31%	0.51%	0.48%	0.87%
2004	26	3.28%	6.20%	1.06%	1.47%	0.62%	0.72%	1.05%	1.11%
2005	23	1.02%	2.98%	0.54%	7.90%	0.27%	0.55%	0.47%	0.89%
2006	23	1.64%	4.56%	0.58%	2.63%	0.39%	1.40%	0.75%	4.06%
Average	-	10.85%	34.74%	2.40%	8.64%	1.34%	2.74%	2.21%	5.70%

Source: COMPUSTAT North America; Georgia Tech Financial Analysis Lab calculations.

Over the sample period in the software industry the median firm expensed IPR&D that averaged 2.40% of net sales – higher than the overall sample, but less than that observed for pharmaceuticals and medicine and medical equipment and supplies manufacturing. In the software industry, the median firm expensed IPR&D that averaged 1.34% and 2.21% of total assets and total equity, respectively.

In Table 9 below, we look at three companies in the software industry that report particularly high amounts of IPR&D.

Table 9. Three Companies Reporting Higher Than Average IPR&D/Goodwill, IPR&D/Net Sales, IPR&D/Total Assets, IPR&D/Total Equity in 2006 – Software. Table Includes Reported Pretax Income and Pretax Income Adjusted to Include Capitalized IPR&D ($ Amounts in millions).

Company Name	IPR&D/ Goodwill	IPR&D/ Net Sales	IPR&D/ Total Assets	IPR&D/ Total Equity	Pretax Income [a]	Pretax Income Adding Back IPR&D Charges	Reported IPR&D
Unica	20.08%	4.90%	3.86%	7.39%	0.713	$4.750	$4.037
Ansys	6.55%	10.66%	3.20%	5.25%	33.061	61.161	28.100
Nextwave Wireless	10.99%	14.57%	0.39%	0.75%	-105.055	-101.517	3.538

Source: COMPUSTAT North America; Georgia Tech Financial Analysis Lab calculations.
[a] Pretax income from continuing operations.

Table 9 provides a closer look at three companies in the software industry that report especially high amounts of IPR&D during 2006. Among these companies, Nextwave Wireless reported IPR&D that totaled 14.57% of net sales, though only .39% of total assets and .75% of total equity. Among the three highlighted firms, Nextwave was the only company that reported a pretax loss, even with the capitalization of IPR&D.

2.6 Computer Systems Design and Related Services

Table 10. IPR&D as a Percentage of Goodwill, Net Sales, Total Assets and Total Equity – Computer Systems Design and Related Services (NAICS = 5415XX).

Year	Total Firms	IPR&D/Goodwill		IPR&D/Net Sales		IPR&D/Total Assets		IPR&D/Total Equity	
		Median	Mean	Median	Mean	Median	Mean	Median	Mean
1998	4	25.64%	32.21%	5.77%	9.35%	3.05%	5.35%	6.75%	8.17%
1999	1	10.62%	10.62%	0.13%	0.13%	0.13%	0.13%	0.54%	0.54%
2000	2	4.87%	4.87%	3.30%	3.30%	1.15%	1.15%	1.55%	1.55%
2001	2	13.74%	13.74%	24.83%	24.83%	2.18%	2.18%	2.70%	2.70%
2002	8	1.83%	4.29%	0.49%	2.32%	0.36%	1.14%	0.47%	1.87%
2003	6	1.30%	1.41%	0.53%	0.65%	0.15%	0.26%	0.30%	0.39%
2004	5	1.97%	2.37%	1.08%	.94%	0.15%	0.38%	0.22%	0.68%
2005	13	2.17%	26.27%	0.70%	5.78%	0.46%	3.50%	0.70%	8.18%
2006	9	0.60%	0.94%	0.31%	0.70%	0.22%	0.27%	0.29%	0.39%
Average	-	6.97%	10.75%	4.13%	5.33%	0.87%	1.60%	1.50%	2.72%

Source: COMPUSTAT North America; Georgia Tech Financial Analysis Lab calculations.

The last industry we examine is the computer systems design and related services industry. This industry is the smallest one in our sample. As a percentage of net sales, the median firm reported IPR&D of 4.13% over the sample period. The ratios of IPR&D to total assets and total equity for the median firm were .87% and 1.50%, respectively. Unlike the observations made in the other four industries, we did not find a single company in the computer systems design and related services industry that reported uniquely higher IPR&D-related ratios in 2006. As such, for this group we do not provide a table that focuses on outlier firms.

3. Amortizing Capitalized IPR&D

3.1 Capitalization Followed by Amortization

Companies have preferred assigning a larger portion of the cost of an acquisition to IPR&D because historically it has enabled them to charge off a large portion of the acquisition cost in the year of acquisition. As such, they could encourage analysts to discount the charge as a nonrecurring item even while they touted the future earnings prospects provided by the technology arising from the purchased R&D. Moreover, future earnings would not be weighed down with amortization of capitalized intangible assets, meaning that more acquisitions would be immediately accretive to earnings. Further, because of the charge off of IPR&D, total assets and total stockholders' equity are lower, boosting measures of efficiency, such as asset turnover and measures of profitability, such as return on equity.

As a result of Statement 141(R), companies will no longer be able to charge off IPR&D. It must now be capitalized and amortized over some assumed amortization period. As we have pointed out, due to the new Statement, acquisition-year earnings will be higher as will balance sheet measures of total assets and total equity. Future earnings will be lower. What is unclear, however, is the extent to which future earnings may be lowered through amortization. The shorter the amortization period, the higher the amortization drag on earnings.

The purpose of this section is to gather data on the effects of capitalization and subsequent amortization of IPR&D on pretax income. Depending on the structure of an acquisition transaction, IPR&D may or may not be tax deductible. As such, we focus on the effects of capitalization and subsequent amortization of IPR&D on pretax income.

In computing the effects of capitalization and subsequent amortization of IPR&D, we assume that IPR&D is capitalized and accumulated over a three-year period (2003 – 2005). That is, we assume that projects that are in process during 2003 – 2005 are completed in 2005 and that amortization begins in 2006. The companies included in the analysis reported IPR&D in at least one of the years, 2003 – 2005. In calculating amortization, we use a short amortization period of five years and a longer one of twenty years that is consistent with the legal length of a patent. Accordingly, in our calculations we increase reported pretax income in 2006 for any IPR&D incurred that is assumed to be capitalized that year and we reduce that sum for the assumed amortization of IPR&D capitalized over the 2003 – 2005 time frame. Our objective is to measure the extent to which reported pretax income in 2006 is altered by the assumed capitalization and amortization of IPR&D. We examine the results on our overall sample and for each of our five industry subgroups. We also look at the effects on pretax income in 2006 for 15 companies from our five industry subgroups that reported IPR&D and were profitable in each year, 2003 – 2005 after adding back IPR&D. The findings are presented in Tables 11 and 12.

In Table 11 we see that with a 5-year amortization period, the median decrease in 2006 pretax income as a result of capitalization and amortization of IPR&D is 1.12%. We see declines in pretax income of as high as 4.18% in the pharmaceuticals and medicine industry and the computers and electronic products industries, and as little as .39% in the computer systems design and related services industry. Extending the amortization period to 20 years lowers the median decline in 2006 pretax income for the entire sample to .24%.

Table 11. Median Percentage Change in 2006 Reported Pretax Income Resulting from Capitalization and Amortization of IPR&D

Industry	Revised Pretax Income: 5-Year Amortization	Revised Pretax Income: 20-Year Amortization
All	-1.12%	-.24%
Pharmaceuticals and Medicine	-4.18%	-.91%
Computers and Electronic Products	-4.18%	-.91%
Medical Equipment and Supplies	-1.21%	-.23%
Software	-.40%	1.76%
Computer Systems Design and Related Services	-.39%	-.08%

Source: COMPUSTAT North America; Georgia Tech Financial Analysis Lab calculations.
Revised pretax income is calculated by adding 2006 IPR&D to reported 2006 pretax income and deducting amortization of IPR&D accumulated over the period 2003 – 2005 assuming a five-year and 20-year amortization period, respectively.

In Table 12 we present the results of capitalization and subsequent amortization of IPR&D for 15 companies in the five industries. What we note is that even with a relatively short amortization period of five years, ten of the fifteen companies presented in the Table actually see increases in pretax income as a result of the changes afforded by SFAS No. 141(R). For example, at Abbott Laboratories, because of significant IPR&D incurred in 2006, pretax income that year increases by 84.99% even assuming a five-year amortization period. The increases in pretax income at the other firms are not as dramatic, with Integra Lifesciences showing a 11.21% increase and the others falling in the single digits. The companies showing declines in 2006 pretax income incurred little or no IPR&D in 2006. Using a five-year amortization period we see declines in pretax income of 12.55%, 9.26%, and 8.20%, respectively, at Edwards Lifesciences, Symantec, and Electronics for Imaging. One other observation – the amount of IPR&D accumulated over the 2003 – 2005 time period, reported in the Table, is a measure of the maximum charge that these firms would have to take in the future for projects acquired during the period studied and later abandoned. Because they involve cumulative IR&D, if the projects are abandoned, the potential charges could be substantial.

Table 12. Percentage Change in 2006 Reported Pretax Income Resulting from Capitalization Amortization of IPR&D for Selected Companies

Company/Industry	2006 Reported Pretax Income	2006 IPR&D	Cumulative 2003 - 2005 IPR&D	Revised Pretax Income with 5-Year Amortiz.	% Change in Adj. Pretax Income	Revised Pretax Income with 20-Year Amortiz.	% Change in Adj. Pretax Income
Phamaceuticals and Medicine:							
Abbott Laboratories	$2,276.370	$2,014.000	396.377	4,211.095	+84.99%	4,270.551	+87.60%
Genzyme	-52.678	552.900	441.720	411.878	+--[a]	478.136	+--[a]
Johnson & Johnson	14,587.000	559.000	1,298.000	14,886.400	+2.05%	15,081.100	+3.39%
Pfizer	13,016.0000	835.000	7,775.000	12,296.000	-5.53%	13,462.250	+3.43%
Computers and Electronic Products:							
Cisco Systems	7,633.000	91.000	33.000	7,717.400	+1.11%	7,722.250	+1.17%
Electronics for Imaging	41.531	8.500	59.520	38.127	-8.20%	47.055	+13.30%
EMC	1,390.018	35.410	63.940	1,412.640	+1.63%	1,422.231	+2.32%
Hewlett-Packard	7,191.000	52.000	40.000	7,235.000	+.61%	7,241.000	+.70%
Motorola	4,610.000	33.000	68.000	4,629.400	+.42%	4,639.600	+.64%
Xilinx	431.146	0.000	18.667	427.413	-.87%	430.213	-.22%
Medical Equipment and Supplies:							
Boston Scientific	-3,535.000	4,119.000	378.000	508.400	+--[a]	565.100	+--[a]
Edwards Lifesciences	172.300	0.000	108.100	150.680	-12.55%	166.895	-3.14%
Integra Lifesciences	48.308	5.875	2.300	53.723	+11.21%	54.068	+11.92%
Software:							
Symantec	631.622	0.000	292.290	573.164	-9.26%	617.008	-2.31%
Computers Systems Design and Related Services:							
Mentor Graphics	37.908	2.440	10.250	38.298	+1.03%	39.836	+5.09%

Source: COMPUSTAT North America; Georgia Tech Financial Analysis Lab calculations.

Revised pretax income is calculated by adding 2006 IPR&D to reported 2006 pretax income and deducting amortization of IPR&D accumulated over the 2003 – 2005 period assuming a five-year and 20-year amortization period, respectively.

[a]The percent increase in adjusted pretax income cannot be calculated because reported pretax income is a negative amount.

4. Conclusion

Beginning in 2009, acquired in-process research and development (IPR&D) will no longer be expensed, but will be capitalized and amortized. Abandoned projects will be written off. The general expectation is that earnings in years following an acquisition will be lower, though the effects are entirely dependent on the amounts of IPR&D capitalized and the subsequent amortization period.

In an effort to gain some insight into the possible effects of this change in accounting for IPR&D, we first collected data on the significance of IPR&D. For all companies in the Compustat North America database, we calculate IPR&D as a percentage of key financial statement measures, including net sales and total assets across the period 1998 – 2006. Overall, across our sample period, for the median firm, IPR&D averaged 1.47% of net sales – a significant amount indicating that in the absence of amortization, net margins for firms incurring IPR&D would improve by a similar amount. As a percentage of total assets, for the median firm, IPR&D averaged .91% of total assets. Depending on the industry, however, the amounts of IPR&D incurred were quite substantial. For example, among firms in the pharmaceuticals and medicine industry, the median firm with IPR&D incurred 10.16% of net sales on in-process research and development. Among computer systems design and related services firms, the median firm incurred 4.13% of net sales on IPR&D.

It is difficult to gauge the earnings impact of capitalization and subsequent amortization of in-process IPR&D, as capitalization raises earnings while amortization lowers them. Moreover, amortization increases as amortization periods decline. To gather some insight on the potential earnings impact of the new accounting policy, we assumed a three-year capitalization period (2003 – 2005) and that amortization began the following year in 2006. Applying a five-year amortization period to the capitalized IPR&D, we found that pretax income for our sample firms declined by 1.12% in 2006. The decline in pretax income was .24% when a twenty-year amortization period was employed. These are not particularly material amounts. What we did find was that, amortization notwithstanding, many companies will actually enjoy increases in earnings with the change in accounting policy as newly-capitalized IPR&D exceeds future amortization amounts. For example, in 2006, Abbott Laboratories would see pretax income increase by 84.99%, even after subtracting amortization of IPR&D capitalized over the 2003 – 2005 timeframe. One important caveat – capitalized IPR&D must be written off for projects that are later abandoned. Because the related charges will entail accumulated IPR&D amounts, they could be quite substantial. Investors may not look favorably upon charges taken for IPR&D projects that are later abandoned.

SFAS 141 (R) offers up some major changes in accounting for IPR&D. Long accustomed to significant charge-offs for acquired in-process research and development, investors and analysts will now need to prepare themselves to evaluate the earnings effects of capitalization and subsequent amortization and special charges for abandoned projects. What is clear is that the earnings effects cannot be easily anticipated. Depending on the amounts of IPR&D incurred and the amortization period, some firms will see earnings increases while others will see declines.