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CAPITALIZATION OF SOFTWARE DEVELOPMENT COSTS:
A SURVEY OF ACCOUNTING PRACTICES IN THE SOFTWARE INDUSTRY

EXECUTIVE SUMMARY

Software companies are required by SFAS No. 86 to capitalize certain development costs of software to be sold, leased or otherwise marketed. Capitalization occurs once technological feasibility has been reached and costs are determined to be recoverable. Capitalization ends and amortization begins when the product is available for general release to customers. These guidelines provide a great deal of flexibility to management in determining "technological feasibility" and amortization parameters.

Differences in management philosophy and judgment in dealing with the requirements of SFAS No. 86 can have a significant impact on both earnings and operating cash flow. In this report we examine how these differences impact reported financial performance and hurt comparability across companies in the software industry.

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Georgia Tech Financial Analysis Lab

The Georgia Tech Financial Analysis Lab conducts unbiased stock market research. 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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Capitalization of Software Development Costs – A Survey of Accounting Practices in the Software Industry. May, 2006
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CAPITALIZATION OF SOFTWARE DEVELOPMENT COSTS: A SURVEY OF ACCOUNTING PRACTICES IN THE SOFTWARE INDUSTRY

Introduction

In 1985, the Financial Accounting Standards Board issued guidelines for dealing with capitalization of software development costs. The guidelines were an attempt to standardize the way companies dealt with and reported capitalized software development assets while maintaining flexibility to allow for different internal software development methodologies. Still in effect, the guidelines require that all costs incurred prior to "technological feasibility" must be expensed as R&D. Once "technological feasibility" is reached the company is allowed to capitalize costs associated with software development up to the point of product release. Once the product is released, capitalized costs are then amortized in much the same way a piece of heavy equipment would be.

Reporting guidelines notwithstanding, an issue arises when attempting to compare financial results across the software industry due to differences in the way companies interpret "technological feasibility" as well as carry out their software development processes. These differences show up in the rate at which companies capitalize software development costs, the impact that capitalized software development costs have on the cash flow statement and the effect that capitalized software asset write-downs have on earnings.

The capitalization rate refers to a company's ratio of capitalized software costs to total R&D costs (software costs expensed + software costs capitalized). Capitalization rates are important because they determine the amount of software development costs that a company shifts from an expense in the current period to an asset that is amortized over time. Since most companies that capitalize software development costs report such expenditures as an investing use of cash, capitalization has the effect of boosting operating cash flow. Even in a "steady state," where the amortization of previously capitalized software development costs are equal to new amounts capitalized such that earnings do not benefit from capitalization, operating cash flow is boosted through the shift of capitalized software costs to the investing section of the statement of cash flows. Given the importance of operating cash flow to assessments of financial performance and valuation, capitalization of software development costs can thus shed a more favorable light on a company's financial performance.

Moreover, there is an additional down side to software capitalization – write-downs. If a company were too optimistic on the fair value or useful life of its software, it can be left with an asset on its books that is value impaired, necessitating a write-down. Write-downs that are large can create earnings surprises by shifting amortization expense that was expected to occur in future periods to the current one.

The purpose of this study is to survey accounting practices in the software industry. In particular, our interest is in examining capitalization practices to determine the extent to which software costs are being capitalized. In addition, cash flow classification continues to be a focus for the Georgia Tech Financial Analysis Lab. As such, a separate objective of the study is in measuring the extent to which operating cash flow is being boosted through the shift of software costs to the investing section of the statement of cash flows. Finally, we are interested in examining the frequency and amount of software cost write-downs.

Data and Methodology

The data used in this study came from the latest annual financial statement filings made between February 2006 and April 2006 for identifiable software companies (primarily SIC 7372). As a result, our data consisted primarily of fiscal 2005 filings. Not all software companies are included in the study. We excluded companies from the survey if we were unable to determine capitalization rates for software development from available disclosures. This generally happened when companies combined their reporting of internally developed software and purchased software and there was no reliable way to separate them.

The data included herein is believed to be correct. However, due to the number of financial statements that were reviewed, the various ways different managements choose to adhere to and report the requirements of FASB Statement No. 86 and the fallibility of the human condition; there is the chance that errors have been made. While a particular error may affect the outlook for a single company, we do not believe it would be material to the overall conclusions reached in this study.

FASB Statement No. 86

Statement No. 86, *Accounting for the Costs of Computer Software to be Sold, Leased, or Otherwise Marketed,* was issued by the Financial Accounting Standards Board (FASB) in 1985. According to the FASB, the Statement was issued,

> "…in response to requests by the Securities and Exchange Commission (SEC) and the Accounting Standards Executive Committee (AcSEC) of the American Institute of Certified Public Accountants (AICPA) to clarify the accounting for the costs of internally developed and produced computer software to be sold, leased, or otherwise marketed. They indicated that existing accounting pronouncements contain only general guidance that has been interpreted inconsistently." [1]

The Statement, which can be viewed in its entirety at http://www.fasb.org/pdf/fas86.pdf, is concerned with both internally developed as well as purchased software to be sold. This study focuses only on the accounting of costs related to internally developed software to be sold, leased or otherwise marketed.

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[1] Financial Accounting Standards Board, SFAS No. 86, *Accounting for the Costs of Computer Software to Be Sold, Leased, or Otherwise Marketed*, (Norwalk, CT: FASB, August 1985), p. 4.

FASB Statement No. 86 breaks spending on software development into the following three stages:

> ➢ Research & Development costs
> ➢ Software development costs once technological feasibility is established
> ➢ Costs incurred once the product is available for general sale to customers

Costs incurred in the first and third stages are expensed as incurred. Costs in the second stage are capitalized. The three stages of software development are presented in Figure 1.

Figure 1: FASB No. 86, Three Stages of Software Development Costs
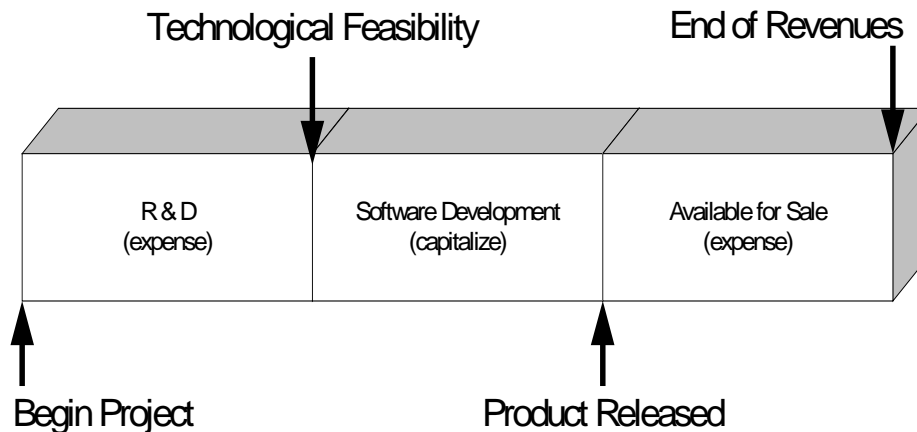
Research & Development (R&D) costs are defined as those costs that occur prior to the software product reaching technological feasibility. FASB Statement No. 86 requires these costs to be expensed as incurred according to FASB statement No. 2, *Accounting for Research and Development Costs.*

Once technological feasibility has been reached – but before general release to customers – all costs associated with bringing the product to market are eligible for capitalization. According to FASB statement No. 86, technological feasibility

> *"... is established when the enterprise has completed all planning, designing, coding, and testing activities that are necessary to establish that the product can be produced to meet its design specifications including functions, features, and technical performance requirements."* [2]

The statement goes on to establish minimum criteria for capitalization under two scenarios. The first concerns projects that include a detailed program design. Costs related to these projects are eligible for capitalization when a detailed program design is complete, the detailed design has been verified to be consistent with the product design and the design has been reviewed for high-

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[2] Financial Accounting Standards Board, SFAS No. 86, *Accounting for the Costs of Computer Software to Be Sold, Leased, or Otherwise Marketed*, (Norwalk, CT: FASB, August 1985), p. 5.

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risk development issues. With a detailed program design, capitalization could begin rather early in a particular software project's development life. The second scenario covers projects that do not include a detailed program design. For these projects the statement requires a product design, a working model and testing to ensure the working model is consistent with the product design. In the absence of a detailed program design, capitalization is postponed potentially until rather late in the project's life – to a time when there is a working model and testing has been completed to ensure that the model is consistent with the product's overall design.

Once a product is made available for general purchase by customers, costs are then expensed and amortization of the capitalized costs from the previous stage begins. Amortization is calculated using the greater of (a) the ratio of current revenues to total revenues or (b) the straight-line method over the estimated remaining life of the product.

Capitalization Practices for Software Development Costs

In complying with FASB Statement No. 86, management must make an important judgment concerning technological feasibility of its software products. This decision affects at what point the company will begin to capitalize its software development costs, if at all. While the relevant accounting rule may seem clear to those not familiar with software development processes, there is a great deal of discretion and flexibility in capitalization practices, yielding similar discretion over pretax earnings. Consider the following, ". . . if a company wishes to capitalize, it draws up a detailed program design quickly. If it wants to expense lots of development costs, it simply holds off writing a detailed program design."[3] Whether such discretion shows up as significant variability in the rate of software cost capitalization is an open question and one we seek to answer.

In addition to management judgment concerning FASB Statement No. 86, different software development methodologies can result in far different capitalization rates. For example, a company that uses a highly structured software development process might capitalize more of its software development costs than would a company using rapid prototyping techniques. This is because structured development approaches often separate product requirements and program design from program development, whereas coding and design often occur simultaneously with newer development techniques such as rapid prototyping. Under the former scenario all of the software development costs are eligible for capitalization. None of it is eligible for capitalization under the latter scenario.

Table 1 shows the percentage of software development costs capitalized by the 207 software companies in our survey. Of the 207 firms surveyed, 146 companies did not capitalize any of their software development costs. In substance, these companies maintain that the time period between technological feasibility and completion of software development is short and costs incurred during this period are insignificant. Of the 61 companies capitalizing software, the average rate of capitalization is 20%. Twenty-one of the 61 companies capitalizing software have

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[3] Kieso, D., et. al, Intermediate Accounting, 12th ed., (Hoboken, NJ: John Wiley & Sons, 2007), p. 599.

a rate of capitalization above 20%. The largest rate of software capitalization is 82% (Private Business, Inc.) and the largest dollar amount of software capitalized is $93 million (THQ, Inc.).

Table 1. Software Capitalization Rates (dollars in 000s)

Company	Software Development			% Capitalized
	Incurred	Capitalized	Expensed	
3d Systems Corp	$12,774	$598	$12,176	5%
724 SOLUTIONS INC	$6,271	$0	$6,271	0%
A D A M INC	$1,911	$455	$1,456	24%
ACCELRYS INC	$22,706	$4,382	$18,324	19%
ACTIVCARD	$17,534	$0	$17,534	0%
ADOBE SYSTEMS INC	$311,296	$0	$311,296	0%
ADSTAR INC	$918	$17	$901	2%
ADVENT SOFTWARE INC	$32,260	$0	$32,260	0%
AGILE SOFTWARE CORP	$23,884	$0	$23,884	0%
ALTIRIS INC	$31,414	$0	$31,414	0%
AMDOCS LTD	$144,457	$0	$144,457	0%
AMERICAN SOFTWARE -CL A	$7,698	$2,750	$4,948	36%
ANSOFT CORP	$16,901	$0	$16,901	0%
ANSWERS CORP	$2,367	$22	$2,345	1%
ANSYS INC	$30,958	$270	$30,688	1%
APPLIX INC	$4,785	$0	$4,785	0%
ARIBA INC	$47,212	$0	$47,212	0%
ART TECHNOLOGY GROUP INC	$16,209	$0	$16,209	0%
ASIAINFO HOLDINGS INC	$8,907	$0	$8,907	0%
ASPEN TECHNOLOGY INC	$55,781	$8,545	$47,236	15%
ASTEA INTERNATIONAL INC	$4,058	$1,555	$2,503	38%
ATARI INC	$65,944	$0	$65,944	0%
ATTUNITY LTD	$4,086	$1,415	$2,671	35%
AUTODESK INC	$301,600	$0	$301,600	0%
AXS-ONE INC	$7,846	$18	$7,828	0%
BEA SYSTEMS INC	$146,559	$0	$146,559	0%
BITSTREAM INC -CL A	$3,847	$0	$3,847	0%
BLACKBOARD INC	$14,543	$598	$13,945	4%
BLUEPHOENIX SOLUTIONS LTD	$16,123	$8,117	$8,006	50%
BMC SOFTWARE INC	$284,200	$61,700	$222,500	22%
BORLAND SOFTWARE CORP	$68,093	$0	$68,093	0%
BOTTOMLINE TECHNOLOGIES INC	$9,419	$0	$9,419	0%
BRAODVISIONN INC	$18,024	$0	$18,024	0%
BSQUARE CORP	$855	$0	$855	0%
Business Objects, SA	$150,562	$0	$150,562	0%
CADENCE DESIGN SYSTEMS INC	$351,254	$0	$351,254	0%
CAPTARIS INC	$10,299	$0	$10,299	0%
CARREKER CORP	$10,393	$776	$9,617	7%
CATAPULT COMMUNICATIONS CORP	$12,445	$0	$12,445	0%
CCC INFORMATION SVCS GRP INC	$30,164	$0	$30,164	0%
CDC CORP	$16,643	$2,818	$13,825	17%
CENTRA SOFTWARE INC	$10,029	$0	$10,029	0%
CHECK POINT SOFTWARE TECHN	$43,186	$0	$43,186	0%
CHORDIANT SOFTWARE INC	$21,631	$2,226	$19,405	10%
CIMATRON LTD	$5,554	$0	$5,554	0%
CITRIX SYSTEMS INC	$86,357	$0	$86,357	0%
CLICK COMMERCE INC	$2,913	$0	$2,913	0%
CLICKSOFTWARE TECHNOLOGIES	$3,069	$0	$3,069	0%
COGNOS INC	$105,938	$0	$105,938	0%
COMPUTER ASSOCIATES INTL INC	$760,000	$70,000	$690,000	9%

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Table 1. Software Capitalization Rates (dollars in 000s)

| Company | Software Development | | | % |
	Incurred	Capitalized	Expensed	Capitalized
COMPUWARE CORP	$172,685	$19,299	$153,386	11%
CONCUR TECHNOLOGIES INC	$9,336	$0	$9,336	0%
CONVERA CORP	$13,801	$0	$13,801	0%
CORILLIAN CORP	$6,690	$0	$6,690	0%
DATATRAK INTERNATIONAL INC	$1,142	$0	$1,142	0%
DATAWATCH CORP	$2,074	$43	$2,031	2%
DENDRITE INTERNATIONAL INC	$10,958	$4,864	$6,094	44%
DESCARTES SYSTEMS GROUP INC	$10,419	$0	$10,419	0%
DIGIMARC CORP	$7,229	$0	$7,229	0%
DOCUCORP INTERNATIONAL INC	$13,786	$5,231	$8,555	38%
DOCUMENT SCIENCES CORP	$5,420	$0	$5,420	0%
EBIX INC	$3,016	$0	$3,016	0%
ELECTRONIC ARTS INC	$633,000	$0	$633,000	0%
ELRON ELECTRONIC INDS LTD	$3,637	$0	$3,637	0%
EMAGEON INC	$11,051	$354	$10,697	3%
ENTRUST INC	$16,439	$0	$16,439	0%
EPICOR SOFTWARE CORP	$24,736	$0	$24,736	0%
ERESEARCHTECHNOLOGY INC	$4,090	$0	$4,090	0%
FALCONSTOR SOFTWARE INC	$9,050	$0	$9,050	0%
FILENET CORP	$78,248	$0	$78,248	0%
FIRSTWAVE TECHNOLOGIES INC	$631	$0	$631	0%
GSE SYSTEMS INC	$758	$483	$275	64%
HUMMINGBIRD LTD	$46,392	$0	$46,392	0%
HYPERION SOLUTIONS CORP	$109,908	$5,800	$104,108	5%
HYPERSPACE COMMUNICATIONS INC	$618	$0	$618	0%
I2 TECHNOLOGIES INC	$70,660	$0	$70,660	0%
IMAGEWARE SYSTEMS INC	$2,575	$0	$2,575	0%
I-MANY INC	$11,874	$0	$11,874	0%
INDUS INTERNATIONAL INC	$32,256	$300	$31,956	1%
INFORMATICA CORP	$42,585	$0	$42,585	0%
INSIGHTFUL CORP	$5,240	$0	$5,240	0%
INSIGNIA SOLUTIONS PLC	$2,807	$0	$2,807	0%
INTELLI CHECK INC	$1,176	$0	$1,176	0%
INTELLIGENT SYSTEM CP	$7,630	$0	$7,630	0%
INTELLISYNC CORP	$14,604	$0	$14,604	0%
INTERACTIVE INTELLIGENCE INC	$12,858	$0	$12,858	0%
INTERGRAPH CORP	$70,057	$10,395	$59,662	15%
INTERNET SECURITY SYS INC	$45,177	$0	$45,177	0%
INTERVIDEO INC	$10,002	$0	$10,002	0%
INTERWOVEN INC	$30,825	$0	$30,825	0%
INTRUSION INC	$2,549	$0	$2,549	0%
INTUIT INC	$30,241	$0	$30,241	0%
JACADA LTD	$5,278	$0	$5,278	0%
JDA SOFTWARE GROUP INC	$52,800	$0	$52,800	0%
KINTERA INC	$15,996	$1,137	$14,859	7%
KRONOS INC	$64,512	$13,853	$50,659	21%
LAWSON SOFTWARE INC	$62,158	$0	$62,158	0%
LIONBRIDGE TECHNOLOGIES INC	$392	$0	$392	0%
LIVEPERSON INC	$2,000	$0	$2,000	0%
LOGICVISION INC	$5,111	$0	$5,111	0%
LOGILITY INC	$5,920	$2,750	$3,170	46%
MAGIC SOFTWARE ENTERPRISES	$7,642	$3,909	$3,733	51%
MAGMA DESIGN AUTOMATION INC	$41,716	$0	$41,716	0%
MAKEMUSIC INC	$3,566	$287	$3,279	8%

Table 1. Software Capitalization Rates (dollars in 000s)

Company	Software Development			% Capitalized
	Incurred	Capitalized	Expensed	
MANHATTAN ASSOCIATES INC	$28,822	$0	$28,822	0%
MANUGISTICS GROUP INC	$31,017	$3,500	$27,517	11%
MAPINFO CORP	$24,580	$838	$23,742	3%
MATRIXONE INC	$29,080	$0	$29,080	0%
MCAFEE INC	$176,350	$0	$176,350	0%
MEDICSIGHT INC	$2,972	$0	$2,972	0%
METASOLV INC	$19,533	$0	$19,533	0%
MICROMUSE INC	$35,100	$0	$35,100	0%
MICROSOFT CORP	$6,184,000	$0	$6,184,000	0%
MICROSTRATEGY INC	$32,397	$926	$31,471	3%
MIDWAY GAMES INC	$108,735	$69,042	$39,693	63%
MOBIUS MGMT SYSTEMS INC	$22,722	$0	$22,722	0%
MOLDFLOW CORP	$8,194	$201	$7,993	2%
MRO SOFTWARE INC	$29,614	$0	$29,614	0%
NATIONAL INSTRUMENTS CORP	$101,221	$13,380	$87,841	13%
NETGURU.COM INC	$1,679	$101	$1,578	6%
NETIQ CORP	$50,567	$0	$50,567	0%
NETMANAGE INC	$6,997	$0	$6,997	0%
NETWORK ENGINES INC	$7,054	$0	$7,054	0%
NOVELL INC	$200,630	$0	$200,630	0%
NUANCE COMMUNICATIONS INC	$38,949	$0	$38,949	0%
OMTOOL LTD	$1,937	$0	$1,937	0%
ON2 TECHNOLOGIES INC	$1,035	$0	$1,035	0%
ONYX SOFTWARE CORP	$11,838	$0	$11,838	0%
OPEN SOLUTIONS INC	$19,608	$0	$19,608	0%
OPEN TEXT CORP	$65,139	$0	$65,139	0%
OPEN TV CORP	$29,753	$0	$29,753	0%
OPENWAVE SYSTEMS INC	$94,986	$0	$94,986	0%
OPNET TECHNOLOGIES INC	$15,455	$0	$15,455	0%
OPSWARE INC	$14,323	$0	$14,323	0%
ORACLE CORP	$1,491,000	$0	$1,491,000	0%
PARAMETRIC TECHNOLOGY CORP	$119,444	$1,177	$118,267	1%
PCTEL INC	$10,015	$0	$10,015	0%
PEERLESS SYSTEMS CORP	$11,723	$0	$11,723	0%
PEGASYSTEMS INC	$19,514	$0	$19,514	0%
PERVASIVE SOFTWARE INC	$8,033	$0	$8,033	0%
PHOENIX TECHNOLOGIES LTD	$20,377	$0	$20,377	0%
PRIVATE BUSINESS INC	$1,249	$1,028	$221	82%
PROGRESS SOFTWARE CORP	$63,071	$0	$63,071	0%
QAD INC	$34,167	$1,520	$32,647	4%
QUADRAMED CORP	$30,476	$0	$30,476	0%
QUEST SOFTWARE INC	$87,876	$0	$87,876	0%
QUOVADX INC	$11,382	$461	$10,921	4%
RAINING DATA CORP	$7,422	$0	$7,422	0%
REALNETWORKS INC	$70,631	$0	$70,631	0%
RED HAT INC	$32,132	$0	$32,132	0%
RENAISSANCE LEARNING INC	$17,325	$279	$17,046	2%
RIGHTNOW TECHNOLOGIES INC	$10,428	$0	$10,428	0%
RSA SECURITY INC	$62,523	$0	$62,523	0%
SABA SOFTWARE INC	$9,349	$0	$9,349	0%
SALESFORCE COM INC	$23,330	$0	$23,330	0%
SAPIENS INTERNATIONAL CORP	$7,281	$4,750	$2,531	65%
SCIENTIFIC LEARNING CORP	$3,896	$0	$3,896	0%
SCO GROUP INC	$8,329	$0	$8,329	0%

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Table 1. Software Capitalization Rates (dollars in 000s)

| Company | Software Development | | | % |
	Incurred	Capitalized	Expensed	Capitalized
SEGUE SOFTWARE INC	$6,610	$0	$6,610	0%
SELECTICA INC	$12,359	$0	$12,359	0%
SERENA SOFTWARE INC	$31,943	$0	$31,943	0%
SIMULATIONS PLUS INC	$999	$474	$525	47%
SINA CORP	$15,268	$0	$15,268	0%
SKILLSOFT PUBLIC LIMITED CO	$45,575	$0	$45,575	0%
SMITH MICRO SOFTWARE INC	$2,556	$0	$2,556	0%
SOFTBRANDS INC	$8,642	$217	$8,425	3%
SONIC FOUNDRY INC	$1,803	$0	$1,803	0%
SONIC SOLUTIONS	$31,913	$295	$31,618	1%
SPSS INC	$54,439	$9,021	$45,418	17%
STELLENT INC	$17,958	$0	$17,958	0%
SUMTOTAL SYSTEMS INC	$11,558	$0	$11,558	0%
SUPPORTSOFT INC	$11,185	$0	$11,185	0%
SYBASE INC	$172,917	$33,906	$139,011	20%
SYMANTEC CORP	$332,266	$0	$332,266	0%
SYNOPSYS INC	$319,945	$2,953	$316,992	1%
SYNPLICITY INC	$24,771	$439	$24,332	2%
TAKE-TWO INTERACTIVE SFTWR*	$167,925	$94,765	$73,160	56%
TELECOMMUNICATION SYS INC	$16,364	$2,512	$13,852	15%
THQ INC	$165,822	$92,863	$72,959	56%
TIBCO SOFTWARE INC	$73,136	$0	$73,136	0%
TOP IMAGE SYSTEMS LTD	$929	$0	$929	0%
TRIPOS INC	$12,581	$1,715	$10,866	14%
TRIZETTO GROUP INC	$40,263	$8,608	$31,655	21%
TRNSACTN SYS ARCHTCTS -CL A	$39,686	$0	$39,686	0%
TUMBLEWEED COMMUNICATIONS CO	$11,888	$0	$11,888	0%
TYLER TECHNOLOGIES INC	$3,402	$1,002	$2,400	29%
ULTICOM INC	$10,636	$0	$10,636	0%
ULTIMATE SOFTWARE GROUP INC	$20,181	$182	$19,999	1%
UNICA CORP	$11,466	$0	$11,466	0%
US DATAWORKS INC	$481	$0	$481	0%
VA SOFTWARE CORP	$6,122	$0	$6,122	0%
VERISIGN INC	$95,339	$0	$95,339	0%
VERSANT CORP	$3,925	$0	$3,925	0%
VERTICALNET INC	$5,822	$0	$5,822	0%
VIEWPOINT CORP	$4,479	$0	$4,479	0%
VIGNETTE CORP	$33,200	$0	$33,200	0%
VIRYANET LTD	$2,069	$0	$2,069	0%
VITAL IMAGES INC	$8,148	$0	$8,148	0%
VITRIA TECHNOLOGY INC	$17,507	$0	$17,507	0%
WATCHGUARD TECHNOLOGIES INC	$18,704	$0	$18,704	0%
WEBMETHODS INC	$44,518	$0	$44,518	0%
WEBSENSE INC	$16,277	$0	$16,277	0%
WEBSITE PROS INC	$1,756	$0	$1,756	0%
WITNESS SYSTEMS INC	$27,206	$500	$26,706	2%
WORKSTREAM INC	$2,147	$0	$2,147	0%
ZI CORP	$5,173	$930	$4,243	18%
ZIX CORP	$6,520	$0	$6,520	0%

*Per the Statement of Cash Flows, a total of $127,304 in software costs were capitalized during 2005. Included in this amount were costs incurred for internal use software of $32,539 ($60,324 at 2005, up from $27,785 at 2004).

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Cash Flow Classification for Software Development Costs

Most companies that capitalize software development costs report the expenditures in the investing section of the statement of cash flows. This classification approach has the effect of shifting software development costs from the operating section of the statement of cash flows to the investing section. To illustrate, consider software Company A that incurred $10 million in total software development costs in one period, of which $2 million were capitalized and reported as an investing use of cash. Only $8 million would appear on the income statement as research & development expense. The $2 million of costs incurred that were capitalized would show up on the balance sheet as an asset. The statement of cash flows would report the expensed portion, the $8 million, as an operating use of cash and the $2 million capitalized amount as an investing use of cash. In contrast, company B expensed all $10 million of its software development costs. Here all $10 million would be reported as an operating use of cash. In other words, compared to a company that expenses all software development costs as incurred (Company B in this example), Company A has boosted its operating cash flow by $2 million using discretion in its interpretation of the meaning of the term technological feasibility. Please refer to Figure 2 below.

Figure 2. Impact on Operating Cash Flow of Capitalized Software Development Costs (dollars in millions).

	Company		
	A	**B**	**% Diff**
	(Capitalize)	**(Expense)**	**A vs B**
Income Statement			
Total Revenue	$100	$100	
Costs & Exp (excl R&D)	$80	$80	
R&D	$8	$10	(20%)
Total Exp	$88	$90	
Net Income	$12	$10	20%

Cash Flow Statement			
Net Income	$12	$10	20%
C/F From Operations			
Adjustments (assumed for non-cash expenses and working capital changes)	($6)	($6)	
Net Cash From Operations	$6	$4	50%
C/F From Inv			
Capital expenditures (assumed)	($1)	($1)	
Capitalized Software Development	($2)	($0)	
Net Cash From Investing	($3)	($1)	
Net Change in Cash	$3	$3	

| **Balance Sheet** | | | |
| Capitalized Software Development Costs, Net | $2 | $0 | |

Note that for Company A, the figure excludes amortization of previously capitalized software development costs. For Company A, amortization would reduce net income, but would be added back in calculating operating cash flow, yielding no net cash flow effect. Amortization would also reduce capitalized software development costs, net on the balance sheet.

Figure 2 demonstrates how two companies with similar operating characteristics can show very different operating results, in particular, operating cash flow, based solely on their capitalization decisions. Company A, which utilizes an average industry capitalization rate of 20%, shows 50% higher operating cash flow than does Company B, which follows the more common approach of expensing all software development costs as incurred.

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While the example above is made up to illustrate a point, it is not atypical. Table 2 shows the impact of software development reporting practices on operating cash flow for the software companies in our 207-company sample. In the total sample, 146, or over 2/3 of the companies in our survey expensed all software development costs incurred and reduced operating cash flow directly. Three additional firms, noted by asterisk, reported capitalized software development costs in operating cash flow. The remaining 58 companies reported capitalized software costs as investing cash flow. For these firms, the resulting average impact on operating cash flow was to increase it by 27%. Seventeen companies had increases in operating cash flow above 27%. The highest total dollar increase to operating cash flow was $70 million.

As the example and data show, comparing operating cash flow across software development companies can be difficult. The financial statement reader must understand the software capitalization practices of the companies under review in order to make apples-to-apples comparisons. This can be made even more difficult if financial statements combine purchased and developed software, which sometimes is the case.

Table 2: Impact on Operating Cash Flow of Reporting Practices for Capitalized
Software Development Costs (dollars in 000s)

Company	Reported Op. C/F	S/D Reported in Inv. C/F	Adjusted Op. C/F	% Adj.
3d Systems Corp	-$5,808	$598	-$6,406	10%
724 SOLUTIONS INC	-$8,415	$0	-$8,415	0%
A D A M INC	$3,976	$455	$3,521	11%
ACCELRYS INC	-$11,909	$4,382	-$16,291	37%
ACTIVCARD	-$31,456	$0	-$31,456	0%
ADOBE SYSTEMS INC	$683,744	$0	$683,744	0%
ADSTAR INC	-$252	$17	-$269	7%
ADVENT SOFTWARE INC	$24,985	$0	$24,985	0%
AGILE SOFTWARE CORP	$1,900	$0	$1,900	0%
ALTIRIS INC	$44,886	$0	$44,886	0%
AMDOCS LTD	$381,751	$0	$381,751	0%
AMERICAN SOFTWARE -CL A	$9,731	$2,750	$6,981	28%
ANSOFT CORP	$16,494	$0	$16,494	0%
ANSWERS CORP	-$4,286	$22	-$4,308	1%
ANSYS INC	$67,825	$270	$67,555	0%
APPLIX INC	$1,553	$0	$1,553	0%
ARIBA INC	-$68,677	$0	-$68,677	0%
ART TECHNOLOGY GROUP INC	-$14,103	$0	-$14,103	0%
ASIAINFO HOLDINGS INC	$17,984	$0	$17,984	0%
ASPEN TECHNOLOGY INC	$25,888	$8,545	$17,343	33%
ASTEA INTERNATIONAL INC	$5,254	$1,555	$3,699	30%
ATARI INC	-$5,644	$0	-$5,644	0%
ATTUNITY LTD	-$1,721	$1,415	-$3,136	82%
AUTODESK INC	$415,200	$0	$415,200	0%
AXS-ONE INC	-$8,661	$18	-$8,679	0%
BEA SYSTEMS INC	$267,469	$0	$267,469	0%
BITSTREAM INC -CL A	-$108	$0	-$108	0%
BLACKBOARD INC	$39,813	$598	$39,215	2%
BLUEPHOENIX SOLUTIONS LTD	$5,192	$8,117	-$2,925	156%
BMC SOFTWARE INC	$501,900	$61,700	$440,200	12%
BORLAND SOFTWARE CORP	$24,623	$0	$24,623	0%
BOTTOMLINE TECHNOLOGIES INC	$13,217	$0	$13,217	0%
BRAODVISIONN INC	-$41,850	$0	-$41,850	0%

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Table 2: Impact on Operating Cash Flow of Reporting Practices for Capitalized Software Development Costs (dollars in 000s)

Company	Reported Op. C/F	S/D Reported in Inv. C/F	Adjusted Op. C/F	% Adj.
BSQUARE CORP	-$1,852	$0	-$1,852	0%
Business Objects SA	$88,141	$0	$88,141	0%
CADENCE DESIGN SYSTEMS INC	$372,522	$0	$372,522	0%
CAPTARIS INC	$7,045	$0	$7,045	0%
CARREKER CORP	$4,530	$776	$3,754	17%
CATAPULT COMMUNICATIONS CORP	$14,822	$0	$14,822	0%
CCC INFORMATION SVCS GRP INC	$38,919	$0	$38,919	0%
CDC CORP	$10,790	$2,818	$7,972	26%
CENTRA SOFTWARE INC	-$8,461	$0	-$8,461	0%
CHECK POINT SOFTWARE TECHN	$302,040	$0	$302,040	0%
CHORDIANT SOFTWARE INC	-$8,950	$2,226	-$11,176	25%
CIMATRON LTD	-$919	$0	-$919	0%
CITRIX SYSTEMS INC	$265,281	$0	$265,281	0%
CLICK COMMERCE INC	$3,560	$0	$3,560	0%
CLICKSOFTWARE TECHNOLOGIES	$688	$0	$688	0%
COGNOS INC	$198,467	$0	$198,467	0%
COMPUTER ASSOCIATES INTL INC	$1,529,000	$70,000	$1,459,000	5%
COMPUWARE CORP	$242,287	$19,299	$222,988	8%
CONCUR TECHNOLOGIES INC	$10,323	$0	$10,323	0%
CONVERA CORP	-$19,914	$0	-$19,914	0%
CORILLIAN CORP	$12,427	$0	$12,427	0%
DATATRAK INTERNATIONAL INC	-$63	$0	-$63	0%
DATAWATCH CORP	$1,163	$43	$1,120	4%
DENDRITE INTERNATIONAL INC	$44,126	$4,864	$39,262	11%
DESCARTES SYSTEMS GROUP INC	-$15,038	$0	-$15,038	0%
DIGIMARC CORP	$4,679	$0	$4,679	0%
DOCUCORP INTERNATIONAL INC	$12,030	$5,231	$6,799	43%
DOCUMENT SCIENCES CORP	$1,253	$0	$1,253	0%
EBIX INC	$2,810	$0	$2,810	0%
ELECTRONIC ARTS INC	$634,000	$0	$634,000	0%
ELRON ELECTRONIC INDS LTD	-$9,412	$0	-$9,412	0%
EMAGEON INC	-$1,881	$354	-$2,235	19%
ENTRUST INC	-$1,510	$0	-$1,510	0%
EPICOR SOFTWARE CORP	$27,708	$0	$27,708	0%
ERESEARCHTECHNOLOGY INC	$59,621	$0	$59,621	0%
FALCONSTOR SOFTWARE INC	-$1,072	$0	-$1,072	0%
FILENET CORP	$70,020	$0	$70,020	0%
FIRSTWAVE TECHNOLOGIES INC	-$926	$0	-$926	0%
GSE SYSTEMS INC	-$1,851	$483	-$2,334	26%
HUMMINGBIRD LTD	$39	$0	$39	0%
HYPERION SOLUTIONS CORP	$130,689	$5,800	$124,889	4%
HYPERSPACE COMMUNICATIONS INC	-$2,558	$0	-$2,558	0%
I2 TECHNOLOGIES INC	-$107,255	$0	-$107,255	0%
IMAGEWARE SYSTEMS INC	-$3,761	$0	-$3,761	0%
I-MANY INC	-$2,340	$0	-$2,340	0%
INDUS INTERNATIONAL INC	$1,302	$300	$1,002	23%
INFORMATICA CORP	$37,935	$0	$37,935	0%
INSIGHTFUL CORP	$2,725	$0	$2,725	0%
INSIGNIA SOLUTIONS PLC	-$7,583	$0	-$7,583	0%
INTELLI CHECK INC	-$3,774	$0	-$3,774	0%
INTELLIGENT SYSTEM CP	-$3,982	$0	-$3,982	0%
INTELLISYNC CORP	-$4,602	$0	-$4,602	0%

Table 2: Impact on Operating Cash Flow of Reporting Practices for Capitalized Software Development Costs (dollars in 000s)

Company	Reported Op. C/F	S/D Reported in Inv. C/F	Adjusted Op. C/F	% Adj.
INTERACTIVE INTELLIGENCE INC	-$297	$0	-$297	0%
INTERGRAPH CORP	$184,897	$10,395	$174,502	6%
INTERNET SECURITY SYS INC	$72,606	$0	$72,606	0%
INTERVIDEO INC	$14,540	$0	$14,540	0%
INTERWOVEN INC	-$7,232	$0	-$7,232	0%
INTRUSION INC	-$4,736	$0	-$4,736	0%
INTUIT INC	$597,704	$0	$597,704	0%
JACADA LTD	-$2,631	$0	-$2,631	0%
JDA SOFTWARE GROUP INC	$24,845	$0	$24,845	0%
KINTERA INC	-$17,567	$1,137	-$18,704	6%
KRONOS INC	$78,167	$13,853	$64,314	18%
LAWSON SOFTWARE INC	$32,898	$0	$32,898	0%
LIONBRIDGE TECHNOLOGIES INC	$11,344	$0	$11,344	0%
LIVEPERSON INC	$2,067	$0	$2,067	0%
LOGICVISION INC	-$5,997	$0	-$5,997	0%
LOGILITY INC	$7,499	$2,750	$4,749	37%
MAGIC SOFTWARE ENTERPRISES	$5,597	$3,909	$1,688	70%
MAGMA DESIGN AUTOMATION INC	$37,128	$0	$37,128	0%
MAKEMUSIC INC	$451	$287	$164	64%
MANHATTAN ASSOCIATES INC	$44,481	$0	$44,481	0%
MANUGISTICS GROUP INC	$14,524	$3,500	$11,024	24%
MAPINFO CORP	$15,709	$838	$14,871	5%
MATRIXONE INC	-$2,580	$0	-$2,580	0%
MCAFEE INC	$419,457	$0	$419,457	0%
MEDICSIGHT INC	-$15,115	$0	-$15,115	0%
METASOLV INC	$1,771	$0	$1,771	0%
MICROMUSE INC	$26,945	$0	$26,945	0%
MICROSOFT CORP	$16,605,000	$0	$16,605,000	0%
MICROSTRATEGY INC	$102,551	$926	$101,625	1%
MIDWAY GAMES INC *	-$100,377	$0	-$100,377	0%
MOBIUS MGMT SYSTEMS INC	$610	$0	$610	0%
MOLDFLOW CORP	$6,338	$201	$6,137	3%
MRO SOFTWARE INC	$22,559	$0	$22,559	0%
NATIONAL INSTRUMENTS CORP	$88,050	$13,380	$74,670	15%
NETGURU.COM INC	-$210	$101	-$311	48%
NETIQ CORP	$10,449	$0	$10,449	0%
NETMANAGE INC	$3,012	$0	$3,012	0%
NETWORK ENGINES INC	-$1,535	$0	-$1,535	0%
NOVELL INC	$500,414	$0	$500,414	0%
NUANCE COMMUNICATIONS INC	$16,198	$0	$16,198	0%
OMTOOL LTD	$873	$0	$873	0%
ON2 TECHNOLOGIES INC	-$4,307	$0	-$4,307	0%
ONYX SOFTWARE CORP	-$9,738	$0	-$9,738	0%
OPEN SOLUTIONS INC	$43,980	$0	$43,980	0%
OPEN TEXT CORP	$57,264	$0	$57,264	0%
OPEN TV CORP	-$16,174	$0	-$16,174	0%
OPENWAVE SYSTEMS INC	-$7,618	$0	-$7,618	0%
OPNET TECHNOLOGIES INC	$4,689	$0	$4,689	0%
OPSWARE INC	-$1,042	$0	-$1,042	0%
ORACLE CORP	$3,552,000	$0	$3,552,000	0%
PARAMETRIC TECHNOLOGY CORP	$128,139	$1,177	$126,962	1%
PCTEL INC	-$324	$0	-$324	0%

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Table 2: Impact on Operating Cash Flow of Reporting Practices for Capitalized
Software Development Costs (dollars in 000s)

Company	Reported Op. C/F	S/D Reported in Inv. C/F	Adjusted Op. C/F	% Adj.
PEERLESS SYSTEMS CORP	-$2,731	$0	-$2,731	0%
PEGASYSTEMS INC	$25,295	$0	$25,295	0%
PERVASIVE SOFTWARE INC	$9,233	$0	$9,233	0%
PHOENIX TECHNOLOGIES LTD	$15,813	$0	$15,813	0%
PRIVATE BUSINESS INC	$4,389	$1,028	$3,361	23%
PROGRESS SOFTWARE CORP	$80,630	$0	$80,630	0%
QAD INC	$28,567	$1,520	$27,047	5%
QUADRAMED CORP	$14,857	$0	$14,857	0%
QUEST SOFTWARE INC	$101,913	$0	$101,913	0%
QUOVADX INC	$10,626	$461	$10,165	4%
RAINING DATA CORP	$2,812	$0	$2,812	0%
REALNETWORKS INC	$460,753	$0	$460,753	0%
RED HAT INC	$122,217	$0	$122,217	0%
RENAISSANCE LEARNING INC	$31,409	$279	$31,130	1%
RIGHTNOW TECHNOLOGIES INC	$14,895	$0	$14,895	0%
RSA SECURITY INC	$56,100	$0	$56,100	0%
SABA SOFTWARE INC	-$7,318	$0	-$7,318	0%
SALESFORCE COM INC	$95,893	$0	$95,893	0%
SAPIENS INTERNATIONAL CORP	-$2,986	$4,750	-$7,736	159%
SCIENTIFIC LEARNING CORP	-$2,114	$0	-$2,114	0%
SCO GROUP INC	-$21,507	$0	-$21,507	0%
SEGUE SOFTWARE INC	$2,885	$0	$2,885	0%
SELECTICA INC	-$19,172	$0	-$19,172	0%
SERENA SOFTWARE INC	$63,171	$0	$63,171	0%
SIMULATIONS PLUS INC	$1,438	$474	$964	33%
SINA CORP	$58,273	$0	$58,273	0%
SKILLSOFT PUBLIC LIMITED CO	-$33,630	$0	-$33,630	0%
SMITH MICRO SOFTWARE INC	$3,018	$0	$3,018	0%
SOFTBRANDS INC	$10,250	$217	$10,033	2%
SONIC FOUNDRY INC	-$3,347	$0	-$3,347	0%
SONIC SOLUTIONS	$22,189	$295	$21,894	1%
SPSS INC	$51,509	$9,021	$42,488	18%
STELLENT INC	$2,917	$0	$2,917	0%
SUMTOTAL SYSTEMS INC	$113	$0	$113	0%
SUPPORTSOFT INC	-$844	$0	-$844	0%
SYBASE INC	$169,992	$33,906	$136,086	20%
SYMANTEC CORP	$1,207,459	$0	$1,207,459	0%
SYNOPSYS INC	$269,190	$2,953	$266,237	1%
SYNPLICITY INC	$7,908	$439	$7,469	6%
TAKE-TWO INTERACTIVE SFTWR *	$39,980	$0	$39,980	0%
TELECOMMUNICATION SYS INC	$4,754	$2,512	$2,242	53%
THQ INC *	$60,455	$0	$60,455	0%
TIBCO SOFTWARE INC	$82,828	$0	$82,828	0%
TOP IMAGE SYSTEMS LTD	-$1,073	$0	-$1,073	0%
TRIPOS INC	$4,607	$1,715	$2,892	37%
TRIZETTO GROUP INC	$43,825	$8,608	$35,217	20%
TRNSACTN SYS ARCHTCTS -CL A	$53,151	$0	$53,151	0%
TUMBLEWEED COMMUNICATIONS CO	$4,727	$0	$4,727	0%
TYLER TECHNOLOGIES INC	$21,187	$1,002	$20,185	5%
ULTICOM INC	$18,324	$0	$18,324	0%
ULTIMATE SOFTWARE GROUP INC	$5,397	$182	$5,215	3%
UNICA CORP	$9,740	$0	$9,740	0%

Table 2: Impact on Operating Cash Flow of Reporting Practices for Capitalized
Software Development Costs (dollars in 000s)

Company	Reported Op. C/F	S/D Reported in Inv. C/F	Adjusted Op. C/F	% Adj.
US DATAWORKS INC	-$4,054	$0	-$4,054	0%
VA SOFTWARE CORP	-$6,135	$0	-$6,135	0%
VERISIGN INC	$510,787	$0	$510,787	0%
VERSANT CORP	$485	$0	$485	0%
VERTICALNET INC	-$3,953	$0	-$3,953	0%
VIEWPOINT CORP	-$5,958	$0	-$5,958	0%
VIGNETTE CORP	$16,730	$0	$16,730	0%
VIRYANET LTD	-$2,691	$0	-$2,691	0%
VITAL IMAGES INC	$13,715	$0	$13,715	0%
VITRIA TECHNOLOGY INC	-$13,731	$0	-$13,731	0%
WATCHGUARD TECHNOLOGIES INC	-$1,244	$0	-$1,244	0%
WEBMETHODS INC	$2,400	$0	$2,400	0%
WEBSENSE INC	$100,688	$0	$100,688	0%
WEBSITE PROS INC	$3,890	$0	$3,890	0%
WITNESS SYSTEMS INC	$6,265	$500	$5,765	8%
WORKSTREAM INC	-$8,940	$0	-$8,940	0%
ZI CORP	$1,147	$930	$217	81%
ZIX CORP	$24,901	$0	$24,901	0%

* THQ, Inc., Take-Two Interactive Software and Midway Games, Inc. included capitalized software development
costs in operating cash flow.

Impairment Charges for Capitalized Software Development Costs

In accounting for software costs, another judgment that managers must make is estimating the
length of time and rate at which to amortize capitalized software costs. This judgment must be
made using the greater of (a) the ratio of current revenues to total revenues or (b) the straight-line
method over the estimated remaining life of the product. Using four examples, Figure 3 below
shows how amortization expense is calculated.

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Figure 3. Calculating Amortization of Capitalized Software Development Costs

Capitalized software development $100
Expected Revenue $200

Scenario		Expected Life	Yr1	Yr2	Yr3	Yr4	Yr5	Tot
A	Revenue		$40	$40	$40	$40	$40	
	Amortization	5	$20	$20	$20	$20	$20	$100
B	Revenue		120	50	30			
	Amortization	3	$60	$33.3	$6.7			$100
C	Revenue		$100	$50	$30	$20		
	Amortization	4	$50	$25	$25	$0		$100
D	Revenue		$30	$40	$60	$40	$30	
	Amortization	5	$20	$20	$30	$20	$10	$100

Each amortization amount reflects the greater of straight-line amortization or amortization calculated based on the ratio of current year revenue to total expected revenue.

Scenario A shows typical straight-line amortization. Amortization is taken equally in each year of the expected product life. Scenario B and D illustrate how the expected distribution of revenues can alter straight-line amortization. Scenario B shows an initially high expected amount of revenue in the first year that quickly tapers off. Scenario D shows expected revenues that build to a maximum in the middle of the product life and then taper off at the end of the product life. Scenario C shows how taking the maximum amortization as required by FASB Statement No. 86 will increase the amortization rate from the expected 4 years to 3.

The operative word in the discussion above is *expected*. The amortization amounts are calculated using management's best estimate as to the expected life and revenue streams of the product in question. If these estimates are wrong then write-downs of capitalized software development costs are needed in future periods and will adversely affect earnings. For example, if management elected to use scenario A and in year 3 realized the product had reached the end of its useful life, the company would have to write down $60 of capitalized costs instead of recording the expected amortization amount of $20. Such write-downs can be a recurring problem if management is consistently optimistic.

Given the dynamic nature of the software industry, it should be expected that write-downs to capitalized software assets will occur. Of the 207 companies we sampled for this study, we found 8 companies that recorded material write-downs of capitalized software assets across 2004 and 2005. In Table 3 we present data on software development write-downs for these 8 firms.

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Table 3. Write-downs of Capitalized Software Development Costs (dollars in 000s).

Company (year of write-down)	Pretax Earnings (Loss)	Write Down Amount	Beg Cap Software Net	Writedown % of	
				Beg Cap Software	Pretax Earnings (Loss)
ADSTAR INC (2004)	($3,643)	$258	$1,928	13%	(7%)
AMERICAN SOFTWARE (2005)	$4,829	$703	$7,119	10%	15%
BMC SOFTWARE INC (2004)	($29,400)	$36,800	$192,700	19%	(125%)
KINTERA INC (2005)	($41,904)	$264	$1,908	14%	(1%)
LOGILITY INC (2005)	($579)	$703	$6,406	11%	(121%)
MIDWAY GAMES INC (2005)	($111,226)	$2,632	$28,659	9%	(2%)
SAPIENS INTERNATIONAL (2004)	($4,614)	$901	$11,282	8%	(20%)
TAKE-TWO INTERACTIVE (2005)	$43,696	$8,645	$64,322	13%	20%

In examining Table 3 we see that the average software asset write-down, as a percentage of net capitalized software, was 12% with the largest being 19%. The largest write-down amount in total dollars was $37 million.

Investors must be mindful of the potential for earnings surprises due to write-downs of capitalized software development assets. Whether these write-downs occur because of aggressive accounting practices or from unforeseen circumstances due the nature of the software industry is less important than the fact that they do happen with significant frequency and impact.

Summary

The intent of FASB Statement No. 86 was to bring consistency to software capitalization practices. While the guidelines have improved things somewhat, there are still significant differences in the way companies across the software industry capitalize software development costs. Given the impact that different managerial philosophies and software development practices can have on capitalization and amortization rates, it is imperative that the investor fully understand these factors and consider them carefully before making investing decisions.

One solution to this problem might be for the FASB to consider revoking Statement No. 86 and treat all software development costs as R&D. Considering the high rate of write-downs of capitalized software development assets, the dynamic nature of the software industry and the fact that the majority of software development companies do not capitalize software; this step would seem to be more closely aligned with the realities of the software industry today. Additionally, this course of action would have the side benefit of improving comparability among software companies.

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