BEHIND THE NUMBERS
Quality of Earnings Analysis

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Disappearing Software Research

Accounting gimmicks result in underreported R&D for major software companies

(Companies mentioned include ROP, OTEX, ANSS, TYL, MANH)

We have discussed in the past how GAAP accounting coupled with non-GAAP adjustments allow companies in research-heavy industries that pursue a growth-through-acquisition strategy to significantly underreport their true development costs. We will discuss the mechanics of the process in the first section of this report followed by a look at several companies in the software space whose income statements appear to underreport their true cost of developing new products.

The Non-GAAP Amortization Adjustment

Virtually all companies' results now include some type of adjustment to their GAAP earnings to purportedly make them more "indicative of underlying performance." While these adjustments may occasionally involve removing unusual gains or one-time events, many companies adjust out recurring expenses. One of the most common of these add-backs is the amortization of intangible assets resulting from acquisitions. The logic is that amortization is viewed as a non-cash expense. However, we will always argue that real cash was spent when making the deals that generated the intangibles in the first place.

Some also argue that since goodwill is not expensed, intangibles shouldn't be either. However, we are strong believers that goodwill should be expensed. When we started our careers, goodwill was required to be amortized over a period not to exceed 40 years, and we have argued extensively for a return to that policy ever since.

When a company makes an acquisition and books half the deal price as goodwill and the other half as an intangible asset and then ignores the associated amortization, the cost of the deal is never reflected on the income statement unless the value of the intangibles is later deemed to have been impaired and is written off. At that point, the company will once again invoke the power of the non-GAAP adjustments to add the impairment charge back to earnings, and Wall Street analysts will gladly ignore it. Behold the magic that is non-GAAP accounting!

So what does all this have to do with research and development? Intellectual property is an asset, and like any asset, money was invested in its creation. Someone built it instead of buying it. As it was built, wages were paid in cash, equipment was purchased, legal work was performed, and there may have been five failures and reconfigurations before success was achieved. During that time, there were considerable expenses moving through the income statement. That lowered income as well as operating and free cash flow. But what about the company that acquires its R&D?:

- When a technologically-focused company buys another firm, it is obtaining the patents, products, and know-how that the acquired company invested to develop over many years. Thus that company in effect bought its R&D through acquisition.

- This shows up as cash spent on the cash flow statement – even though that is typically overlooked in calculating free cash flow. It also may show up on the balance sheet as debt, but certainly as goodwill and intangible assets.

- With goodwill not being expensed and the amortization of other intangibles being ignored and added back, the company acquiring R&D looks more profitable on a non-GAAP basis. It likely has higher income and margins over a peer that developed a similar technology in-house.

- However, it quite possibly paid more to acquire the existing asset than it may have cost to build in-house. That shows up on the balance sheet as more debt and often in falling profitability and ROI. But initially, there is no penalty for overpaying. For example:

    - IBM (IBM) paid $3.5 billion for the Lotus spreadsheet – it later combined it with other software products and sold them all for only $1.8 billion. Did this have eternal life and cash flow? Did it create value for IBM shareholders?

- Teva Pharmaceuticals (TEVA) grew with a number of acquisitions and its goodwill rose from $3.1 billion in 2005 to a peak of $66.2 billion (bought with borrowed money) in 1Q17. After downsizing and $27.5 billion of impairments – goodwill is now only $16.9 billion.

Adding Back Stock Compensation Paid to R&D Employees

We pointed out in the above section that companies that develop technology in-house have to pay their employees to do so. However, many can minimize this cost by using another very common non-GAAP adjustment- adding back stock compensation expense. Many technologically-intensive companies utilize stock compensation for a significant portion of their R&D staff's compensation packages. Therefore, ignoring the cost of these stock awards will lead to an understatement of R&D expense in non-GAAP earnings compared to a peer that either utilizes stock compensation to a lesser degree or doesn't add stock compensation back to its non-GAAP results. It also creates risks in that:

- Employees often leave if a stock price is not rising as they question the value of their stock awards.

- Non-GAAP earnings decline more quickly if stock compensation is replaced with cash.

- Does the company have the cash flow to sustain its operating model if it cannot afford more acquisitions or to pay cash to an R&D staff that is no longer satisfied by stock compensation?

Two weeks ago, we looked at 19 semiconductor companies whose earnings were impacted to at least some degree by this phenomenon and focused in on several that were particularly exposed. This week, we publish the results of our look at the software space which includes a list of 16 companies with market capitalizations greater than $5 billion whose non-GAAP results we believe are benefitting the most from understated development costs. We then do a deeper dive into 4 whose development costs are particularly low compared to economic reality as well as a look at one in the space whose earnings appear to be high quality from the standpoint of reflecting true development costs.

The Results

We started with a list of software companies with market capitalizations of more than $5 billion. From there, we began looking for companies that exhibited the following characteristics.

- It adds a meaningful amount of amortization of acquired intangible assets back to its non-GAAP earnings. There was no exact cutoff point, but most are north of 5%.

- The intangible asset balance resulted from regular acquisitions made over the last five years, not just a single large deal several years ago.

- Cash acquisition spending is large relative to free cash flow and in many cases, it exceeds it.

The following table shows amortization as a percentage of sales for the last fourth quarters and five fiscal years for 16 companies that exhibit the above characteristics:

Amortization Added Back to Non-GAAP Earnings as % of Sales

Ticker	Company	Q0	Q-1	Q-2	Q-3	FY 0	FY -1	FY -2	FY -3	FY -4
ROP	Roper Technologies Inc	11.7%	11.5%	11.9%	12.2%	11.4%	11.8%	11.2%	7.7%	6.1%
BSY	Bentley System Inc	4.1%	4.3%	4.4%	4.7%	4.9%	3.5%	2.6%	2.5%	
GEN	Gen Digital Inc	12.6%	12.5%	12.6%	12.6%	9.2%	4.4%	4.1%	4.4%	4.5%
OTEX	Open Text Corp	13.8%	13.3%	12.8%	10.5%	12.3%	11.9%	12.9%	15.4%	13.0%
TYL	Tyler Technologies Inc	5.6%	5.4%	5.8%	6.5%	6.1%	5.7%	10.2%	8.3%	0.0%
ANSS	ANSYS Inc	5.8%	5.1%	4.9%	3.1%	4.1%	4.0%	3.4%	2.4%	3.2%
PTC	PTC Inc	3.8%	3.9%	3.7%	3.0%	3.6%	3.2%	3.3%	3.8%	4.1%
U	Unity Software Inc	18.2%	18.5%	19.6%	16.3%	12.4%	3.0%	2.3%	2.1%	1.0%
APP	AppLovin Corporation	12.8%	15.1%	16.1%	17.5%	18.3%	14.2%	16.5%	8.3%	
TWLO	Twilio Inc	4.7%	4.8%	5.0%	5.0%	5.4%	7.0%	5.6%	6.4%	1.1%
DV	DoubleVerify Holdings Inc	5.1%	4.8%	5.1%	4.7%	5.5%	5.7%	7.3%	9.4%	
SPSC	SPS Commerce Inc	2.8%	2.7%	3.1%	3.1%	2.6%	2.6%	1.8%	1.9%	1.6%
ALTR	Altair Engineering Inc	5.7%	5.4%	4.7%	5.5%	4.8%	3.4%	3.5%	3.1%	2.0%
PCOR	Procore Technologies Inc	3.7%	4.1%	4.4%	4.7%	5.3%	2.7%	1.4%	0.8%	
S	SentinelOne Inc	5.9%	4.8%	5.2%	6.1%	5.4%	1.6%			
BILL	BILL Holdings Inc	7.8%	8.0%	8.5%	8.7%	8.6%	13.3%	2.4%		

Below, we show free cash flow before and after cash acquisition spending for the same time periods:

	Q0	Q-1	Q-2	Q-3	FY 0	FY -1	FY -2	FY -3	FY -4
Roper Technologies Inc (ROP)									
Free Cash Flow	$607,700	$295,100	$444,000	$53,300	$664,300	$1,953,700	$1,482,700	$1,408,600	$1,371,500
FCF Less Cash on Acquis.	-$1,345,100	$278,900	$442,900	-$3,645,900	-$3,615,800	$1,736,700	-$4,535,400	-$978,700	$95,700

	Q0	Q-1	Q-2	Q-3	FY 0	FY -1	FY -2	FY -3	FY -4
Bentley System Inc (BSY)									
Free Cash Flow	$65,171	$73,627	$171,939	$30,562	$255,778	$270,485	$241,893	$154,134	$142,849
FCF Less Cash on Acquis.	$52,360	$73,627	$161,640	$7,094	-$487,229	-$764,498	$183,918	$61,102	$103,520

	Q0	Q-1	Q-2	Q-3	FY 0	FY -1	FY -2	FY -3	FY -4
Gen Digital Inc (GEN)									
Free Cash Flow	$120,000	$222,000	$323,000	$305,000	$751,000	$968,000	$700,000	-$950,000	$1,288,000
FCF Less Cash on Acquis.	$120,000	$222,000	-$6,224,000	$305,000	-$5,796,000	$929,000	$356,000	-$950,000	$1,108,000

	Q0	Q-1	Q-2	Q-3	FY 0	FY -1	FY -2	FY -3	FY -4
Open Text Corp (OTEX)									
Free Cash Flow	$9,582	$91,241	$305,542	$162,955	$655,373	$888,701	$812,445	$881,827	$812,441
FCF Less Cash on Acquis.	$310	$89,241	-$5,350,458	$162,955	-$5,002,590	$14,773	$811,474	-$500,754	$428,718

	Q0	Q-1	Q-2	Q-3	FY 0	FY -1	FY -2	FY -3	FY -4
Tyler Technologies Inc (TYL)									
Free Cash Flow	$162,666	-$33,208	$63,610	$114,704	$331,304	$316,141	$326,623	$212,680	$222,779
FCF Less Cash on Acquis.	$129,001	-$33,208	$61,735	$68,489	$167,383	-$1,773,565	$325,331	-$6,054	$44,686

	Q0	Q-1	Q-2	Q-3	FY 0	FY -1	FY -2	FY -3	FY -4
ANSYS Inc (ANSS)									
Free Cash Flow	$156,264	$57,721	$253,874	$164,829	$606,633	$526,464	$511,940	$454,996	$463,226
FCF Less Cash on Acquis.	$156,264	-$19,481	$133,290	$21,178	$220,369	$15,659	-$60,388	-$332,200	$180,200

	Q0	Q-1	Q-2	Q-3	FY 0	FY -1	FY -2	FY -3	FY -4
PTC Inc (PTC)									
Free Cash Flow	$43,990	$164,138	$388,099	$171,741	$587,047	$415,830	$344,096	$213,612	$220,734
FCF Less Cash on Acquis.	$43,190	$164,138	-$440,172	$171,741	-$242,024	$126,436	-$374,484	-$280,916	$133,997

	Q0	Q-1	Q-2	Q-3	FY 0	FY -1	FY -2	FY -3	FY -4
Unity Software Inc (U)									
Free Cash Flow	$103,961	$33,525	-$19,449	-$63,855	-$116,569	-$153,387	-$20,243	-$94,971	-$119,078
FCF Less Cash on Acquis.	$103,961	$33,525	-$19,449	$83,516	$4,962	-$1,733,468	-$73,468	-$287,477	-$121,102

	Q0	Q-1	Q-2	Q-3	FY 0	FY -1	FY -2	FY -3	FY -4
AppLovin Corporation (APP)									
Free Cash Flow	$196,793	$223,739	$286,465	$161,755	$406,162	$356,394	$219,642	$195,104	$0
FCF Less Cash on Acquis.	$183,333	$187,577	$284,271	$157,626	-$933,665	-$850,088	-$455,008	-$209,092	$0

	Q0	Q-1	Q-2	Q-3	FY 0	FY -1	FY -2	FY -3	FY -4
Twilio Inc (TWLO)									
Free Cash Flow	$195,976	$73,431	-$107,726	-$68,311	-$300,129	-$102,165	-$674	-$7,874	-$11,563
FCF Less Cash on Acquis.	$189,611	$71,758	-$114,477	-$78,655	-$371,960	-$639,735	-$360,070	$69,507	-$47,246

	Q0	Q-1	Q-2	Q-3	FY 0	FY -1	FY -2	FY -3	FY -4
DoubleVerify Holdings Inc (DV)									
Free Cash Flow	$30,884	$7,166	$17,327	$24,239	$54,881	$73,352	$11,465	$23,490	
FCF Less Cash on Acquis.	-$36,356	$7,166	$17,327	$24,239	$54,881	-$75,865	$11,465	-$33,762	

	Q0	Q-1	Q-2	Q-3	FY 0	FY -1	FY -2	FY -3	FY -4
SPS Commerce Inc (SPSC)									

Free Cash Flow	$38,144	$29,531	$16,370	$17,583	$80,172	$93,305	$72,095	$58,209	$41,265
FCF Less Cash on Acquis.	-$32,074	$29,531	$16,370	$17,583	-$11,248	$76,239	-$26,571	$46,709	$13,992

	Q0	Q-1	Q-2	Q-3	FY 0	FY -1	FY -2	FY -3	FY -4
Altair Engineering Inc (ALTR)									
Free Cash Flow	$14,729	$25,573	$57,472	$10,109	$29,922	$53,774	$26,789	$21,733	$29,571
FCF Less Cash on Acquis.	$12,215	$24,852	$57,472	$9,698	-$104,619	-$209	-$16,372	-$4,460	-$176,594

	Q0	Q-1	Q-2	Q-3	FY 0	FY -1	FY -2	FY -3	FY -4
Procore Technologies Inc (PCOR)									
Free Cash Flow	$22,459	-$23,598	$19,151	$11,715	-$36,822	$9,099	$2,887	-$34,994	
FCF Less Cash on Acquis.	$16,448	-$23,598	$19,151	$11,715	-$36,822	-$500,738	-$11,658	-$73,689	

	Q0	Q-1	Q-2	Q-3	FY 0	FY -1	FY -2	FY -3	FY -4
SentinelOne Inc (S)									
Free Cash Flow	-$26,375	-$15,188	-$31,433	-$25,368	-$211,692	-$105,080	-$72,611	-$47,077	
FCF Less Cash on Acquis.	-$29,598	-$15,228	-$31,606	-$25,528	-$493,131	-$109,331	-$72,835	-$47,277	

	Q0	Q-1	Q-2	Q-3	FY 0	FY -1	FY -2	FY -3	FY -4
BILL Holdings Inc (BILL)									
Free Cash Flow	$47,613	$72,882	$23,972	$47,699	$156,565	-$33,729	-$16,583	-$16,506	-$8,248
FCF Less Cash on Acquis.	$47,613	$72,882	$23,972	$18,797	$127,663	-$178,078	-$572,673	-$16,506	-$8,248

We dug further into the names on this list to find the ones whose development costs seem to be the most understated. Some of these are enjoying declining R&D expense on the income statement and are also seeing rising stock compensation as a percentage of sales (which is also added back to non-GAAP earnings) as a percentage of sales increase. In many cases, the bulk of stock compensation expense goes to the R&D staff which is more development expense that is not being accounted for in the non-GAAP profits, or the free cash flow figures.

Roper Technologies, Inc. (ROP)

ROP is an odd player in this space as it primarily seeks to buy and sell other software companies. There are several reasons we perform these industry reviews on a key operating/accounting concept for multiple companies. Two of them are 1) to be pointed into a hot area where there are examples of both high-quality and low-quality reported results and 2) to uncover some companies that may justify a much larger review in the future. We believe Roper fits into the latter category. Here's what we have found on Roper at this point:

- It is clearly buying its R&D. This is by design. The company's goal is to identify and purchase niche software products that do not attract considerable competition because they are often entrenched in mundane areas such as collecting data on water meters or administering pharmacy tasks in assisted living centers.

- Roper operates more like a portfolio of businesses buying and selling software companies and sees its debt figures rise and fall based on the timing of acquisitions and divestitures. Free cash flow adjusted for acquisitions and divestitures is frequently immaterial to hugely negative.

Roper	2022	2021	2020	2019	2018	2017	2016	2015	2014
Cash Ops	$735	$2,012	$1,525	$1,462	$1,430	$1,235	$963	$929	$840
CapEx	$40	$29	$25	$43	$49	$49	$37	$36	$38
Cap. Software	$30	$30	$18	$10	$10	$11	$3	$2	$3
Free Cash Flow	$664	$1,954	$1,482	$1,409	$1,372	$1,175	$923	$890	$800
Acquisitions	$4,280	$217	$6,018	$2,387	$1,276	$154	$3,722	$1,763	$305
Divestitures	$5,562	$116	$0	$0	$0	$0	$0	$106	$0
Adj. Free Cash	$1,946	$1,853	-$4,536	-$978	$96	$1,021	-$2,799	-$767	$495
Change in Debt	-$1,274	-$1,650	$4,320	$335	-$205	-$1,060	$2,946	$1,076	-$249

- Roper only reports R&D on an annual basis when it breaks it out from SG&A. R&D is only about 10% of sales, even though it has increased. Most companies in this group are spending closer to 20%. If R&D was doubled, it would have cut 2022's adjusted EPS of $14.28 by $3.88.

Roper	2022	2021	2020	2019	2018
Sales	$5,372	$5,778	$5,527	$5,367	$5,198
R&D	$530	$528	$446	$339	$317
% of Sales	9.9%	9.1%	8.1%	6.3%	6.1%

- The bulk of the price of its acquisitions is allocated to goodwill. $17.0 billion is in goodwill with other intangibles at an initial cost of $11.9 billion. The standard GAAP practice of not expensing goodwill is adding $4.00 to EPS per year assuming a 40-year amortization period. We would question the lifespan of much software being even 10 years without heavy product additions, adapting to new hardware and operating systems, and rewriting. However, we don't see that much R&D being expensed at ROP. We believe a strong case could be made that a 20-year life for goodwill is more rational which would cut EPS by $8 per year or $2 per quarter.

- Other intangibles started at $11.9 billion. The largest part of this is customer-related at $10.0 billion, and ROP amortizes this over 18-20 years. Unpatented technology is another $1.0 billion and is amortized over 5 years, and there is another $720 million in tradenames that are not amortized. However, ROP adds this back to adjusted EPS. The 2022 non-GAAP EPS of $14.28, includes $4.44 of amortization added back. We could argue the amortization expense itself is unrealistically low given an 18-20 year amortization period for most of this and not amortizing other assets. The annualized rate is now $5.20.

- We view this as aggressive accounting by buying assets and not recognizing any expense. ROP is reporting $14.28 in adjusted EPS with guidance of $16.67. If this software had been built in-house, ROP would be expensing more. We think a reasonable case can be made for almost $4 in additional R&D, $4-$8 in Goodwill, and $5 in other amortization. ROP doesn't have EPS, without this type of accounting.

- Roper does not add back stock compensation to adjusted EPS. That is a positive in our view and conservative for this group. Also, stock compensation remains a very low percentage of sales. Most others are 17%-30% of sales vs. Roper at 2%.

Roper	2022	2021	2020	2019	2018
Sales	$5,372	$5,778	$5,527	$5,367	$5,198
Stock Comp	$119	$136	$122	$105	$134
% of Sales	2.2%	2.4%	2.2%	1.9%	2.6%

- It looks odd that ROP has declining net PP&E and low capital spending.

Roper	2022	2021	2020	2019	2018
Capital Spending	$40	$33	$31	$53	$49
Net PP&E	$85	$103	$141	$140	$129

- Most analysts would use ROP's adjusted EBITDA to run return on capital. For 2022, adjusted EBITDA was $2.12 billion. Debt + Equity was $22.7 billion for an ROI of 9.4%.

That doesn't wow us at all. Just expense the non-goodwill intangibles and ROI falls to 6.6%. Plus, making acquisitions is the operating model. The cost of buying companies is part of its normal P&L statement.

- The divestment of 51% of several businesses now called Indicor can also require additional payments by ROP. So far, it is paying them in-kind, which lowers the 49% ownership.

Open Text Corporation (OTEX)

OTEX makes many acquisitions. It is beating estimates and looks cheap at only 8x adjusted EPS. However, more than half the assets are goodwill and are not expensed. Free cash flow is rarely positive when factoring in the deals. The company is beating forecasts but a big part of that is a rising goodwill figure not being amortized.

- The cash flow statement below shows strong free cash flow as companies typically define it. When we factor in payments for acquisitions, rarely does OTEX show any material free cash flow. This is a normal way of growth of OTEX and while this table goes back almost 5 years, readers should be aware that in fiscal 2017-19 – OTEX spent $2.8 billion on eight more sizable deals. Notice that debt is rising. On adjusted EBITDA, debt net of cash is 4.9x trailing twelve-month results.

Open Text	1Q24	4Q23	3Q23	2Q23	1Q23	2023	2022	2021	2020
Cash from Ops	$47	$115	$337	$195	$132	$779	$982	$876	$955
Capital Spend	$38	$24	$31	$32	$36	$124	$93	$64	$73
Free Cash Flow	$10	$91	$306	$163	$96	$655	$889	$812	$882
Acquisitions	$9	$2	$5,656	$0	$0	$5,658	$874	$971	$1,383
Adj Free Cash Flow	$0	$89	-$5,350	$163	$96	-$5,003	$15	$811	-$501
Change in Debt	-$187	-$187	$3,916	$998	-$3	$4,725	$640	-$610	$1,436

- A huge portion of acquisitions was allocated to goodwill. That is $8.62 billion now. Other intangibles started at $5.5 billion and are now $3.9 billion. That nets to 75% of total assets and is 3x the equity balance. We believe it is difficult to justify goodwill for acquired software as having an eternal life. OTEX is expected to earn $4.75 – it is currently picking up 80 cents per year by not amortizing goodwill over 40 years, or $1.60 over 20 years. Also,look at how this has become a growing source of EPS as goodwill rose over time:

OTEX	2023	2022	2021	2020	2019	2018
Goodwill ($ bill)	$8.7	$5.2	$4.7	$4.7	$3.8	$3.6
EPS from Goodwill	$0.80	$0.48	$0.43	$0.43	$0.35	$0.33
Op. Income	$3.29	$3.22	$3.39	$2.89	$2.76	$2.56

What caught our eye is that over the last three years, not amortizing goodwill has added 37 cents to EPS. It added 32 cents last year and adjusted EPS only rose by 7 cents. It added 5 cents in 2022 and EPS declined.

- OTEX adds back the amortization of acquired intangibles. We did not see any intangibles that are not being amortized so that is good for a GAAP perspective. OTEX also uses a shorter amortization period than others with 6 years for technology and 8 years for customer-related intangibles. That is more conservative than Roper, for example. However, adding the cost back to non-GAAP earnings essentially says that these acquisitions had zero cost to OTEX. Last year, this was 62% of non-GAAP EPS. That EPS figure was only up 7 cents against the 51 cents in additional amortization being added:

OTEX	2023	2022	2021	2020	2019	2018
EPS from Amortiz	$2.03	$1.52	$1.59	$1.56	$1.38	$1.38

- OTEX also adds back share compensation. This is rising as a percentage of sales but remains very low for a tech company. We will only point out that a 1% change in this area is worth about 14 cents in adjusted EPS annually:

Open Text	1Q24	4Q23	3Q23	2Q23	1Q23	2023	2022	2021	2020
Revenue	$1,148	$1,491	$1,245	$897	$852	$4,485	$3,494	$3,386	$3,110
Share Comp	$37	$42	$36	$29	$23	$130	$70	$52	$30
Share Comp %	3.2%	2.8%	2.9%	3.2%	2.7%	2.9%	2.0%	1.5%	0.9%

- Because it is buying much of the R&D via acquisitions in our view, it is a pleasant surprise to see OTEX boosting R&D spending. It started on the low end of the scale of software companies at 12%, but is now running over 16%. Plus, the bulk of this is cash and does not impact adjusted EPS very much:

Open Text	1Q24	4Q23	3Q23	2Q23	1Q23	2023	2022	2021	2020
Revenue	$1,148	$1,491	$1,245	$897	$852	$4,485	$3,494	$3,386	$3,110
R&D	$234	$250	$211	$110	$110	$681	$440	$421	$370
Cash R&D	$223	$236	$200	$102	$103	$642	$423	$412	$365
R&D % Sales	20.4%	16.8%	16.9%	12.2%	12.9%	15.2%	12.6%	12.4%	11.9%
Cash % Sales	19.4%	15.9%	16.1%	11.4%	12.1%	14.3%	12.1%	12.2%	11.7%

- Another add-back to EPS is other income/losses. Much of this is derivatives, but there are equity investments that OTEX is involved with where it does not own the full company. We noticed that these swung from reasonable gains to losses. Adding back those losses is helping OTEX beat estimates too.

Open Text	1Q24	4Q23	3Q23	2Q23	1Q23	2023	2022	2021	2020
Equity Income	-$9.7	-$4.7	-$0.3	-$6.5	-$6.5	-$23.1	$58.7	$62.9	$8.7
Adj EPS	$0.03	$0.02	$0.00	$0.02	$0.02				

ANSYS, Inc. (ANSS)

ANSS is another company that frequently makes deals. It is still beating earnings estimates, but the size of beats has declined. Some of that is a result of weaker sales growth. It does have free cash flow even after recurring acquisitions. Debt and cash are almost a wash. There are several areas to watch within the adjustments. ANSYS adds back acquisition amortization, adjustments, stock-based compensation, and restructuring:

- Acquisitions occur nearly every quarter. Several are smaller deals that are almost immaterial. But, there are periods like 2019-21 where acquisitions consumed more than free cash flow. We would watch out for ANSS adding more large deals as that could impair the cash flow.

ANSS	3Q23	2Q23	1Q23	4Q22	3Q22	2022	2021	2020	2019
Cash from Ops	$161	$63	$261	$174	$127	$631	$550	$547	$500
CapX	$5	$5	$7	$9	$5	$24	$23	$35	$45
Free Cash Flow	$156	$58	$254	$165	$122	$607	$527	$512	$455
Acquisitions	$0	$77	$121	$144	$1	$386	$511	$572	$787
Adj. Free Cash	$156	-$20	$133	$21	$121	$220	$16	-$60	-$332
Change in Debt	$0	$0	$0	$0	$0	$0	-$45	$300	$441

- Goodwill is $3.77 billion now. The company is earning about $8.50-$9.00 in adjusted EPS per year. Lots of the earnings are the result of putting a high percentage of deal cost into goodwill. From 2019-2022, 71%-75% of the total deal cost was put into goodwill where it will not be expensed at all. If this was expensed over 40 years, it would cost ANSS $1.08 per year, or $2.16 on a 20-year basis.

- Intangible assets make up the bulk of the remaining deal cost allocation. The first thing that jumped out to us was that ANSS is amortizing acquired software over 9-11 years. That is among the highest lifespans we have seen. Internally developed software is often capitalized and amortized over 3-5 years. Many companies that expense acquired software use 5 years. We think that may open ANSS up to more risk of impairment. Also, it means that adjustments to non-GAAP EPS will continue longer.

  In 3Q23, ANSS reported $1.41 of non-GAAP EPS vs $0.64, which is a huge spread and indicates poor earnings quality. Amortization net of taxes was $0.25 or 18% of non-GAAP EPS. If they were using a faster amortization period of 5-6 years – the spread between GAAP and non-GAAP would likely be another 16-20 cents per quarter.

- R&D spending has been 20%-21% of sales for several years. It is ticking up in 2023 which we believe is due to both higher spending and weaker sales growth. The cash flow is there to support higher R&D spending if necessary. An incremental $5-$6 million per quarter does not look like a tough hurdle for ANSS – it would be a 4-cent headwind for EPS. Also, notice that the spread between total R&D and cash R&D has jumped from 3%

to 5% - that incremental 2% is being added back to non-GAAP EPS. Every extra 1% of R&D that gets added back due to it being paid with stock is 4 cents of non-GAAP EPS.

ANSS	3Q23	2Q23	1Q23	4Q22	3Q22	2022	2021	2020	2019
Sales	$459	$497	$509	$694	$473	$2,066	$1,907	$1,681	$1,516
R&D	$123	$125	$120	$111	$108	$434	$405	$355	$298
R&D Stock Comp	$22	$21	$17	$17	$17	$65	$62	$59	$47
cash R&D	$102	$104	$103	$94	$91	$369	$343	$297	$251
R&D %	26.9%	25.2%	23.6%	16.0%	22.9%	21.0%	21.2%	21.1%	19.7%
cash R&D %	22.1%	21.0%	20.2%	13.5%	19.2%	17.9%	18.0%	17.7%	16.6%

- Total stock compensation as a percentage of sales is showing a similar rising trend. Some of this is the R&D situation and some is the weaker sales growth not leveraging stock compensation. We know about $5 million of the jump is R&D, but total stock compensation is up $12-$14 million per quarter. Adding this back is helping non-GAAP EPS. Remember ANSS's earnings beats of late have been 14 cents and 8 cents as this ratio has jumped considerably.

ANSS	3Q23	2Q23	1Q23	4Q22	3Q22	2022	2021	2020	2019
Sales	$459	$497	$509	$694	$473	$2,066	$1,907	$1,681	$1,516
stock Comp	$58	$56	$44	$46	$47	$168	$166	$146	$116
stock Comp %	12.7%	11.3%	8.7%	6.6%	9.9%	8.1%	8.7%	8.7%	7.7%

Tyler Technologies, Inc. (TYL)

TYL regularly makes small acquisitions and the occasional large one. What caught our eye is that a huge amount of acquisition cost is assigned to goodwill. Plus, R&D looks low but is 100% cash – there is no allocation of stock compensation to R&D – which is largely salaries and benefits. Ignoring stock compensation, amortization, and goodwill still outweigh the positives we see in R&D reporting. The focus on debt retirement in cash flow shows that acquisitions do indeed have a cash cost too.

- Cash flow looks sustainable. TYL's capital spending and software spending look normal and free cash flow is solid in periods without an acquisition. For a $17 billion company, TYL doesn't have free cash flow if it makes a deal for anything over about $300 million. The company does devote free cash flow to retiring debt after deals – which should continually remind investors that acquisitions are not free.

TYL	3Q23	2Q23	1Q23	4Q22	3Q22	2022	2021	2020	2019
Cash from Ops	$178	-$19	$75	$122	$129	$382	$372	$355	$255
CapX	$6	$4	$2	$5	$5	$23	$34	$23	$37
Software	$9	$10	$9	$2	$9	$28	$22	$6	$5
Free Cash Flow	$163	-$33	$64	$115	$116	$331	$316	$327	$213
Acquisitions	$34	$0	$2	$46	$0	$164	$2,090	$1	$219
Adj. Free Cash	$129	-$33	$62	$69	$115	$168	-$1,774	$325	-$6
Change in Debt	-$135	$0	-$120	-$90	-$190	-$360	$1,355	$0	$0

- TYL has $2.5 billion in goodwill which is 54% of total assets and 88% of equity. If it had to amortize it over 40 years, it would cost TYL $1.46 per year, or $3.92 per year if amortized over 20 years. Estimates call for TYL to earn $7.77 in non-GAAP EPS so amortizing goodwill would take away as much as half of TYL's income. The most recent large deal in 2021 for NIC assigned 62% of the price to goodwill.

- Other intangibles are being expensed in GAAP earnings. However, TYL has stretched out the estimate for the life of customer-related assets - the largest part of intangibles. In earlier deals, this was being amortized over 15 years, and now it is 20. This results in less amortization being added back to non-GAAP earnings. This may result in slightly higher-quality non-GAAP earnings, but TYL will get the non-GAAP benefit for longer. This is still about 25% of TYL's EPS. It was 50 cents of the $2.14 of non-GAAP EPS in 3Q23 and $1.50 for the $5.90 posted YTD.

- R&D looks low and dipped as a percentage of sales in recent years. This coincides with the NIC deal in 2021. We are pleasantly surprised that TYL does not report any stock compensation for R&D. All its spending for R&D impacts both GAAP and non-GAAP, which is conservative. If we look at the free cash flow table above, TYL could afford higher R&D if needed:

TYL	3Q23	2Q23	1Q23	4Q22	3Q22	2022	2021	2020	2019
Sales	$495	$504	$472	$452	$473	$1,850	$1,592	$1,117	$1,086
R&D	$28	$28	$27	$34	$25	$105	$94	$88	$81
% of sales	5.7%	5.6%	5.7%	7.5%	5.3%	5.7%	5.9%	7.9%	7.5%

- Stock compensation is dipping down a bit too. This is a positive trend worth watching. While it looks small at only $27 million in 3Q, stock compensation is essentially equal in size to the amount of intangible asset amortization being added back. So this is still about 25% of TYL's income.

TYL	3Q23	2Q23	1Q23	4Q22	3Q22	2022	2021	2020	2019
Sales	$495	$504	$472	$452	$473	$1,850	$1,592	$1,117	$1,086
Stock Comp	$27	$27	$28	$25	$27	$105	$108	$71	$62
% of sales	5.5%	5.3%	6.0%	5.6%	5.7%	5.7%	6.8%	6.3%	5.7%

Manhattan Associates, Inc. (MANH)

In our view, MANH represents one of the higher-quality companies in the software group. It has made acquisitions in its history but the last one was in 2005. It has goodwill of $62.6 million, which is 11% of assets and 30% of equity. The acquired intangibles were amortized over 5-7 years which is very conservative. The only adjustment it makes to non-GAAP EPS is adding back stock compensation net of the related payroll taxes. There is no financed debt, and the largest consumption of cash is related to repurchasing shares. The stock is not cheap, but the earnings quality looks high, and free cash flow does not appear to have many accounting-related headwinds it could not handle.

- Free cash flow is strong in our view with no acquisitions. Without debt to service either, the free cash flow supports a hefty repurchase program. MANH is awarding new shares as well, but it is nice to see the share count declining even at a small rate. That may be the largest risk – much of the free cash flow is spoken for with repurchases. If MANH needs to boost spending elsewhere, the cash may be diverted from repurchases. However, in the larger picture, the repurchases for 3Q23 added only 1.4 cents to the reported $1.05 per share. If repurchase cash was partially diverted to other growth areas – it may offset the share count not declining.

MANH	3Q23	2Q23	1Q23	4Q22	3Q22	2022	2021	2020	2019
Cash from Ops	$59	$41	$59	$55	$40	$129	$111	$141	$147
CapX	$1	$1	$1	$2	$2	$7	$4	$3	$15
Free Cash Flow	$57	$40	$58	$53	$38	$122	$107	$138	$132
Stock Repos	$27	$67	$102	$25	$51	$204	$120	$44	$122
Shares	62.3	62.4	62.8	63.0	63.2	63.4	64.3	64.3	65.1

- Another positive is MANH's only adjustment is not a big percentage of sales. Stock compensation has increased from just over 5% to 8% of sales. That still compares to others in the group that are double to triple that level. Every 1% of sales is worth about 3 cents in EPS per quarter so this is still worth watching.

MANH	3Q23	2Q23	1Q23	4Q22	3Q22	2022	2021	2020	2019
Sales	$238	$231	$221	$198	$198	$767	$664	$586	$618
Stock Comp	$19	$18	$17	$15	$15	$59	$43	$33	$32
% of sales	8.0%	7.8%	7.5%	7.6%	7.3%	7.7%	6.5%	5.7%	5.2%

- R&D spending is rising with sales which we consider a positive as well. It is holding at about 14% of sales. More importantly, the amount being paid in stock is only $4 million per quarter. When we look at the amount of free cash flow, that would not be a hardship for MANH to boost cash spending if necessary. However, because it does not have many shares outstanding - $4 million in additional cash R&D would hurt adjusted EPS by 6 cents.

MANH	3Q23	2Q23	1Q23	4Q22	3Q22	2022	2021	2020	2019
Sales	$238	$231	$221	$198	$198	$767	$664	$586	$618
R&D	$33	$32	$31	$27	$29	$112	$98	$84	$88
% of sales	13.9%	13.7%	13.9%	13.7%	14.8%	14.6%	14.7%	14.4%	14.2%
R&D in Stock	$4	$4	$4	$3	$3	$13	$9	$7	$6
% of sales	1.7%	1.7%	1.6%	1.7%	1.6%	1.7%	1.3%	1.2%	1.0%

- Does capital spending need to rise again at some point? Net PP&E has declined, and capital spending has too. MANH has picked up a small tailwind from falling depreciation. We would not be surprised to see all of those figures reverse. But again, the level of free cash flow should be able to comfortably absorb that.

MANH	3Q23	2Q23	1Q23	4Q22	3Q22	2022	2021	2020	2019
Net PP&E	$11	$12	$12	$13	$12	$13	$14	$18	$23
Capex	$1	$1	$1	$2	$2	$7	$4	$3	$15

- We don't want to forget that there is goodwill from years 2000 and 2005. Not amortizing the $66.2 million is only giving MANH 0.6 cents per quarter on a 40-year amortization period, or 1.2 cents on a 20-year period. That compares to guidance for adjusted EPS of $3.53. That also looks immaterial.

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