Top 100 SaaS Companies Survey:

CAPITALIZATION OF DEVELOPMENT COSTS AND SALES COMMISSIONS

AN ARMANINO WHITE PAPER

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TOP 100 SAAS COMPANIES SURVEY: CAPITALIZATION OF DEVELOPMENT COSTS AND SALES COMMISSIONS

Sales commissions and software/app/website development are often the top two expenditures for SaaS companies, so CFOs need to continually evaluate the accounting treatment of these costs. Our annual SaaS survey provides a useful tool to gauge how your organization compares to its peers in these key areas.

The 2019 survey includes the top 100 publicly traded SaaS companies (ranked in terms of market cap). We collected the survey information from participants' most recent 10-Ks, reflecting data for fiscal years ending in calendar year 2018. This year, in addition to looking at capitalization over time, we also looked at capitalization by revenue.

At a high level, the survey results show that the percentage of companies capitalizing commissions paid to sales professionals rose sharply, tripling compared to our survey two years ago (66% in 2019 versus 22% in 2017).[1] This is not surprising, given that the new revenue recognition rules (ASC 606) took effect for public companies in 2018. The percentage of companies capitalizing development costs, which are not impacted by ASC 606, increased slightly during this same period.

At a December 2019 conference, Tracey Golden, Vice Chairman of the American Institute of CPAs, remarked that intangible or digital assets represent a growing (and often the largest) asset of many technology companies. It's interesting to note that the accounting for capitalized software costs doesn't seem to reflect this economic reality, as such costs are typically not among the largest assets on a company's balance sheet, as opposed to acquired software costs.

[1] We elected not to publish a survey in 2018 because 2017 was a crossover year for the transition to ASC 606, which skewed the 2017 fiscal year-end data.

GAAP RULES

For reference, here are the rules specific to development cost and commissions capitalization.

Development Cost Capitalization

SaaS development costs are subject to “internal use” software capitalization rules, which typically have a longer window of time for eligible costs to be capitalized, versus the “external use” rules for software licensing companies. Brief summaries of the applicable FASB rules are shown in the table below:

SaaS		
Internal Use Software	*Subtopic 350-40*	Capitalization of costs begins when the preliminary project stage is completed, management has committed to funding the project, and it is probable that the project will be completed and the software will be used to perform the function intended. Capitalization ceases at the point in which the project is substantially complete and is ready for its intended purpose.
Website Development Costs	*Subtopic 350-50*	Costs incurred to purchase software tools, or costs incurred during the application development stage for internally developed tools, shall be capitalized.

Traditional Software License		
Costs of Software to Be Sold, Leased, or Marketed	*Subtopic 985-20*	Development costs of software to be sold, leased, or otherwise marketed are subject to capitalization beginning when technological feasibility has been established and ending when the product is available for general release.

Commissions Capitalization

The new revenue recognition standard (ASC 606) mandates that companies capitalize sales commissions if such costs are expected to be recovered through future revenues, unless the amortization period is one year or less. The capitalization of costs incremental to obtaining a contract and determining the period of amortization is one of the most significant areas affected by the new standard, as companies no longer have the option to immediately “expense as you go.”

Capitalization Over Time

Sales Commissions

ASC 606 changed the game in 2018, effectively mandating that companies capitalize commissions, if material. As a result, the rate of capitalization in 2019 (66%) tripled compared to the 2017 survey (22%). Companies that didn't disclose commissions capitalized (either claimed commissions were immaterial or were related to deals of less than one year) represented 34% of companies surveyed — a surprisingly high number given that most SaaS companies pay significant commissions, and sales teams typically focus on multi-year deals.

Development Costs

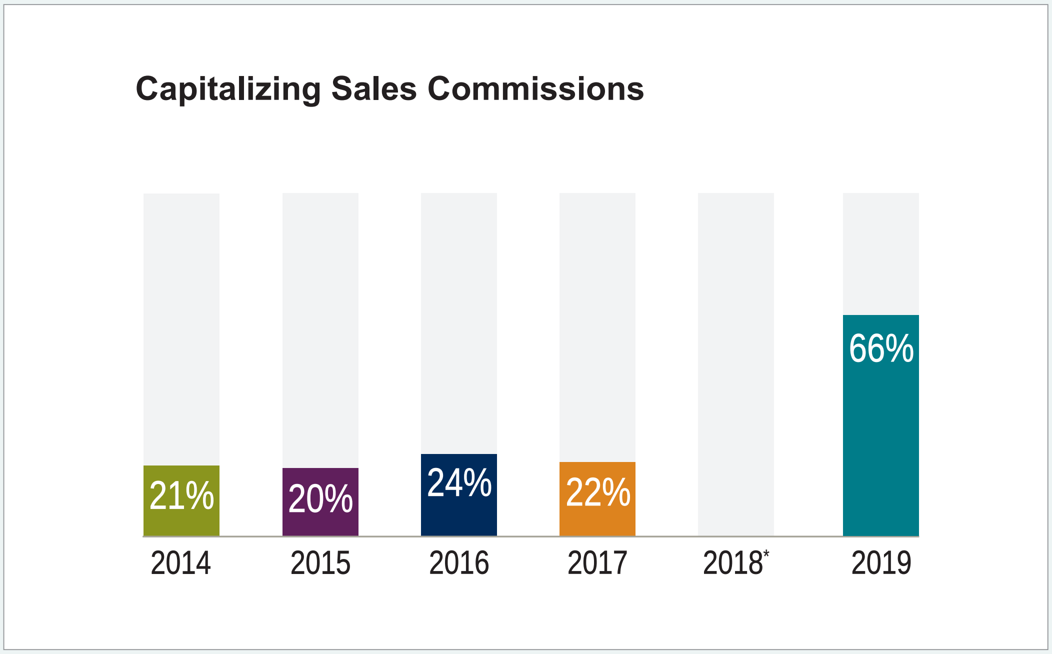
The percentage of companies capitalizing software development costs increased moderately in 2019, continuing a multi-year trend. Given the apparent diversity in capitalization shown in the survey, this may be an area where auditors/regulators should seek to enforce greater consistency.

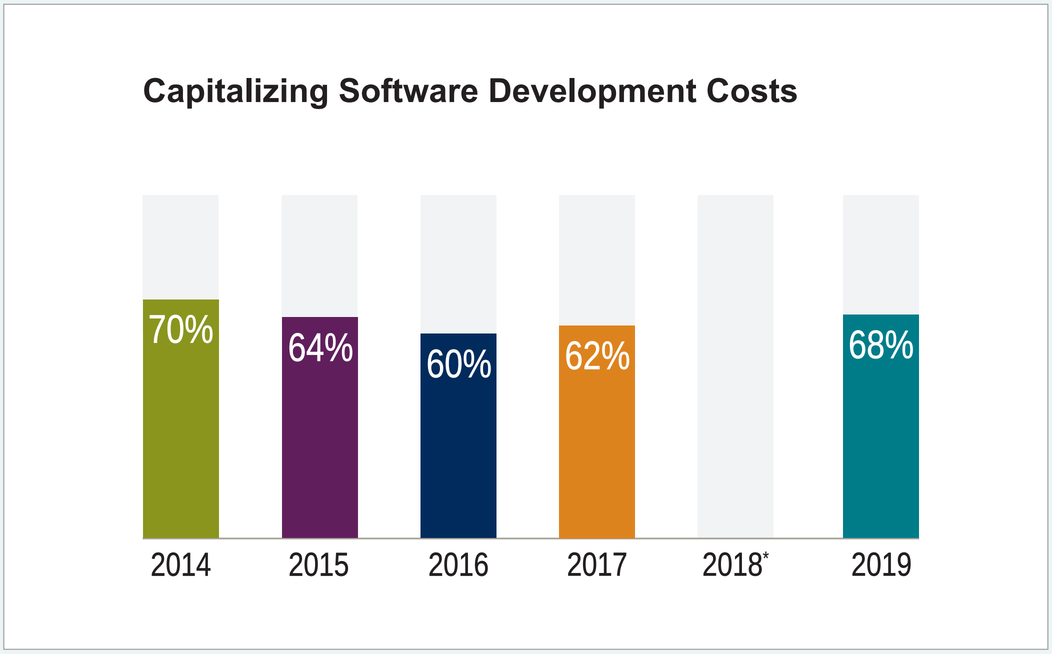
Mark Elchinoff, CFO of NGINX (acquired by F5 for $700 million in 2019), says that many smaller companies capitalize software but have been dissuaded by their auditors from actually putting a number on the balance sheet. He believes better guidelines and more uniform adoption are required.

"Given the valuations at which software companies are being acquired, the actual software that target companies have developed has substantial value, beyond goodwill, and should be reflected on the balance sheet of all companies that develop software," says Elchinoff.[2] "There just needs to be consistency in the approach to capitalizing, amortizing and write-offs for impairment."

John Nolan, CFO of iControl Data, sees the most interesting impact of software capitalization in how it reduces gross margin through amortization included in cost of sales, whereas companies electing to immediately expense such costs see improved margin offset by larger R&D expense. He believes regulators and auditors should focus on additional disclosure around "the amount of software amortization included in cost of sales each period."

[2] Even if reflected on the balance sheet at cost (i.e. book value) this likely will not equal fair value.





*We elected not to publish a survey in 2018 because 2017 was a crossover year for the transition to ASC 606.

Capitalization By Revenue

This year we also sorted the firms by revenue into four brackets, with 25 firms in each bracket: $0-$150M, $150M-$400M, $400M-$1.15B, and over $1.15B.

Development Cost Capitalization

The data shows that companies with higher revenue tend to capitalize software development costs more often than companies with lower revenue. For example, in the $0-$150M revenue range, 56% of the companies capitalized software development costs, while in the over $1.15B revenue range, 72% of companies did so.

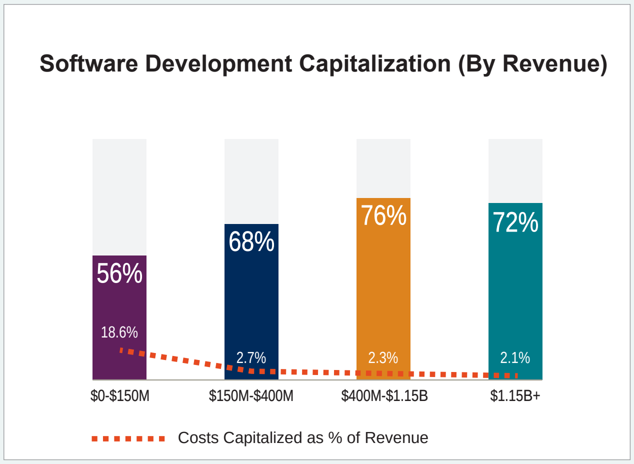
The amount of software development costs capitalized, relative to revenue, is lower for companies with higher revenue. For example, the average percent of capitalized software development costs relative to revenue decreases from 18.6% to 2.1% as companies' revenue increases.

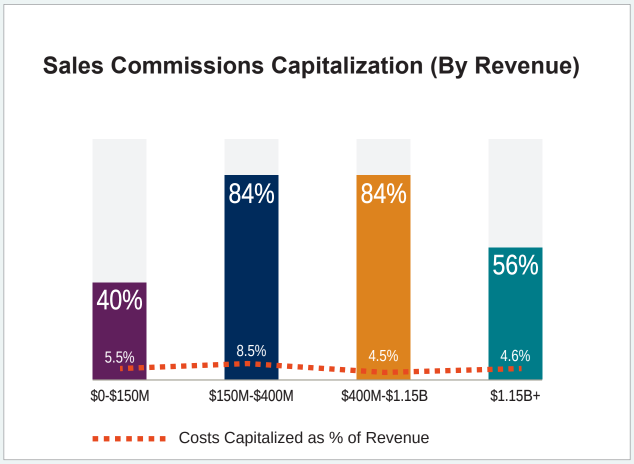
This is because the absolute amount of capitalized software development costs is higher for companies with higher revenue, but their relative amount of capitalized software development to revenue becomes lower.

Commission Capitalization

Companies with mid-to-higher revenue also tend to capitalize sales commission costs more often than companies with lower revenue. For example, in the $0-$150M revenue range, 40% of companies capitalized commission costs, while in the over $1.15B revenue range, 56% of companies did so. Capitalization is highest in companies in the $150M-$1.15B revenue range, with 84% capitalizing sales commissions.

The amount of commission costs capitalized relative to revenue is relatively steady across the revenue range, at roughly 5%, except for firms in the $150M-$400M range, where it is 8.5%.





Revenue Range	Companies Capitalizing	% of Companies Capitalizing Software Development	Costs Capitalized as % of Revenue
$0-$150M	14 out of 25	56%	18.6%
$150M-$400M	17 out of 25	68%	2.7%
$400M-$1.15B	19 out of 25	76%	2.3%
$1.15B+	18 out of 25	72%	2.1%

Revenue Range	Companies Capitalizing	% of Companies Capitalizing Sales Commissions	Costs Capitalized as % of Revenue
$0-$150M	10 out of 25	40%	5.5%
$150M-$400M	21 out of 25	84%	8.5%
$400M-$1.15B	21 out of 25	84%	4.5%
$1.15B+	14 out of 25	56%	4.6%

Auditor Correlation to Costs Capitalized

This year we also analyzed capitalization practices based on the company's auditor. The data showed a wide disparity in practices based on the audit firm.

Of the 100 companies surveyed, 73 used Big 4 auditors. The tables below show the capitalization practices of companies for each Big 4 auditor, and for the 27 companies that did not use a Big 4 audit firm.

Auditor	% of Companies That Capitalize Development Costs	# of Companies
Deloitte	64%	11
EY	58%	26
KPMG	95%	19
PWC	71%	17
Others	59%	27
TOTAL	68%	100

Auditor	% of Companies That Capitalize Commissions	# of Companies
Deloitte	73%	11
EY	81%	26
KPMG	63%	19
PWC	82%	17
Others	41%	27
TOTAL	66%	100

FINAL THOUGHTS

In light of the survey findings and the new ASC 606 standard, SaaS companies should continuously evaluate their decisions on capitalizing software development and commission costs, as there are several short- and long-term implications. They should also consult with their auditors and, ultimately, adopt the method they believe most closely aligns with the intent of the rules.

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APPENDIX

#	Company Name	Ticker Symbol	Auditor	Capitalize Software or Website Development Costs?	Capitalize Commisions?	YE Date	Revenue, Current Year (CY)	Software Dev. Costs Capitlazied on Balance Sheet (BS)	Software Dev. Costs Capitlaized (CY)	Amortization Expense of Software Development Costsc (CY)	NET Commissions Capitlaized (BS)	Commissions Deferred/ Capitalized (CY)	Commissions Ammortized (CY)
1	3D SYSTEMS CORP	DDD	Others	Yes	Yes	12/31/18	$ 687,660	$18,357	ND	ND	ND	ND	ND
2	ACI WORLDWIDE, INC.	ACIW	Deloitte	Yes	Yes	12/31/18	$ 1,009,780	ND	ND	ND	$13,000	ND	$8,400
3	Activision Blizzard, Inc.	ATVI	PWC	Yes	No	12/31/18	$ 7,500,000	$329,000	$377,000	$501,000	N/A	N/A	N/A
4	Alarm.com Holdings, Inc.	ALRM	PWC	Yes	Yes	12/31/18	$ 420,494	$5,072	$4,229	$800	$2,881	$4,864	$1,983
5	Altair Engineering Inc.	ALTR	EY	No	Yes	12/31/18	$ 396,379	N/A	N/A	N/A	$2,200	ND	$300
6	Alteryx, Inc.	AYX	Deloitte	No	Yes	12/31/18	$ 253,570	N/A	N/A	N/A	ND	ND	$18,500
7	Amber Road, Inc.	AMBR	KPMG	Yes	Yes	12/31/18	$ 85,166	$15,301	$3,215	$1,801	$13,116	$4,509	$4,176
8	AMERICAN SOFTWARE INC	AMSWA	KPMG	Yes	No	4/30/18	$ 112,703	$9,728	$4,804	$3,690	ND	ND	ND
9	ANSYS INC	ANSS	Deloitte	No	No	12/31/18	$ 1,293,636	N/A	N/A	N/A	N/A	N/A	N/A
10	APPFOLIO INC	APPF	PWC	Yes	Yes	12/31/18	$ 190,071	$20,485	$13,800	$11,000	$1,825	ND	ND
11	APPIAN CORP	APPN	Others	No	Yes	12/31/18	$ 226,743	N/A	N/A	N/A	$29,100	$23,200	$15,600
12	AUDIOEYE INC	AEYE	Others	Yes	Yes	12/31/18	$ 5,660	$1,410	$405	$143	$270	$293	$103
13	AUTODESK INC	ADSK	EY	No	Yes	1/31/19	$ 2,566,000	N/A	N/A	N/A	$93,000	ND	$108,800
14	AVID TECHNOLOGY, INC.	AVID	Others	Yes	No	12/31/18	$ 413,282	ND	$4,500	$2,500	N/A	N/A	N/A
15	AWARE INC /MA/	AWRE	Others	No	No	12/31/18	$ 16,131	N/A	N/A	N/A	N/A	N/A	N/A
16	Bandwidth Inc.	BAND	EY	Yes	No	12/31/18	$ 204,113	$16,293	$776	$1,801	N/A	N/A	N/A
17	**Benefitfocus,Inc.**	BNFT	EY	Yes	Yes	12/31/18	$ 258,721	$36,713	$10,033	$3,944	$7,506	$4,347	$4,217
18	BLACKBAUD INC	BLKB	PWC	Yes	Yes	12/31/18	$ 848,606	$75,099	$37,601	$16,600	$85,590	$43,978	$35,700
19	BLACKLINE, INC.	BL	PWC	Yes	Yes	12/31/18	$ 227,788	$9,023	$6,099	$3,900	ND	ND	$23,600
20	BOTTOMLINE TECHNOLOGIES INC /DE/	EPAY	EY	Yes	No	6/30/18	$ 394,096	$13,262	$3,181	$2,800	N/A	N/A	N/A
21	BOX INC	BOX	EY	Yes	Yes	1/31/19	$ 608,386	ND	$3,500	ND	$75,563	$66,944	$17,300
22	Bridgeline Digital, Inc.	BLIN	Others	Yes	No	9/30/18	$ 13,568	ND	$15	ND	N/A	N/A	N/A
23	CADENCE DESIGN SYSTEMS INC	CDNS	KPMG	Yes	Yes	12/29/18	$ 2,138,022	ND	$3,600	ND	$31,200	$57,700	$26,500
24	Carbon Black, Inc.	CBLK	PWC	Yes	Yes	12/31/18	$ 209,724	$4,298	$2,319	$589	$38,154	$20,955	$12,756
25	Ceridian HCM Holding Inc.	CDAY	KPMG	Yes	No	12/31/18	$ 746,400	$62	$32	$26	N/A	N/A	N/A
26	CHANNELADVISOR CORP	ECOM	EY	Yes	Yes	12/31/18	$ 131,218	$16,239	$900	ND	$15,209	$9,804	$3,316
27	CITRIX SYSTEMS INC	CTXS	EY	Yes	Yes	12/31/18	$ 2,973,903	$433,033	$14,800	$25,900	$109,200	ND	$38,100
28	**Cloudera, Inc.**	CLDR	EY	No	Yes	1/31/19	$ 479,941	N/A	N/A	N/A	$60,000	$21,600	$30,600
29	COMMVAULT SYSTEMS INC	CVLT	EY	No	Yes	3/31/19	$ 710,957	N/A	N/A	N/A	$33,619	$17,875	$17,348
30	**Coupa Software Inc**	COUP	EY	Yes	Yes	1/31/19	$ 260,366	$23,444	$6,870	$3,100	$26,228	$15,341	$5,800
31	DETERMINE, INC.	DTRM	Others	Yes	No	3/31/18	$ 28,119	$2,994	$2,353	$1,700	N/A	N/A	N/A
32	DROPBOX, INC.	DBX	EY	No	Yes	12/31/18	$ 1,391,700	N/A	N/A	N/A	$52,800	$32,000	$12,100
33	**EGAIN Corp**	EGAN	Others	No	Yes	6/30/18	$ 61,307	N/A	N/A	N/A	$1,877	$1,460	$967
34	ELECTRONIC ARTS INC.	EA	KPMG	Yes	No	3/31/18	$ 5,150,000	$35,000	$3,000	$9,000	N/A	N/A	N/A
35	**Endurance International Group Holdings, Inc.**	EIGI	Others	Yes	Yes	12/31/18	$ 1,145,291	$82,618	$83,507	$103,148	$83,930	$135,488	$51,558
36	EVERBRIDGE, INC.	EVBG	KPMG	Yes	Yes	12/31/18	$ 147,094	$12,893	$8,788	$5,900	$10,265	$15,737	$5,472
37	GLOBALSCAPE INC	GSB	Others	Yes	Yes	12/31/18	$ 34,416	$3,133	$1,276	$1,929	$1,009	$674	$905
38	**Guidewire Software, Inc.**	GWRE	KPMG	Yes	No	7/31/18	$ 661,067	$3,978	$3,313	$400	N/A	N/A	N/A
39	HUBSPOT INC	HUBS	PWC	Yes	Yes	12/31/18	$ 512,980	$12,746	$13,186	$9,200	$41,778	$48,435	$20,000
40	**Inspired Entertainment, Inc.**	INSE	Others	Yes	No	12/31/18	$ 141,381	$39,998	$54,423	$60,858	N/A	N/A	N/A
41	INSTRUCTURE INC	INST	EY	Yes	Yes	12/31/18	$ 209,544	$22,181	$11,989	$4,563	$19,630	$11,472	$10,088
42	Intellicheck, Inc.	IDN	Others	No	No	12/31/18	$ 4,433	N/A	N/A	N/A	N/A	N/A	N/A

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43	INTELLIGENT SYSTEMS CORP	INS	Others	No	No	12/31/18	$ 20,100	N/A	N/A	N/A	N/A	N/A	N/A
44	INTUIT INC	INTU	EY	Yes	No	7/31/18	$ 5,964,000	$86,000	ND	ND	N/A	N/A	N/A
45	LogMeIn, Inc.	LOGM	Deloitte	Yes	Yes	12/31/18	$ 1,203,992	ND	$1,600	ND	$64,900	ND	$20,600
46	Majesco	MJCO	Others	No	No	3/31/19	$ 139,860	N/A	N/A	N/A	N/A	N/A	N/A
47	MAM SOFTWARE GROUP, INC.	MAMS	Others	Yes	No	6/30/18	$ 35,777	ND	$1,500	ND	N/A	N/A	N/A
48	MANHATTAN ASSOCIATES INC	MANH	EY	No	Yes	12/31/18	$ 559,157	N/A	N/A	N/A	$3,500	ND	ND
49	**Medidata Solutions, Inc.**	MDSO	Deloitte	Yes	Yes	12/31/18	$ 635,696	ND	$23,400	ND	$6,000	$4,400	$2,090
50	MICROSOFT CORP	MSFT	Deloitte	Yes	No	6/30/18	$ 110,360,000	ND	ND	$54,000	N/A	N/A	N/A
51	MICROSTRATEGY Inc	MSTR	KPMG	Yes	Yes	12/31/18	$ 497,638	ND	ND	$2,499	$4,200	$2,000	$2,300
52	MOBILEIRON, INC.	MOBL	Deloitte	No	Yes	12/31/18	$ 193,192	N/A	N/A	N/A	$17,331	ND	ND
53	MongoDB, Inc.	MDB	PWC	No	Yes	1/31/19	$ 267,016	N/A	N/A	N/A	$48,600	$30,200	$14,100
54	MTBC, Inc.	MTBC	Others	Yes	Yes	12/31/18	$ 50,546	ND	$62,000	ND	$93	ND	$60
55	NATIONAL INSTRUMENTS CORP	NATI	EY	Yes	No	12/31/18	$ 1,359,132	$74,543	$15,197	$27,000	N/A	N/A	N/A
56	NETSOL TECHNOLOGIES INC	NTWK	Others	No	No	6/30/18	$ 60,930	N/A	N/A	N/A	N/A	N/A	N/A
57	NEW RELIC, INC.	NEWR	Deloitte	Yes	Yes	3/31/19	$ 479,225	$10,600	$5,100	$4,100	$40,600	ND	$25,900
58	**Nuance Communications, Inc.**	NUAN	Others	Yes	No	9/30/18	$ 2,051,661	$14,500	ND	$11,000	N/A	N/A	N/A
59	**Nutanix, Inc.**	NTNX	Deloitte	No	Yes	7/31/18	$ 1,155,457	N/A	N/A	N/A	$114,379	$40,852	ND
60	Okta, Inc.	OKTA	EY	Yes	Yes	1/31/19	$ 399,254	$9,869	$8,576	$9,969	$41,300	$35,200	$20,900
61	ORACLE CORP	ORCL	EY	No	Yes	5/31/19	$ 39,506,000	N/A	N/A	N/A	ND	ND	ND
62	**Paycom Software, Inc.**	PAYC	Others	Yes	Yes	12/31/18	$ 566,336	$22,000	$18,700	$12,500	$158,989	$51,858	$19,076
63	**Paylocity Holding Corp**	PCTY	KPMG	Yes	No	6/30/18	$ 377,527	$21,094	$18,000	$14,300	N/A	N/A	N/A
64	PROGRESS SOFTWARE CORP /MA	PRGS	Deloitte	Yes	No	11/30/18	$ 397,165	ND	ND	$200	N/A	N/A	N/A
65	PTC INC.	PTC	PWC	Yes	No	9/30/18	$ 1,241,824	ND	ND	ND	N/A	N/A	N/A
66	QAD INC	QADA	KPMG	Yes	Yes	1/31/19	$ 333,016	$1,598	$1,208	$600	$11,000	$4,500	$3,600
67	QUALYS, INC.	QLYS	Others	Yes	Yes	12/31/18	$ 278,889	ND	$1,300	ND	$6,172	$3,849	$1,200
68	**Qumu Corp**	QUMU	KPMG	No	Yes	12/31/18	$ 25,013	N/A	N/A	N/A	$560	ND	ND
69	**Rapid7, Inc.**	RPD	KPMG	Yes	Yes	12/31/18	$ 244,091	$3,400	$3,300	$1,000	$39,995	$22,765	$9,975
70	REALPAGE INC	RP	EY	Yes	Yes	12/31/18	$ 869,480	$43,000	$17,400	$11,900	$14,500	ND	$5,400
71	Red Violet, Inc.	RDVT	Others	Yes	No	12/31/18	$ 16,302	$19,971	$6,348	$1,730	N/A	N/A	N/A
72	ROSETTA STONE INC	RST	Deloitte	Yes	Yes	12/31/18	$ 173,634	ND	$15,900	ND	$18,530	$23,758	$23,000
73	**Sailpoint Technologies Holdings, Inc.**	SAIL	Others	No	Yes	12/31/18	$ 248,920	N/A	N/A	N/A	$28,043	$29,847	$7,753
74	SALESFORCE COM INC	CRM	EY	Yes	Yes	1/31/19	$ 13,282,000	$152,000	ND	ND	$2,000,000	$1,000,000	$700,000
75	**SecureWorks Corp**	SCWX	PWC	No	Yes	2/2/19	$ 518,709	N/A	N/A	N/A	$62,895	$19,915	$14,319
76	ServiceNow, Inc.	NOW	PWC	No	Yes	12/31/18	$ 2,608,816	N/A	N/A	N/A	$422,380	$231,843	$143,358
77	SHOTSPOTTER, INC	SSTI	Others	No	Yes	12/31/18	$ 34,753	N/A	N/A	N/A	$2,189	$2,689	$500
78	SMITH MICRO SOFTWARE, INC.	SMSI	Others	No	No	12/31/18	$ 26,285	N/A	N/A	N/A	N/A	N/A	N/A
79	**SolarWinds Corp**	SWI	PWC	Yes	No	12/31/18	$ 833,089	$5,000	$2,800	$2,500	N/A	N/A	N/A
80	SPLUNK INC	SPLK	PWC	No	Yes	1/31/19	$ 1,803,010	N/A	N/A	N/A	$142,989	$130,485	$77,867
81	SPS COMMERCE INC	SPSC	KPMG	Yes	Yes	12/31/18	$ 248,240	$455	$455	$0	$45,475	$49,583	$44,041
82	**Square, Inc.**	SQ	KPMG	Yes	No	12/31/18	$ 3,298,177	$58,908	$34,445	$10,600	N/A	N/A	N/A
83	SS&C Technologies Holdings Inc	SSNC	PWC	Yes	Yes	12/31/18	$ 3,421,100	$42,600	$38,200	$7,700	ND	ND	ND
84	SYMANTEC CORP	SYMC	KPMG	Yes	Yes	3/30/19	$ 4,731,000	$104,000	ND	ND	$185,000	$156,000	$100,000

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85	SYNOPSYS INC	SNPS	KPMG	Yes	No	10/31/18	$ 3,121,058	$3,124	$2,949	$3,599	N/A	N/A	N/A
86	**Tableau Software Inc**	DATA	PWC	No	Yes	12/31/18	$ 1,155,352	N/A	N/A	N/A	$51,401	$37,528	$11,616
87	TAKE TWO INTERACTIVE SOFTWARE INC	TTWO	EY	Yes	No	3/31/19	$ 2,668,394	$621,557	$302,783	$342,870	N/A	N/A	N/A
88	Tenable Holdings, Inc.	TENB	EY	Yes	Yes	12/31/18	$ 267,360	ND	$2,400	ND	$59,434	$29,075	$19,817
89	TERADATA CORP /DE/	TDC	PWC	Yes	Yes	12/31/18	$ 2,164,000	$72,000	ND	$7,000	$54,000	$44,000	$7,000
90	TWILIO INC	TWLO	KPMG	Yes	Yes	12/31/18	$ 650,067	$19,546	$15,266	$13,000	$2,396	$3,027	$1,349
91	TYLER TECHNOLOGIES INC	TYL	EY	No	Yes	12/31/18	$ 935,282	N/A	N/A	N/A	$21,900	$18,200	$15,600
92	ULTIMATE SOFTWARE GROUP INC	ULTI	KPMG	Yes	Yes	12/31/18	$ 1,140,544	$234,531	$66,338	$9,900	$156,850	ND	ND
93	**Upland Software, Inc.**	UPLD	EY	No	Yes	12/31/18	$ 149,885	N/A	N/A	N/A	ND	$4,775	$2,367
94	VARONIS SYSTEMS INC	VRNS	EY	No	Yes	12/31/18	$ 270,288	N/A	N/A	N/A	$8,055	$14,024	$13,185
95	VEEVA SYSTEMS INC	VEEV	KPMG	Yes	Yes	1/31/19	$ 862,210	ND	$1,378	$704	$30,900	$19,000	$18,400
96	VMWARE, INC.	VMW	PWC	Yes	Yes	2/1/19	$ 8,974,000	ND	ND	ND	$756,000	$379,000	$261,000
97	Where Food Comes From, Inc.	WFCF	Others	Yes	No	12/31/18	$ 17,804	$1,299	$597	$222	N/A	N/A	N/A
98	WORKIVA INC	WK	EY	No	Yes	12/31/18	$ 244,344	N/A	N/A	N/A	$18,747	ND	$10,100
99	WORLDS INC	WDDD	Others	No	No	12/31/18	$ 100	N/A	N/A	N/A	N/A	N/A	N/A
100	Zedge, Inc.	ZDGE	Others	Yes	No	7/31/18	$ 10,833	$8,103	ND	ND	N/A	N/A	N/A

#	Company	Notes on Capitalization of Software Development	Notes on Capitalization of Commissions
1	3D SYSTEMS CORP	Footnotes have no discussion of capitalization of SW development	The Company generally expenses sales commissions when incurred because the amortization period would be one year or less. These costs are recorded within selling, general and administrative expenses.
2	ACI WORLDWIDE, INC.	Software may be for internal use or available for sale. Costs related to certain software, which is available for sale, are capitalized in accordance with Accounting Standards Codification (“ASC”) 985-20, Costs of Software to be Sold, Leased, or Marketed, when the resulting product reaches technological feasibility. The Company generally determines technological feasibility when it has a detailed program design that takes product function, feature and technical requirements to their most detailed, logical form and is ready for coding. The Company does not typically capitalize costs related to software available for sale as technological feasibility generally coincides with general availability of the software. The Company capitalizes the costs of software developed or obtained for internal use in accordance with ASC 350-40, Internal Use Software. The Company expenses all costs incurred during the preliminary project stage of its development and capitalizes the costs incurred during the application development stage. Costs incurred relating to upgrades and enhancements to the software are capitalized if it is determined that these upgrades or enhancements add additional functionality to the software. Costs incurred during the application development stage include purchased software licenses, implementation costs, consulting costs, and payroll-related costs for projects that qualify for capitalization. All other costs, primarily related to maintenance and minor software fixes, are expensed as incurred. Amortization of software costs to be sold or marketed externally is determined on a product-by-product basis and begins when the product is available for licensing to customers. The annual amortization shall be the greater of the amount computed using (a) the ratio of current gross revenues for a product to the total of current and anticipated future gross revenues for that product or (b) the straight-line method over the remaining estimated economic life of the product, including the period being reported on. Due to competitive pressures, it may be possible that the estimates of anticipated future gross revenue or remaining estimated economic life of the software product will be reduced significantly. As a result, the carrying amount of the software product may be reduced accordingly. Amortization of internal-use software is generally computed using the straight-line method over estimated useful lives of three to ten years.	The Company capitalizes certain of its sales commissions that meet the definition of incremental costs of obtaining a contract and for which the amortization period is greater than one year. The costs associated with those sales commissions is capitalized during the period in which the Company becomes obligated to pay the commissions and is amortized over the period in which the related products or services are transferred to the customer. these costs are included in other current assets and other non-current assets, respectively, on the consolidated balance sheets.
3	Activision Blizzard, Inc.	Software development costs include payments made to independent software developers under development agreements, as well as direct costs incurred for internally developed products. Software development costs are capitalized once the technological feasibility of a product is established and such costs are determined to be recoverable. Technological feasibility of a product requires both technical design documentation and game design documentation, or the completed and tested product design and a working model. Significant management judgments and estimates are utilized in the assessment of when technological feasibility is established and the evaluation is performed on a product-by-product basis. For products where proven technology exists, this may occur early in the development cycle. Software development costs related to online hosted revenue arrangements are capitalized after the preliminary project phase is complete and it is probable that the project will be completed and the software will be used to perform the function intended. Prior to a product's release, if and when we believe capitalized costs are not recoverable, we expense the amounts as part of "Cost of revenues—software royalties, amortization, and intellectual property licenses." Capitalized costs for products that are canceled or are expected to be abandoned are charged to "Product development" in the period of cancellation. Amounts related to software development which are not capitalized are charged immediately to "Product development." Commencing upon a product's release, capitalized software development costs are amortized to "Cost of revenues—software royalties, amortization, and intellectual property licenses" based on the ratio of current revenues to total projected revenues for the specific product, generally resulting in an amortization period of six months to approximately two years.	We apply the practical expedient to expense, as incurred, costs to obtain a contract with a customer when the amortization period would have been one year or less for certain similar contracts in which commissions are paid to internal personnel or third parties. We believe application of the practical expedient has a limited effect on the amount and timing of cost recognition. Total capitalized costs to obtain a contract were immaterial as of December 31, 2018.
4	Alarm.com Holdings, Inc.	Internal-Use Software--We capitalize the costs directly related to the development of internal-use software for our platforms during the application development stage of the projects. Such costs primarily include payroll and payroll-related costs for engineers and product development employees directly associated with the development project. Our internal-use software is reported at cost less accumulated depreciation. Depreciation begins once the project is ready for its intended use, which is usually when the code goes into production in weekly software builds on our platforms. We depreciate the asset on a straight-line basis over a period of three years, which is the estimated useful life. We update our software for our SaaS multi-tenant platforms on a weekly basis utilizing continuous agile development methods, which primarily consists of bug-fixes and user interface changes. We evaluate whether a project should be capitalized if it adds significant functionality to our platforms. Maintenance activities or minor upgrades are expensed in the period performed. External Software--Costs incurred in researching and developing a computer software product that will be marketed and sold are charged to expense when incurred until technological feasibility is established. Technological feasibility is established upon completion of a detailed program design or, in its absence, completion of a working model (a beta version). After technological feasibility is established, certain payroll and payroll-related costs are capitalized for engineers and product development employees directly associated with the development project. Cost capitalization ceases when the product is available for general release. Our non-hosted software is typically developed in an agile environment with frequent revisions to product release features and functions. Agile development results in a short duration between completion of the detailed program design and beta release. Accordingly, as of December 31, 2018, we do not have any capitalized external software due to the shorter development cycle associated with agile development	Our contract assets consist of capitalized commission costs. Based on the policy above, we capitalize a portion of our commission costs as an incremental cost of obtaining a contract. When calculating the incremental cost of obtaining a contract, we exclude any commission costs related to metrics that could be satisfied without obtaining a contract, including training-related metrics. We amortize our commission costs over a period of three years, which is consistent with the period over which the products and services related to the commission are transferred to the customer.
5	Altair Engineering Inc.	Capitalization of software development costs begins upon the establishment of technological feasibility and ends when the product is available for general release. Generally, the time between the establishment of technological feasibility and commercial release of software is short. As such, all internal software development costs have been expensed as incurred and included in research and development expense in the accompanying consolidated statements of operations.	Costs to obtain a contract--The Company pays commissions for new software product and PCS sales as well as for renewals of existing software and PCS contracts. Commissions paid to obtain renewal contracts are not commensurate with the commissions paid for new product sales and therefore, a portion of the commissions paid for new contracts relate to future renewals. The Company accounts for new product sales commissions using a portfolio approach and allocates the cost of commissions in proportion to the allocation of transaction price of license and PCS performance obligations. Commissions allocated to the license and license renewal components are expensed at the time the license revenue is recognized. Commissions allocated to PCS are capitalized and amortized on a straight-line basis over a period of four years, reflecting the Company’s estimate of the expected period that it will benefit from those commissions.
6	Alteryx, Inc.	Because our process for developing software is completed concurrently with the establishment of technological feasibility, no internally generated software development costs have been capitalized as of December 31, 2018, and 2017.	The new revenue recognition standard requires the capitalization of certain incremental costs of obtaining a contract, which impacts the period in which we record our sales commissions expense. Prior to our adoption of the new revenue recognition standard, we capitalized sales commissions expense and amortized the expense over the contract term. Under the new revenue recognition standard, for commissions paid on customer contracts in which the commissions paid on new business and renewals are not commensurate, we amortize the commissions paid on new business over an expected period of benefit, which will generally be longer than then contract term.
7	Amber Road, Inc.	Accordingly, we capitalize certain software development costs, including the costs to develop solution modules or significant enhancements to existing modules, which are developed or obtained for internal use. We capitalize software development costs when application development begins, it is probable that the project will be completed, and the software will be used as intended. Such capitalized costs are amortized on a straight-line basis over the estimated useful life of the related asset, which is generally five years. Costs associated with preliminary project stage activities, training, maintenance and all post-implementation stage activities are expensed as incurred. It is difficult to predict the amount of Internal-Use Software that will be capitalized in the future as it is project-specific and, as such, each project will be reviewed on a case-by-case basis.	Footnotes have no discussion of commissions

#	Company	Notes on Capitalization of Software Development	Notes on Capitalization of Commissions
8	AMERICAN SOFTWARE INC	Capitalized Computer Software Development Costs--The Company capitalizes certain computer software development costs in accordance with the FASB ASC Costs of Software to be Sold, Leased or Marketed Topic. Costs incurred internally to create a computer software product or to develop an enhancement to an existing product are charged to expense when incurred as research and development expense until technological feasibility for the respective product is established. Thereafter, software development costs are capitalized and reported at the lower of unamortized cost or net realizable value. Capitalization ceases when the product or enhancement is available for general release to customers. The Company makes ongoing evaluations of the recoverability of its capitalized software projects by comparing the net amount capitalized for each product to the estimated net realizable value of the product. If such evaluations indicate that the unamortized software development costs exceed the net realizable value, the Company writes off the amount by which the unamortized software development costs exceed net realizable value. Capitalized computer software development costs are amortized ratably based on the projected revenues associated with the related software or on a straight-line basis over three years, whichever method results in a higher level of amortization. Amortization of capitalized computer software development costs is included in the cost of license revenues in the consolidated statements of operations.	Our sales and marketing expenses generally include the salaries and commissions we pay to our direct sales professionals, along with marketing, promotional, travel and associated costs.
9	ANSYS INC	Internally developed software costs required to be capitalized as defined by the accounting guidance are not material to the Company's consolidated financial statements.	The Company applies a practical expedient to expense sales commissions as incurred when the amortization period would have been one year or less. Sales commissions associated with the initial year of multi-year contracts are expensed as incurred due to their immateriality. Sales commissions associated with multi-year contracts beyond the initial year are subject to an employee service requirement and are expensed as incurred as they are not considered incremental costs to obtain a contract.
10	APPFOLIO INC	Software development cost consist of certain payroll and stock compensation costs incurred to develop functionality of our internal-use software solutions. We capitalize certain software development costs for new offerings as well as significant upgrades and enhancements to our existing software solutions. Capitalized software development costs are amortized using the straight-line method over an estimated useful life of three years. We do not transfer ownership of our software, or lease our software, to third parties. We believe there are two key estimates within the capitalized software balance, which are the determination of the useful life of the software and the determination of the amounts to be capitalized. We determine the amount of internal software costs to be capitalized based on the amount of time spent by our software engineers on projects. Costs associated with building or significantly enhancing our software solutions and new internally built software solutions are capitalized, while costs associated with planning new developments and maintaining our software solutions are expensed as incurred. There is judgment involved in estimating the stage of development as well as estimating time allocated to a particular project. A significant change in the time spent on each project could have a material impact on the amount capitalized and related amortization expense in subsequent periods.	Beginning January 1, 2018, due to the adoption of ASU No. 2014-09, Revenue from Contracts with Customers, or ASU 2014-09, sales commissions and other incremental costs to acquire customers and grow adoption and utilization of our Value+ services by our new and existing customers are deferred and then amortized on a straight-line basis over a period of benefit that we have determined to be three years.
11	Appian Corp.	Since our software is sold and licensed externally, we consider our software as external-use software for purposes of applying the capitalized software development guidance. Product development costs are expensed as incurred until technological feasibility has been established, which we define as the completion of all planning, designing, coding and testing activities that are necessary to establish products that meet design specifications including functions, features and technical performance requirements. We have determined that technological feasibility for our software products is reached shortly before they are released for sale. Costs incurred after technological feasibility is established are not significant, and accordingly we expense all research and development costs when incurred.	Currently, the entity defer the direct and incremental commission costs to obtain a contract with a customer and amortize those costs over the term of the related customer contract consistent with the related revenue. Deferred commissions are the incremental costs that are directly associated with subscription agreements with customers and consist of sales commissions paid to our direct sales force. Commissions are considered direct and incremental and as such are deferred and amortized over the terms of the related customer contracts consistent with the related revenue.
12	Audioeye, Inc.	In accordance with ASC 350-40, the Company capitalizes certain computer software and software development costs incurred in connection with developing or obtaining computer software for internal use when both the preliminary project stage is completed, and it is probable that the software will be used as intended. Capitalized software costs include only (i) external direct costs of materials and services utilized in developing or obtaining computer software, (ii) compensation and related benefits for employees who are directly associated with the software project and (iii) any interest costs incurred while developing internal-use computer software. Capitalized software costs are included in intangible assets on our balance sheet and amortized on a straight-line basis when placed into service over the estimated useful lives of the software.	Effective January 1, 2018, the Company capitalizes initial and renewal sales commission payments in the period a customer contract is obtained, and payment is received; and is amortized consistent with the transfer of the goods or services to the customer over the expected period of benefit, which we have deemed to be the contract term. Such commissions are amortized over the greater of contract term or technological obsolescence period when the underlying contracted products are technology-based, such as for the SaaS-based platforms, or the expected customer relationship period when the underlying contracted products are not technology-based, such as for patient experience survey products.
13	Autodesk Inc	Software development costs incurred prior to the establishment of technological feasibility are included in research and development expenses. Autodesk defines establishment of technological feasibility as the completion of a working model. Software development costs incurred subsequent to the establishment of technological feasibility through the period of general market availability of the products are capitalized and generally amortized over a three-year period, if material. Autodesk had no material capitalized software development costs at January 31, 2019, and January 31, 2018.	Sales commissions earned by our internal sales personnel and our reseller partners are considered incremental and recoverable costs of obtaining a contract with a customer. The commission costs are capitalized and included in "Prepaid expenses and other current assets" and "Other assets" on our Consolidated Balance Sheets. The deferred costs are then amortized over the period of benefit. Autodesk determined that sales commissions earned by internal sales personnel that are related to contract renewals are commensurate with sales commissions earned on the initial contracts, and we determined the period of benefit to be the term of the respective customer contract. Commissions paid to our reseller partners that are related to contract renewals are not commensurate with commissions earned on the initial contract, and we determined the estimated period of benefit by taking into consideration customer retention data, customer contracts, our technology and other factors. Deferred costs are periodically reviewed for impairment. Amortization expense is included in sales and marketing expenses in the Consolidated Statements of Operations.
14	Avid Technology	Development costs for software to be sold that are incurred subsequent to the establishment of technological feasibility, but prior to the general release of the product, are capitalized. Upon general release, these costs are amortized using the straight-line method over the expected life of the related products, generally 12 to 36 months. The straight-line method generally results in approximately the same amount of expense as that calculated using the ratio that current period gross product revenues bear to total anticipated gross product revenues. We periodically evaluate the assets, considering a number of business and economic factors, to determine if an impairment exists. No amounts have been capitalized during 2018, 2017, and 2016 as the costs incurred subsequent to the establishment of technological feasibility have not been material.	We are applying the practical expedient for the deferral of sales commissions and other contract acquisition costs, which are expensed as incurred, because the amortization period would be one year or less.
15	Aware, Inc.	We capitalize certain internally developed software development costs after technological feasibility of the product has been established. No software costs were capitalized during the years ended December 31, 2018 and 2017, because such costs incurred subsequent to the establishment of technological feasibility, but prior to commercial availability, were immaterial.	We recognize an other asset for the incremental costs of obtaining a contract with a customer if we expect the benefit of those costs to be longer than one year. We have determined that certain sales commissions meet the requirements to be capitalized, and we amortize these costs on a consistent basis with the pattern of transfer of the goods and services in the contract. Total capitalized costs to obtain a contract were immaterial during the periods presented and are included in other current and long-term assets on our consolidated balance sheets.

#	Company	Notes on Capitalization of Software Development	Notes on Capitalization of Commissions
16	Bandwidth, Inc.	We capitalize qualifying internal-use software development costs that are incurred during the application development stage. Capitalization of costs begins when two criteria are met: (i) the preliminary project stage is completed and (ii) it is probable that the software will be completed and used for its intended function. Capitalization ceases when the software is substantially complete and ready for its intended use, including the completion of all significant testing. We also capitalize costs related to specific upgrades and enhancements when it is probable the expenditures will result in additional functionality and expense costs incurred for maintenance and minor upgrades and enhancements. Costs related to preliminary project activities and post-implementation operating activities are expensed as incurred.	Commissions consist of variable compensation earned by sales personnel and third-party resellers. Sales commissions associated with the acquisition of a new customer contract are paid over time, based on monthly revenues, and are recognized as sales and marketing expense in the period incurred.
17	Benefitfocus, Inc.	The Company capitalizes certain costs related to its software developed or obtained for internal use. Costs related to preliminary project activities and post-implementation activities are expensed as incurred. Internal and external costs incurred during the application development stage, including upgrades and enhancements representing modifications that will result in significant additional functionality, are capitalized. Software maintenance and training costs are expensed as incurred. Capitalized costs are recorded as part of property and equipment and are amortized on a straight-line basis over the software's estimated useful life which is three years. The Company evaluates these assets for impairment whenever events or changes in circumstances occur that could impact the recoverability of these assets.	The Company capitalizes costs to obtain contracts that are considered incremental and recoverable, such as sales commissions. Payments of sales commissions generally include multiple payments. The Company capitalizes only those payments made within an insignificant time from the contract inception, typically three months or less. Subsequent payments are expensed as incurred. The capitalized costs are amortized to sales and marketing expense over the estimated period of benefit of the asset, which is generally four to five years. The Company has elected to use the practical expedient to expense the costs to obtain a contract when the amortization period is less than one year.
18	Blackbaud, Inc.	We incur certain costs associated with the development of internal-use software, which are primarily related to activities performed to develop our cloud-based solutions. Internal and external costs incurred in the preliminary project stage of internal-use software development are expensed as incurred. Once the software being developed has reached the application development stage, qualifying internal costs including payroll and payroll-related costs of employees who are directly associated with and devote time to the software project as well as external direct costs of materials and services	We pay sales commissions at the time contracts with customers are signed or shortly thereafter, depending on the size and duration of the sales contract. Sales commissions and related fringe benefits earned by our sales force are considered incremental and recoverable costs of obtaining a contract with a customer. These costs are deferred and then amortized in a manner that aligns with the expected period of benefit, which we have determined to be five years. We do not generally pay commissions for contract renewals. The related amortization expense is included in sales, marketing and customer success expense in our consolidated statements of comprehensive income.
19	Blackline, Inc.	The Company accounts for the costs of computer software obtained or developed for internal use in accordance with ASC 350, Intangibles—Goodwill and Other ("ASC 350"). The Company capitalizes certain costs in the development of its Software as a Service ("SaaS") subscription solution when (i) the preliminary project stage is completed, (ii) management has authorized further funding for the completion of the project and (iii) it is probable that the project will be completed and performed as intended. These capitalized costs include personnel and related expenses for employees and costs of third-party contractors who are directly associated with and who devote time to internal-use software projects and, when material, interest costs incurred during the development. Capitalization of these costs ceases once the project is substantially complete and the software is ready for its intended purpose. Costs incurred for significant upgrades and enhancements to the Company's SaaS software solutions are also capitalized. Costs incurred for training, maintenance and minor modifications or enhancements are expensed as incurred. Capitalized software development costs are amortized using the straight-line method over an estimated useful life of three years.	We recognize an asset for the incremental and recoverable costs of obtaining a contract with a customer if we expect the benefit of those costs to be one year or longer. We have determined that certain sales incentive programs to our employees ("deferred customer contract acquisition costs") and our partners ("partner referral fees") meet the requirements to be capitalized. Deferred customer acquisition costs related to new revenue contracts and upsells are deferred and then amortized straight line over the expected period of benefit that we have determined to be five years, based upon both the product turnover rate and estimated customer life. Partner referral fees are deferred and then amortized on a straight-line basis over the related contractual period, as the fees for renewals are commensurate with fees incurred for the initial contract. Deferred customer acquisition costs and partner referral fees are included within other assets and prepaid expenses and other current assets, respectively, on the consolidated balance sheets. There were no impairment losses in relation to the costs capitalized for the periods presented.
20	Bottomline Technologies, Inc.	Capitalization of software development costs for software that is to be sold, leased or otherwise marketed begins upon the establishment of technological feasibility. The establishment of technological feasibility and the ongoing assessment of recoverability of capitalized software development costs requires considerable judgment by us with respect to certain factors, including, but not limited to, technological feasibility, anticipated future gross revenues, estimated economic life, and changes in software and hardware technologies. Capitalized costs commence amortization on the date of general release using the greater of the straight-line method over the estimated useful life, or the ratio of revenue in the period to total expected revenues over the product's expected useful life.	Entity is currently not capitalizing any costs relating to obtaining customers. They will adopt the new standard for next fiscal year. Under the new standard, costs to obtain a contract, including sales commissions, will be capitalized and amortized on a basis that is consistent with the transfer of goods and services to its customer. This will result in the deferral of certain commission related costs that, today, are expensed as incurred. However, we will recognize commissions expense as incurred when the amortization period of the asset that otherwise would have been recognized is one year or less.
21	Box, Inc.	We capitalize costs to develop software for internal use incurred during the application development stage. Costs related to preliminary project activities and post implementation activities are expensed as incurred. Once an application has reached the development stage, qualifying internal and external costs are capitalized until the application is substantially complete and ready for its intended use. Capitalized qualifying costs are amortized on a straight-line basis when the software is ready for its intended use over an estimated useful life, which is generally three years. We evaluate the useful lives of these assets and test for impairment whenever events or changes in circumstances occur that could impact the recoverability of these assets. We capitalize qualifying implementation costs incurred in a hosting arrangement that is a service contract based on the existing guidance for internal-use software. Qualifying external and internal costs incurred during the application development stage of implementation are capitalized and costs incurred during the preliminary project and post implementation stages are expensed as incurred. We amortize capitalized qualifying implementation costs on a straight-line basis over the term of the associated hosting arrangement when the module or component of the hosting arrangement is ready for its intended use. The amortization of capitalized qualifying implementation cost is presented in the same line item as fees for the associated hosting arrangement in the consolidated statements of operations. We test for impairment whenever events or changes in circumstances occur that could impact the recoverability of these assets.	Sales commissions earned by our sales force are considered incremental and recoverable costs of obtaining a contract with a customer. Sales commissions for new contracts are deferred and then amortized on a straight-line basis over a period of benefit that we have estimated to be five years. We determined the period of benefit by taking into consideration our customer contracts, our technology and other factors. Sales commissions for renewal contracts are deferred and then amortized on a straight-line basis over the related contractual renewal period. Amortization expense is included in sales and marketing expenses on the consolidated statements of operations.
22	Bridgeline Digital, Inc.	Costs for research and development of a software product to sell, lease or otherwise market are charged to operations as incurred until technological feasibility has been established. Once technological feasibility has been established, certain software development costs incurred during the application development stage are eligible for capitalization. Based on the Company's software product development process, technological feasibility is established upon completion of a working model. Software development costs that are capitalized and are amortized to cost of sales over the estimated useful life of the software, typically three years. Capitalization ceases when a product is available for general release to customers. Capitalization costs are included in other assets in the consolidated financial statements.	Under ASC 606, direct and incremental costs to acquire a contract are capitalized and amortized using a systematic basis over the pattern of transfer of the goods and services to which the asset relates. Capitalized costs such as sales commissions related to new non-cancelable SaaS subscription licenses, annual support contracts, and annual and multi-year hosting contracts will be amortized on a straight-line basis over the expected life of the customer contract or period of service. Currently, the Company expenses sales commissions in the period incurred and does not amortize the expense.

#	Company	Notes on Capitalization of Software Development	Notes on Capitalization of Commissions
23	Cadence Design Systems, Inc.	Software development costs are capitalized beginning when a product's technological feasibility has been established by completion of a working model of the product and amortization begins when a product is available for general release to customers. The period between the achievement of technological feasibility and the general release of Cadence's products has typically been of short duration. Costs incurred during fiscal 2018, 2017 and 2016 were not material.	Cadence records an asset for the incremental costs of obtaining a contract with a customer, including direct sales commissions that are earned upon execution of the contract. Cadence uses the portfolio method to recognize the amortization expense related to these capitalized costs related to initial contracts and renewals and such expense is recognized over a period associated with the revenue of the related portfolio, which is generally two to three years for Cadence's software arrangements and upon delivery for its hardware and IP arrangements. Incremental costs related to initial contracts and renewals are amortized over the period of the arrangement in each case because Cadence pays the same commission rate for both new contracts and renewals. Deferred sales commissions are tested for impairment on an ongoing basis when events or changes in circumstances indicate that the carrying amount may not be recoverable. An impairment is recognized to the extent that the amount of deferred sales commission exceeds the remaining expected gross margin (remaining revenue less remaining direct costs) on the goods and services to which the deferred sales commission relates.
24	Carbon Black, Inc.	The Company capitalizes certain costs related to the development of software for internal use and the development of software for license or sale to customers, including costs incurred for certain upgrades and enhancements that are expected to result in increased functionality. Costs incurred to develop software to be licensed or sold to customers are expensed prior to the establishment of technological feasibility of the software and are capitalized thereafter until commercial release of the software. The Company has not historically capitalized software development costs as the establishment of technological feasibility typically occurs shortly before the commercial release of its software products. As such, all software development costs related to software for license or sale to customers are expensed as incurred and included within research and development expense in the consolidated statements of operations. Qualifying costs incurred to develop internal-use software are capitalized when (i) the preliminary project stage is completed, (ii) management has authorized further funding for the completion of the project and (iii) it is probable that the project will be completed and performed as intended. These capitalized costs include salaries for employees who devote time directly to developing internal-use software and external direct costs of services consumed in developing the software. Capitalization of these costs ceases once the project is substantially complete and the software is ready for its intended purpose. Capitalized internal-use software development costs are amortized using the straight-line method over an estimated useful life of three years. Such amortization expense for internal-use software is classified as cost of subscription, license and support revenue in the consolidated statements of operations.	We capitalize commission costs that are incremental and directly related to the acquisition of customer agreements. Commissions are earned by our sales force and paid in full upon the receipt of customer orders for new arrangements or renewals. Commission costs are capitalized when earned and are amortized as expense over an estimated customer relationship period of five years. We determined the estimated customer relationship period by taking into consideration the contractual term and expected renewals of customer contracts, our technology and other factors, including the fact that commissions paid on renewals are not commensurate with commissions paid on new sales. Commissions paid relating to contract renewals are deferred and amortized over the related renewal period. Costs to obtain a contract for service arrangements are expensed as incurred in accordance with the practical expedient as the contractual period for services is one year or less.
25	Ceridian HCM Ltd	In accordance with Accounting Standards Codification ("ASC") Topic 350, we capitalize costs associated with software developed or obtained for internal use when both the preliminary project stage is completed and our management has authorized further funding for the project, which it deems probable of completion. Capitalized software costs include only: (1) external direct costs of materials and services consumed in developing or obtaining the software; (2) payroll and payroll-related costs for employees who are directly associated with and who devote time to the project; and (3) interest costs incurred while developing the software. Capitalization of these costs ceases no later than the point at which the project is substantially complete and ready for its intended purpose. We do not include general and administrative costs and overhead costs in capitalizable costs. We charge research and development costs, product management, and other software maintenance costs related to software development to earnings as incurred.	In compliance with the new standard, a contract asset will be reflected on the consolidated balance sheets and will be amortized over the contract period, which is generally three years. We also will have changes to the timing of certain selling, general, and administrative expenses, as the new standard requires capitalizing and amortizing certain selling expenses, such as commissions and bonuses paid to the sales force
26	Channel Advisor Corp.	Footnotes have no discussion of capitalization of SW development	In accordance with ASC 606, the Company now capitalizes sales commissions and a portion of other incentive compensation costs that are directly related to obtaining customer contracts and that would not have been incurred if the contract had not been obtained. These costs are included in the accompanying consolidated balance sheets and are classified as Prepaid expenses and other current assets, net of any long-term portion that is included in Deferred contract costs, net of current portion. Deferred contract costs are amortized to sales and marketing expense over the expected period of benefit, which the Company has determined to be five years based on the estimated customer relationship period.
27	Citrix Systems, Inc	In accordance with the authoritative guidance, the Company capitalizes external direct costs of materials and services and internal costs such as payroll and benefits of those employees directly associated with the development of new functionality in internal use software. These costs are being amortized over the estimated useful life of the software, which is generally three to seven years, and are included in property and equipment in the accompanying consolidated balance sheets.	In conjunction with the adoption of the new revenue recognition standard, the Company is required to capitalize certain contract acquisition costs consisting primarily of commissions paid and related payroll taxes when contracts are signed. The asset recognized from capitalized incremental and recoverable acquisition costs is amortized on a basis consistent with the pattern of transfer of the products or services to which the asset relates and is recognized in Prepaid expenses and other current assets and Other assets in the accompanying consolidated balance sheets.
28	Cloudera, Inc.	Capitalization of software development costs for products to be sold to third parties begins upon the establishment of technological feasibility and ceases when the product is available for general release. There is generally no significant passage of time between achievement of technological feasibility and the availability of our software for general release, and the majority of our software is open-source. Therefore, we have not capitalized any software costs through January 31, 2019. All software development costs have been charged to research and development expense in the consolidated statements of operations as incurred.	Contract costs, consisting primarily of sales commissions and payroll taxes, that are incremental to obtaining a subscription contract with a customer are capitalized and recorded as deferred costs. We expect to recover deferred contract costs over the period of benefit from the underlying contracts. The amortization period for recovery is consistent with the timing of transfer to the customer of services to which the capitalized costs relate. Contract costs that relate to an underlying transaction are expensed commensurate with the recognition of revenue as performance obligations are satisfied. Contract costs that are incurred in excess of those relating to an underlying transaction are not considered commensurate with recognition of revenue as performance obligations are satisfied, and are amortized on a straight-line basis over the expected benefit period of five years. Commissions for services are treated as a separate class with a contract duration of less than a year and are expensed as incurred. We do not incur direct fulfillment-related costs of a nature required to be capitalized and amortized.
29	Commvault Systems, Inc.	Footnotes have no discussion of capitalization of SW development	Sales commissions and related payroll taxes earned by the Company's employees are considered incremental and recoverable costs of obtaining a contract with a customer. The Company's typical contracts include performance obligations related to software licenses, software updates, customer support and other professional services. In these contracts, incremental costs of obtaining a contract are allocated to the performance obligations based on the relative estimated standalone selling prices and then recognized on a systematic basis that is consistent with the transfer of the goods or services to which the asset relates. The Company does not pay commissions on annual renewals of contracts for software updates and customer support for perpetual licenses. The costs allocated to software and products are expensed at the time of sale, when revenue for the functional software license or appliance is recognized. The costs allocated to software updates and customer support for perpetual licenses are amortized ratably over a period of approximately five years, the expected period of benefit of the asset capitalized. The Company currently estimates a period of five years is appropriate based on consideration of historical average customer life and the estimated useful life of the underlying software or appliance sold as part of the transaction. The costs related to professional services are amortized within one quarter following the date of the related software or appliance sale, which is typically the period the related professional services are provided and revenue is recognized. Amortization expense related to these costs is included in Sales and marketing expenses in the accompanying condensed consolidated statements of operations.

#	Company	Notes on Capitalization of Software Development	Notes on Capitalization of Commissions
30	Coupa Software, Inc.	We capitalize certain development costs incurred in connection with software development for our cloud-based platform. Costs incurred in the preliminary stages of development are expensed as incurred. Once software has reached the application development stage, internal and external costs, if direct and incremental, are capitalized until the software is substantially complete and ready for its intended use. Capitalization ceases upon completion of all substantial testing. These software development costs are recorded as part of property and equipment. Capitalized software development costs are amortized on a straight-line basis over the technology's estimated useful life, which is generally two to three years.	Commissions are earned by sales personnel upon the execution of the sales contract by the customer, and commission payments are made shortly after they are earned. Commission costs can be associated specifically with subscription and professional services arrangements. Commissions earned by our sales personnel are considered incremental and recoverable costs of obtaining a contract with a customer. These costs are deferred and then amortized over a period of benefit of five years. We determined the period of benefit by taking into consideration our past experience with customers, future cash flows expected from customers, industry peers and other available information.
31	Determine, Inc.	The Company capitalizes costs for internal use software incurred during the application development. Costs related to preliminary project activities and post implementation activities are expensed as incurred. Capitalized software will be amortized once the product is ready for its intended use, using the straight-line method over the estimated useful lives of the assets, which is three years. The Company periodically reviews its capitalized software for impairment whenever events or changes in circumstances indicate that the carrying amount of such assets may not be recoverable. There were no impairment charges during the years ended March 31, 2018 and 2017, respectively.	Topic 606 also provides guidance on the recognition of costs related to obtaining customer contracts. ASU No. 2015-14 deferred the effective date of the new revenue standard for periods beginning after December 15, 2016 to December 15, 2017. The Company has adopted the new standard under the full retrospective method and believes the adoption will not have a material impact on its consolidated financial statements. It will, however, require additional incremental disclosures, including information about the remaining transaction price and when the Company expects to recognize revenue. The Company continues to assess the new standard along with industry trends and additional interpretive guidance and may adjust its interpretation and implementation plan accordingly.
32	Dropbox, Inc.	The Company capitalizes certain costs related to developed or modified software solely for its internal use and cloud based applications used to deliver its platform. The Company capitalizes costs during the application development stage once the preliminary project stage is complete, management authorizes and commits to funding the project, and it is probable that the project will be completed and that the software will be used to perform the function intended. Costs related to preliminary project activities and post implementation activities are expensed as incurred. Capitalized internal use software costs were not material to the Company's consolidated financial statements during the years ended December 31, 2018, 2017, and 2016.	Deferred commissions, net is stated at gross deferred commissions less accumulated amortization. Sales commissions earned by the Company's sales force and third-party resellers, as well as related payroll taxes, are considered to be incremental and recoverable costs of obtaining a contract with a customer. As a result, these amounts have been capitalized as deferred commissions within prepaid and other current assets and other assets on the consolidated balance sheet. Deferred commissions are amortized over a period of benefit of five years. The period of benefit was estimated by considering factors such as historical customer attrition rates, the useful life of the Company's technology, and the impact of competition in its industry. Amortized costs are included in sales and marketing expense in the accompanying consolidated statements of operations.
33	Egain, Inc.	We account for software development costs in accordance with ASC 985, Software, for costs of the software to be sold, leased or marketed, whereby costs for the development of new software products and substantial enhancements to existing software products are included in research and development expense as incurred until technological feasibility has been established, at which time any additional costs are capitalized. Technological feasibility is established upon completion of a working model. To date, software development costs incurred in the period between achieving technological feasibility and general availability of software have not been material and have been charged to operations as incurred.	Deferred commissions are the direct and incremental costs directly associated with cloud and term license contracts with customers and consist of sales commissions to our direct sales force. The commissions are deferred and amortized over the terms of the related customer contracts, which are typically 12 to 36 months. The commission payments are paid based on contract terms in the month following the quarter in which the commissions are earned. The deferred commission amounts are recognized as sales and marketing expense in the consolidated statements of operations over the terms of the related customer contracts, in proportion to the recognition of the associated revenue.
34	Electronic Arts, Inc.	We capitalize costs associated with internal-use software development once a project has reached the application development stage. Such capitalized costs include external direct costs utilized in developing or obtaining the software, and payroll and payroll-related expenses for employees who are directly associated with the development of the software. Capitalization of such costs begins when the preliminary project stage is complete and ceases at the point in which the project is substantially complete and is ready for its intended purpose. Once the internal-use software is ready for its intended use, the assets are depreciated on a straight-line basis over each asset's estimated useful life, which is generally three years.	Footnotes have no discussion of commissions.
35	Endurance International Group Holding	The Company accounts for software development costs for internal use software under the provisions of ASC 350-40, Internal-Use Software. Accordingly, certain costs to develop internal-use computer software are capitalized, provided these costs are expected to be recoverable.	As a result of the implementation of ASC 606, the Company now capitalizes the incremental costs directly related to obtaining and fulfilling a contract (such as sales commissions and certain direct sales and marketing success based costs), if these costs are expected to be recovered. These costs are amortized over the period the services are transferred to the customer, which is estimated based on customer churn rates for various segments of the business. The Company includes only those incremental costs that would not have been incurred if the contracts had not been entered into
36	Everbridge, Inc.	Research and development expense primarily consists of employee-related expenses for research and development staff, including salaries, bonuses, benefits and stock-based compensation expense. Research and development expense also includes the cost of certain third-party services, office related costs to support research and development activities, software subscriptions and hosting costs. We capitalize certain software development costs that are attributable to developing new applications and adding incremental functionality to our platform and amortize these costs over the estimated life of the new application or incremental functionality, which is generally three years. We focus our research and development efforts on improving our applications, developing new applications and delivering new functionality. In the near term, we expect our research and development expense to increase on an absolute dollar basis as we continue to increase the functionality of our platform and applications.	Sales commissions earned by the Company's sales force are considered incremental and recoverable costs of obtaining a contract with a customer. Sales commissions related to initial contracts are deferred and then amortized on a straight-line basis over a period of benefit that the Company has determined to be four years. The Company has determined the period of benefit by taking into consideration its customer contracts, its technology and other factors. Sales commissions attributed to renewals are not material. Amortization of deferred commissions is included in sales and marketing expenses in the accompanying condensed consolidated statements of operations.
37	GlobalScape, Inc.	When we complete research and development for a software product and have in place a program plan and a detail program design or a working model of that software product, we capitalize production costs incurred for that software product from that point forward until it is ready for general release to the public. Thereafter, we amortize capitalized software production costs to expense using the straight-line method over the estimated useful life of that product, which is generally three years. We periodically assess the carrying value of capitalized software development costs and our method of amortizing them relative to our estimates of realizability through sales of products in the marketplace.	We incur incremental costs in the form of sales commissions paid to our sales personnel and royalties on certain products paid to third parties. These are costs we would not incur if we did not obtain a contract to deliver our goods and services.
38	Guideware Software, Inc.	For qualifying costs incurred for computer software developed for internal use, the Company begins to capitalize its costs to develop software when preliminary development efforts are successfully completed, management has authorized and committed project funding, it is probable that the project will be completed, and the software will be used as intended. These capitalized costs are amortized to expense over the estimated useful lives of the related assets, generally estimated to be three years. Costs incurred prior to meeting these capitalization criteria and costs incurred for training and maintenance are expensed as incurred and recorded in research and development expense on the Company's consolidated statements of operations. Capitalized software development costs are recorded in property and equipment on the Company's consolidated balance sheets.	Footnotes have no discussion of commissions

#	Company	Notes on Capitalization of Software Development	Notes on Capitalization of Commissions
39	Hubspot Inc.	Certain payroll and stock compensation costs incurred to develop functionality for the Company's software and internally built software platforms, as well as certain upgrades and enhancements that are expected to result in increased functionality are capitalized. The costs incurred in the preliminary stages of development are expensed as incurred. Once an application has reached the development stage, certain internal costs are capitalized until the software is substantially complete and ready for its intended use. Capitalized software development costs are amortized on a straight-line basis over their estimated useful life of two to five years. Management evaluates the useful lives of these assets on a quarterly basis and tests for impairment whenever events or changes in circumstances occur that could impact the recoverability of these assets.	Sales commissions earned by our sales force are considered incremental, recoverable costs of obtaining a contract with a customer. Sales commissions for initial contracts are deferred and then amortized on a straight-line basis over a period of benefit that we have determined to be approximately one to three years. The one to three-year period has been determined by taking into consideration the type of product sold, the commitment term of the customer contract, the nature of the Company's technology development life-cycle, and an estimated customer relationship period. Sales commissions for upgrade contracts are deferred and amortized on a straight-line basis over the remaining estimated customer relationship period of the related customer. While we do not anticipate any significant changes to the one to three year amortization period, if a change did occur it could produce a material impact on our financial statements. For example, if the commitment term of our customer contracts significantly increased, our deferred commission expense asset would increase, and our amortization expense would decrease in the period in which the change occurs.
40	Inspired Entertainment, Inc.	We classify software development costs as either internal use software or external use software. We account for costs incurred to develop internal use software in accordance with Accounting Standards Codification ("ASC") ASC 350-40, Internal Use Software. Consequently, any costs incurred during preliminary project stages are expensed; direct costs incurred during the application development stages are capitalized; and costs incurred during the post-implementation/operation stages are expensed. Once the software is placed in operation, we amortize the capitalized internal use software cost over its estimated economic useful life, which range from two to five years.	Footnotes have no discussion of commissions
41	INSTRUCTURE INC	Research and Development. Research and development expenses consist primarily of personnel costs of our development team, including payroll, benefits and stock-based compensation expense and allocated overhead costs. We capitalize certain software development costs that are attributable to developing new applications, features and adding incremental functionality to our platform and amortize such costs as costs of subscription revenue over the estimated life of the new application or incremental functionality, which is generally three years. We expect research and development expenses to increase in absolute dollars as we continue to increase the functionality of our software platform.	Sales commissions earned by our sales force, as well as related payroll taxes, are considered incremental and recoverable costs of obtaining a contract with a customer. These costs are deferred and then amortized on a straight-line basis over a period of benefit that we have determined to be generally four years. We determined the period of benefit by taking into consideration our customer contracts, our technology and other factors. Amortization of deferred commissions is included in sales and marketing expenses in the accompanying consolidated statements of operations.
42	Intellicheck, Inc.	Footnotes have no discussion of capitalization of SW development	Footnotes have no discussion of commissions
43	INTELLIGENT SYSTEMS CORP	Research and development costs are expensed in the period in which they are incurred. Contract specific software development costs are capitalized and recognized when the related contract revenue is recognized.	Footnotes have no discussion of commissions
44	INTUIT INC	We capitalize costs related to development of hosted services that we provide to our customers and internal use of enterprise-level business and finance software in support of our operational needs. Costs incurred in the application development phase are capitalized and amortized on a straight-line basis over their useful lives, which are generally three to five years. Costs related to planning and other preliminary project activities and to post-implementation activities are expensed as incurred. We test these assets for impairment whenever events or changes in circumstances occur that could impact their recoverability.	Under the new standard, we are required to recognize an asset for the incremental costs of obtaining a contract with a customer if we expect the benefit of those costs to be longer than one year. We have determined that internal sales commissions related to our subscription offerings meet the requirements to be capitalized. The total capitalized costs to obtain a contact are included in prepaid expenses and other current assets and other assets on our consolidated balance sheets.
45	LogMeIn, Inc.	The Company capitalizes certain direct costs to develop functionality as well as certain upgrades and enhancements of its on-demand products that are probable to result in additional functionality. The costs incurred in the preliminary stages of development are expensed as incurred. Once an application has reached the development stage, internal and external costs, if direct and incremental, are capitalized as part of intangible assets until the software is substantially complete and ready for its intended use. Internally developed software costs that are capitalized are classified as intangible assets and amortized over a period of two to three years.	Revenue recognition from the Company's primary revenue streams remained substantially unchanged following adoption of ASC 606 and therefore did not have a material impact on its revenues. The Company also considered the impact of ASC 606 subtopic ASC 340-40. Prior to the adoption of ASC 606, the Company expensed commission costs and related fringe benefits as incurred. Under ASC 340-40, the Company is required to capitalize and amortize incremental costs of obtaining a contract, such as sales commissions and related fringe benefits, over the period of benefit, which the Company has calculated to be three years. Incremental costs of obtaining a contract are recognized as an asset if the costs are expected to be recovered. The period of benefit was determined based on an average customer contract term, technology changes, and the company's ability to retain customers. Sales commissions for renewal contracts are deferred and amortized on a straight-line basis over the related contractual renewal period. Amortization expense is included in sales and marketing expense on the consolidated statements of operations.
46	Majesco	The costs incurred for the development of software that will be sold, leased or otherwise marketed are capitalized when technological feasibility has been established. In certain situations in which technological feasibility is established by completing a working model, substantially all development costs could be expensed when costs qualifying for capitalization are not material. Current engineering costs related to routine updates, customer support issues, and other modifications that do not extend the life or improve the marketability of the existing software are expensed as incurred.	Sales commissions are recognized as an expense when earned by the sales representative, generally occurring at the time the customer order is signed.
47	MAM SOFTWARE GROUP, INC.	Costs incurred to develop computer software products to be sold or otherwise marketed are charged to expense until technological feasibility of the product has been established. Once technological feasibility has been established, computer software development costs (consisting primarily of internal labor costs) are capitalized and reported at the lower of amortized cost or estimated realizable value. Purchased software development cost is capitalized and recorded at its estimated fair market value. When a product is ready for general release, its capitalized costs are amortized on a product-by-product basis. The annual amortization is the greater of: the ratio that current gross revenues for a product bear to the total of current and anticipated future gross revenues for that product and, the straight-line method over the remaining estimated economic life (a period of three to ten years) of the product including the period being reported on. If the future market viability of a software product is less than anticipated, impairment of the related unamortized development costs could occur, which could significantly impact our results of operations.	Footnotes have no discussion of commissions
48	MANHATTAN ASSOCIATES INC	Research and development expenses are charged to expense as incurred. For 2018, 2017 and 2016, we did not capitalize any internal research and development costs because the costs incurred between the attainment of technological feasibility for the related software product through the date that the product was available for general release to customers were insignificant. We determine the amount of development costs capitalizable in accordance with the FASB Codification provisions relating to costs of computer software to be sold, leased, or marketed. Under this guidance, computer software development costs are charged to R&D expense until technological feasibility is established, after which remaining software production costs are capitalized. We have defined technological feasibility as the point in time at which we have a detailed program design or a working model of the related product, depending on the type of development efforts, and high-risk development issues have been resolved through end-to-end system testing.	We consider sales commissions to be incremental costs of obtaining a contract with a customer. We defer and recognize an asset for sales commissions related to performance obligations with an expected period of benefit of more than one year. We apply the practical expedient to expense sales commissions when the amortization period would have been one year or less.Deferred commissions is included in prepaid expenses. Sales commission expense is included in Sales and Marketing expense in the accompanying consolidated statement of operations. No impairment losses were recognized during2018.
49	Medical Information Technology, Inc.	MEDITECH follows the provisions of ASC 985-20, Accounting for the Costs of Computer Software to Be Sold, Leased or Marketed. ASC 985-20 establishes standards for capitalizing software development costs incurred after technological feasibility of the software development projects is established and the realizability of such capitalized costs through future operations is expected, if such costs become material. To date, development costs incurred by MEDITECH after technological feasibility has been established have been immaterial and as such have been charged to operations as incurred.	Footnotes have no discussion of commissions

#	Company	Notes on Capitalization of Software Development	Notes on Capitalization of Commissions
50	MICROSOFT CORP	Research and development expenses include payroll, employee benefits, stock-based compensation expense, and other headcount-related expenses associated with product development. Research and development expenses also include third-party development and programming costs, localization costs incurred to translate software for international markets, and the amortization of purchased software code and services content. Such costs related to software development are included in research and development expense until the point that technological feasibility is reached, which for our software products, is generally shortly before the products are released to production. Once technological feasibility is reached, such costs are capitalized and amortized to cost of revenue over the estimated lives of the products.	Assets Recognized from Costs to Obtain a Contract with a Customer We recognize an asset for the incremental costs of obtaining a contract with a customer if we expect the benefit of those costs to be longer than one year. We have determined that certain sales incentive programs meet the requirements to be capitalized. Total capitalized costs to obtain a contract were immaterial during the periods presented and are included in other current and long-term assets in our consolidated balance sheets.
51	MICROSTRATEGY Inc	Software development costs are expensed as incurred until technological feasibility has been established, at which time such costs are capitalized until the product is available for general release to customers. Capitalized software development costs include direct labor costs and fringe benefit costs attributed to programmers, software engineers, and quality control and field certifiers working on products after they reach technological feasibility, but before they are generally available to customers for sale. Technological feasibility is considered to be achieved when a product design and working model of the software product have been completed. Capitalized software development costs are typically amortized over the estimated product life of three years, on a straight-line basis. The Company has significantly accelerated the pace of its software development efforts and increased the frequency of its software releases subsequent to the release of MicroStrategy 10, which has resulted in the Company's software development costs in recent periods being expensed as incurred within "Research and development" in the Consolidated Statements of Operations.	Incremental costs incurred to obtain contracts with customers include certain variable compensation (e.g., commissions and bonuses) paid to the Company's sales team. Although the Company may bundle its goods and services into one contract, commissions are individually determined on each distinct good or service in the contract.mThe Company expenses as incurred those amounts earned on consulting and education services, which are generally performed within a one-year period and primarily sold on a standalone basis. The Company also expenses as incurred those amounts earned on product license sales, since the amount is earned when the license is delivered. The Company capitalizes those amounts earned on product support and amortizes the costs over a period of time that is consistent with the pattern of transfer of the product support to the customer, which the Company has determined to be a period of three years. Although the Company typically sells product support for a period of one year, a majority of customers renew their product support arrangements. Three years is generally the period after which platforms are no longer supported by the Company's support team and when customers generally choose to upgrade their software platform.mThe Company does not pay variable compensation on product support renewals. Variable compensation earned on subscription cloud services is expensed as incurred due to its immaterial nature.
52	MOBILEIRON, INC.	We capitalize costs incurred during the application development stage related to our internally used software. Such costs are primarily incurred by third-party vendors and consultants. Costs related to preliminary project activities and post-implementation activities are expensed as incurred. Amounts capitalized in all periods presented were not significant. All software development costs incurred in connection with our cloud offering, or SaaS, are also sold or marketed to partners or end customers, therefore we start capitalizing costs when technological feasibility is achieved. No costs were capitalized in any periods presented as we believe that our current process for developing software is essentially completed concurrent with the establishment of technological feasibility.	We recognize an asset for the incremental costs of obtaining a contract with a customer. We have determined that certain sales incentive programs meet the requirements to be capitalized and we include those costs in current and non-current deferred commissions on our consolidated balance sheets. Deferred commissions are amortized over the period commensurate with revenue recognition.
53	MongoDB, Inc.	Software development costs for software to be sold, leased, or otherwise marketed are expensed as incurred until the establishment of technological feasibility, at which time those costs are capitalized until the product is available for general release to customers and amortized over the estimated life of the product. Technological feasibility is established upon the completion of a working prototype that has been certified as having no critical bugs and is a release candidate. To date, costs and time incurred between the establishment of technological feasibility and product release have not been material, resulting in software development costs qualifying for capitalization being immaterial. As a result, all software development costs have been recorded in research and development expense in the consolidated statements of operations. Costs related to software acquired, developed, or modified solely to meet the Company's internal requirements, with no substantive plans to market such software at the time of development, or costs related to the development of web-based product are capitalized. Costs incurred during the preliminary planning and evaluation stage of the project and during post implementation operational stage are expensed as incurred. Costs incurred during the application development stage of the project are capitalized. The Company did not capitalize any costs related to computer software developed for internal use or web-based product in the years ended January 31, 2019 and 2018.	The Company capitalizes its incremental costs of obtaining non-cancelable subscription contracts with customers, which generally consist of sales commissions paid to the Company's sales force and related payroll taxes. These costs are recorded on the Company's consolidated balance sheet as deferred commissions. Amortization is recognized based on the expected future revenue streams under the customer contracts over a period of benefit that the Company has determined to be five years. The Company determined the period of benefit by taking into consideration its customer contracts, its technology and other factors. Sales commissions and related payroll taxes for renewal contracts are deferred and then amortized based on the pattern of the associated revenue recognition over the related contractual renewal period. Sales commissions are generally paid up front and one month in arrears, however, the timing of payment is based on contractual terms of the underlying subscription contract and is subject to an evaluation of customer credit-worthiness. The deferred commission amounts are recoverable through the future revenue streams under the non-cancelable customer contracts. Amortization of deferred commissions is included in sales and marketing expense in the consolidated statements of operations. The Company adopted the practical expedient that permits an entity to expense the costs to obtain a contract as incurred when the expected amortization period is one year or less.
54	MTBC, Inc.	The Company capitalizes certain development costs incurred in connection with its internal-use software. Costs incurred in the preliminary stages of development are expensed as incurred. Once an application has reached the development stage, internal and external costs, if direct, are capitalized until the software is substantially complete and ready for its intended use. Capitalization ceases upon completion of all substantial testing. The Company also capitalizes costs related to specific upgrades and enhancements when it is probable that the expenditures will result in additional functionality. Capitalized costs are recorded as part of intangible assets. Maintenance and training costs are expensed as incurred. Internal use software is amortized on a straight line basis over its estimated useful life, generally three years. Management evaluates the useful lives of these assets on an annual basis and tests for impairment whenever events or changes in circumstances occur that could impact the recoverability of these assets.	Our sales incentive plans include commissions payable to employees and third parties at the time of initial contract execution that are capitalized as incremental costs to obtain a contract. The capitalized commissions are amortized over the period the related services are transferred. As we do not offer commissions on contract renewals, we have determined the amortization period to be the estimated client life, which is three years. Deferred commissions is included in the Other Assets lines in the consolidated balance sheet.
55	NATIONAL INSTRUMENTS CORP	We capitalize costs related to the development and acquisition of certain software products. Capitalization of costs begins when technological feasibility has been established and ends when the product is available for general release to customers. Technological feasibility for our products is established when the product is available for beta release. Judgment is required in determining when technological feasibility of a product is established. Amortization is computed on an individual product basis for those products available for market and has been recognized based on the product's estimated economic life, generally three years. At each balance sheet date, the unamortized costs are reviewed by management and reduced to net realized value when necessary.	We recognize an asset for the incremental costs of obtaining a contract with a customer if we expect the benefit of those costs to be longer than one year. We have determined that certain sales incentive programs meet the requirements to be capitalized. Capitalized incremental costs related to initial contracts and renewals are amortized over the same period because the commissions paid on both the initial contract and renewals are commensurate with one another. Total capitalized costs to obtain a contract were not material during the periods presented and are included in other long-term assets on our consolidated balance sheets. The net effect of capitalization and amortization of these costs was not material to our results of operating during the periods presented.
56	NETSOL TECHNOLOGIES INC	Costs incurred to internally develop computer software products or to enhance an existing product are recorded as research and development costs and expensed when incurred until technological feasibility for the respective product is established. Thereafter, all software development costs are capitalized and reported at the lower of unamortized cost or net realizable value. Capitalization ceases when the product or enhancement is available for general release to customers. The Company makes on-going evaluations of the recoverability of its capitalized software projects by comparing the amount capitalized for each product to the estimated present value of future net income from the product. If such evaluations indicate that the unamortized software development costs exceed the present value of expected future net income, the Company writes off the amount which the unamortized software development costs exceed such present value. Capitalized and purchased computer software development costs are being amortized ratably based on the projected revenue associated with the related software or on a straight-line basis.	Footnotes have no discussion of commissions
57	NEW RELIC, INC.	We capitalize certain development costs incurred in connection with our internal use software and website. These capitalized costs are primarily related to our software tools that are hosted by us and accessed by our customers on a subscription basis. Costs incurred in the preliminary stages of development are expensed as incurred. Once an application has reached the development stage, internal and external costs, if direct and incremental, are capitalized until the software is substantially complete and ready for its intended use. Capitalization ceases upon completion of all substantial testing. We also capitalize costs related to specific upgrades and enhancements when it is probable the expenditures will result in additional features and functionality. Maintenance costs are expensed as incurred. Internal use software is amortized on a straight-line basis over its estimated useful life, generally three years.	Sales commissions are capitalized and amortized on a straight-line basis over the anticipated period of benefit, which we have estimated to be three years. The Company determined the period of benefit by taking into consideration the length of our customer contracts, our technology lifecycle, and other factors. Amortization expense is recorded in sales and marketing expense within our consolidated statement of operations.

#	Company	Notes on Capitalization of Software Development	Notes on Capitalization of Commissions
58	Nuance Communications, Inc.	Internally developed software consists of capitalized costs incurred during the application development stage, which include costs related design of the software configuration and interfaces, coding, installation and testing. Costs incurred during the preliminary project stage and post-implementation stage are expensed as incurred. Internally developed software is amortized over the estimated useful life, commencing on the date when the asset is ready for its intended use. Land, building and equipment are stated at cost and depreciated over their estimated useful lives. Leasehold improvements are depreciated over the shorter of the related lease term or the estimated useful life. Depreciation is computed using the straight-line method. Repair and maintenance costs are expensed as incurred. The cost and related accumulated depreciation of sold or retired assets are removed from the accounts and any gain or loss is included in the results of operations for the period.	Additionally, the new guidance requires direct and incremental costs to acquire a contract be capitalized and amortized over the pattern of transfer of the goods and services to which the asset relates, whereas we expense sales commissions as incurred under the existing guidance. We expect to record a pre-tax cumulative adjustment to capitalize sales commission costs of approximately $35 million to $45 million upon the adoption, with a corresponding decrease to retained earnings. The tax effect of the adjustments have not been reflected in the amounts. We expect to complete our analysis for the impact of the implementation by December 31, 2018.
59	Nutanix, Inc.	Footnotes have no discussion of capitalization of SW development	We capitalize commissions paid to sales personnel and the related payroll taxes when customer contracts are signed. These costs are recorded as deferred commission expense in the consolidated balance sheets, current and non-current. We determine whether costs should be deferred based on our sales compensation plans, if the commissions are incremental and would not have been incurred absent the execution of the customer contract. Sales commissions for renewals of customer contracts are not commensurate with the commissions paid for the acquisition of the initial contract given the substantive difference in commission rates in proportion to their respective contract values. Commissions paid upon the initial acquisition of a contract are amortized over the estimated period of benefit, which may exceed the term of the initial contract. Accordingly, the amortization of deferred costs is recognized on a systematic basis that is consistent with the pattern of revenue recognition allocated to each performance obligation and included in sales and marketing expense in the consolidated statements of operations. We determine the estimated period of benefit by evaluating the expected renewals of customer contracts, the duration of relationships with our customers, customer retention data, our technology development lifecycle, and other factors. Deferred costs are periodically reviewed for impairment.
60	Okta, Inc.	The Company capitalizes as intangible assets certain costs incurred during the application development stage in connection with software development for its platform. Costs related to preliminary project activities and post-implementation activities are expensed as incurred. Capitalized costs are recorded as part of intangible assets. Maintenance and training costs are expensed as incurred. Capitalized internal-use software costs are amortized on a straight-line basis over the software's estimated useful life, which is generally three years. The Company records amortization related to capitalized internal-use software within subscription cost of revenue in the consolidated statements of operations. The Company evaluates the useful lives of these assets on an annual basis and tests for impairment whenever events or changes in circumstances occur that could impact the recoverability of these assets.	Sales commissions earned by the Company's sales force are considered incremental and recoverable costs of obtaining a contract with a customer. Sales commissions for new revenue contracts, including incremental sales to existing customers, are deferred and then amortized on a straight-line basis over a period of benefit, which the Company has determined to be generally five years. The Company determined the period of benefit by taking into consideration its customer contracts, its technology and other factors. Sales commissions for renewal contracts (which are not considered commensurate with sales commissions for new revenue contracts and incremental sales to existing customers) are deferred and then amortized on a straight-line basis over the related period of benefit, which is generally the related contract renewal term. Amortization expense is included in sales and marketing expenses in the accompanying consolidated statements of operations. Sales commissions capitalized as contract costs totaled $41.3 million and $27.0 million in the years ended January 31, 2019 and 2018, respectively. Amortization of contract costs was $20.9 million, $15.2 million and $10.5 million for the years ended January 31, 2019, 2018 and 2017, respectively. There was no impairment loss in relation to the costs capitalized.
61	ORACLE CORP	All research and development costs are expensed as incurred in accordance with ASC 730, Research and Development. Software development costs required to be capitalized under ASC 985-20, Costs of Software to be Sold, Leased or Marketed, and under ASC 350-40, Internal-Use Software, were not material to our consolidated financial statements in fiscal 2019, 2018 and 2017.	Footnotes have no discussion of commissions
62	Paycom Software, Inc.	Expenditures for software developed or obtained for internal use are capitalized and amortized over a three-year period on a straight-line basis. The nature of the development projects underway during a particular period directly impacts the timing and extent of these capitalized expenditures, and can affect the amount of research and development expenses in such period.	Footnotes have no discussion of commissions
63	Paylocity Holding Corp	We apply ASC 350-40, Intangibles—Goodwill and Other—Internal-Use Software, to the accounting for costs of internal-use software. Software development costs are capitalized when application development begins, it is probable that the project will be completed, and the software will be used as intended. Costs associated with preliminary project stage activities, training, maintenance and all other post implementation stage activities are expensed as incurred. We also capitalize certain costs related to specific upgrades and enhancements when it is probable the expenditures will result in significant additional functionality. The capitalization policy provides for the capitalization of certain payroll costs for employees who are directly associated with developing internal-use software as well as certain external direct costs. Capitalized employee costs are limited to the time directly spent on such projects. Internal-use software is amortized on a straight-line basis, generally over a 24 or 36-month period. We evaluate the useful lives of these assets on an annual basis and test for impairments whenever events or changes in circumstances occur that could impact the recoverability of these assets.	Footnotes have no discussion of commissions
64	PROGRESS SOFTWARE CORP /MA	Software development costs associated with internal use software are incurred in three stages of development: the preliminary project stage, the application development stage, and the post-implementation stage. Costs incurred during the preliminary project and post-implementation stages are expensed as incurred. Certain internal and external qualifying costs incurred during the application development stage are capitalized as property and equipment. Internal use software is amortized on a straight-line basis over its estimated useful life of three years, beginning when the software is ready for its intended use.	Footnotes have no discussion of commissions
65	PTC INC.	We incur costs to develop computer software to be licensed or otherwise marketed to customers. Research and development costs are expensed as incurred, except for costs of internally developed or externally purchased software that qualify for capitalization. Development costs for software to be sold externally incurred subsequent to the establishment of technological feasibility, but prior to the general release of the product, are capitalized and, upon general release, are amortized using the greater of either the straight-line method over the expected life of the related products or based upon the pattern in which economic benefits related to such assets are realized. The straight-line method is used if it approximates the same amount of expense as that calculated using the ratio that current period gross product revenues bear to total anticipated gross product revenues.	Footnotes have no discussion of commissions

#	Company	Notes on Capitalization of Software Development	Notes on Capitalization of Commissions
66	QAD INC	The Company capitalizes software development costs incurred in connection with the localization and translation of its products once technological feasibility has been achieved based on a working model. A working model is defined as an operative version of the computer software product that is completed in the same software language as the product to be ultimately marketed, performs all the major functions planned for the product and is ready for initial customer testing (usually identified as beta testing). In addition, the Company capitalizes software purchased from third parties or through business combinations as acquired software technology, if the related software under development has reached technological feasibility	The Company's incremental direct costs of obtaining a contract consist of sales commissions and sales agent fees which are deferred and amortized ratably over the term of economic benefit which the Company has determined to be five years. These deferred costs are classified as current or non-current based on the timing of when the Company expects to recognize the expense. Incremental costs related to renewals are expensed as incurred because the term of economic benefit is one year or less. The current and non-current portions of deferred commissions are included in other current assets and other long-term assets, respectively, in the Company's Consolidated Balance Sheets.
67	QUALYS, INC.	Costs incurred in the development phase are capitalized and amortized over the product's estimated useful life, which is three years. Capitalized costs include salaries, benefits, and stock-based compensation charges for employees that are directly involved in developing its cloud security platform during the post planning and implementation phases. Capitalized costs related to internally developed software under development are treated as construction in progress until the program, feature or functionality is ready for its intended use, at which time amortization commences. These capitalized costs are included in other noncurrent assets on the accompanying consolidated balance sheets. Amortization of internally developed software is reflected in cost of revenues. Costs associated with minor enhancements and maintenance are expensed as incurred. Management evaluates the useful lives of these assets on an annual basis and tests for impairment whenever events or changes in circumstances occur that could impact the recoverability of these assets.	Sales and marketing expenses consist primarily of personnel expenses, comprised of salaries, benefits, sales commissions, performance-based compensation and stock-based compensation for our worldwide sales and marketing teams. Other expenses include marketing and promotional events, lead-generation marketing programs, public relations, travel, software licenses and overhead allocations. Sales commissions cost related to new business and upsells are capitalized as an asset. We amortize the capitalized commission cost as a selling expense on a straight-line basis over a period of five years. We expense sales commissions related to contract renewals. Our new sales personnel are typically not immediately productive, and the resulting increase in sales and marketing expenses we incur when we add new personnel may not result in increased revenues if these new sales personnel fail to become productive. The timing of our hiring of sales personnel, or the participation in new marketing events or programs, and the rate at which these generate incremental revenues, may affect our future operating results. We expect to continue to significantly invest in additional sales personnel worldwide and also in more marketing programs to support new solutions on our platform, which will increase sales and marketing expenses in absolute dollars.
68	Qumu Corp	Costs related to research, design and development of products are charged to research and development expense as incurred. Software development costs are capitalized beginning when a product's technological feasibility has been established and ending when a product is available for general release to customers. The Company uses the working model approach to determine technological feasibility. The Company's products are released soon after technological feasibility has been established.	Sales commissions represent the direct incremental costs related to the acquisition of customer contracts. The Company recognizes commissions as sales and marketing expense at the time the associated product revenue is recognized, requiring establishment of a deferred cost in the event a commission is paid prior to recognition of revenue. The deferred commission amounts are recoverable through the related future revenue streams under non-cancellable customer contracts and commission clawback provisions in the Company's sales compensation plans.
69	Rapid7, Inc.	With respect to software developed for internal use, we capitalize qualifying internal costs, such as payroll and benefits of those employees directly associated with the development of the software, and other qualifying consulting costs. Costs incurred during the preliminary planning and evaluation and post implementation stages of the project are expensed as incurred. Costs incurred during the application development stage of the project are capitalized.	In connection with our adoption of ASC 606, we capitalize commission expenses paid to internal sales personnel and partner referral fees that are incremental costs to obtaining customer contracts. These costs are recorded as deferred contract acquisition costs in the consolidated balance sheets. Costs to obtain a contract for a new customer, up-sell or cross-sell are amortized on a straight-line basis over an estimated period of benefit of five years as sales commissions on initial sales are not commensurate with sales commissions on contract renewals. We determined the estimated period of benefit by taking into consideration the contractual term and expected renewals of customer contracts, our technology and other factors, including the fact that commissions paid on renewals are not commensurate with commissions paid on initial sales transactions. We periodically review the carrying amount of deferred contract acquisition costs to determine whether events or changes in circumstances have occurred that could impact the period of benefit. Commissions paid relating to contract renewals are deferred and amortized on a straight-line basis over the related renewal period. Costs to obtain a contract for professional services arrangements are expensed as incurred in accordance with the practical expedient as the contractual period of our professional services arrangements are oneyear or less.
70	REALPAGE INC	We capitalize certain development costs incurred in connection with software development for our solutions to be marketed to external users. Costs incurred in the preliminary stages of development are expensed as incurred. Once an application has reached the technological feasibility stage, internal and external costs including costs of materials, services, and payroll and payroll-related costs for employees, are capitalized, if direct and incremental, until the software is available for general release to customers. Minor upgrades and enhancements are also expensed as incurred. Costs related to specific upgrades and enhancements when it is probable the expenditures will result in additional functionality are capitalized. Costs incurred to develop software intended solely for our internal use, such as internal administration and finance and accounting systems, are capitalized during the application development stage. Interest on funds used to finance internally developed software up to the date the asset is ready for its intended use, is capitalized and included in the cost of the asset if the asset is actively under development. Capitalized interest was not significant for any period presented. Amortization of internally developed software is included in "Amortization of product technologies" in the accompanying Consolidated Statements of Operations.	We capitalize certain commissions as incremental costs of obtaining a contract with a client if we expect to recover those costs. The commissions are capitalized and amortized over a period of benefit determined to be three years. As of December 31, 2018, the current and noncurrent balances of capitalized commissions costs recorded in the lines "Other current assets" and "Other assets" in the accompanying Consolidated Balance Sheets were $6.7 million and $7.8 million, respectively. During the year ended December 31, 2018, we amortized commission costs totaling $5.4 million. No impairment loss was recognized in relation to these capitalized costs.
71	Red Violet, Inc.	In accordance with ASC 350-40, "Software — internal use software," the Company capitalizes eligible costs, including salaries and staff benefits, share-based compensation expense, traveling expenses incurred by relevant employees, and other relevant costs of developing internal-use software that are incurred in the application development stage when developing or obtaining software for internal use. Once the software developed for internal use is ready for its intended use, it is amortized on a straight-line basis over its useful life.	Footnotes have no discussion of commissions
72	ROSETTA STONE INC	The Company capitalizes software development costs related to certain of its software platforms developed exclusively to provide its web-based subscription services and other general and administrative use software in accordance with ASC subtopic 350-40: Internal-Use Software. Development costs for internal-use software are expensed as incurred until the project reaches the application development stage. Internal-use software is defined to have the following characteristics: (a) the software is internally developed, or modified solely to meet the Company's internal needs, and (b) during the software's development or modification, no substantive plan exists or is being developed to market the software externally. Internally developed software is amortized over a three -year useful life. See Note 4 "Property and Equipment" for a discussion of the software developed for internal use.	Assets are recognized for the incremental costs of obtaining a contract with a customer, which primarily represent sales commissions paid when a customer contract is either recorded as revenue or deferred revenue. Sales commissions paid to obtain non-cancellable subscription contracts are deferred and amortized in proportion to the period over which the revenue is recognized from the related contract. Deferred sales commissions are amortized to sales and marketing expense on the consolidated statements of operations. Deferred sales commissions are classified as non-current unless the associated amortization period is one year or less.

#	Company	Notes on Capitalization of Software Development	Notes on Capitalization of Commissions
73	Sailpoint Technologies Holdings, Inc.	Software development costs for products intended to be sold, leased or otherwise marketed are expensed as incurred until technological feasibility has been established, at which time such costs are capitalized until the product is available for general release to customers. Technological feasibility is established when a product design and working model have been completed and the completeness of the working model and its consistency with the product design have been confirmed by testing. To date, the establishment of technological feasibility of the Company's products and general release of such software have substantially coincided. As a result, software development costs qualifying for capitalization have been insignificant. We have not capitalized any software development costs through December 31, 2018, all such costs have been recorded as research and development expenses, as incurred, in the consolidated statements of operations.	Under ASC 606, sales commissions paid to our sales force and the related employer payroll taxes, collectively "deferred contract acquisition costs", are considered incremental and recoverable costs of obtaining a contract with a customer. The Company capitalizes and amortizes incremental costs of obtaining a contract, such as certain sales commission costs and related payroll taxes, over the remaining contractual term or over an expected period of benefit. The Company has determined the expected period of benefit to be approximately five years. The current portion of these capitalized costs are recorded in "prepayments and other current assets" and noncurrent portion is included in "other non-current assets", in our consolidated balance sheet. Previously under ASC 605, the Company generally capitalized deferred contract costs associated with subscription revenues, which were subsequently amortized over the term of the subscription while deferred contract cost related to license revenues were previously recognized as incurred. We determined the period of benefit by taking into consideration our customer contracts, customer turnover rates, the life of our technology and other factors. The Company applies the practical expedient to expense costs as incurred if the expected amortization period is one year or less. Amortization of deferred contract acquisition costs is included in sales and marketing expenses in the accompanying consolidated statements of operations. There were no impairments to deferred contract acquisition costs for all periods presented.
74	SALESFORCE COM INC	The Company capitalizes costs related to its enterprise cloud computing services and certain projects for internal use incurred during the application development stage. Costs related to preliminary project activities and post implementation activities are expensed as incurred. Internal-use software is amortized on a straight-line basis over its estimated useful life, which is generally three to five years. Management evaluates the useful lives of these assets on an annual basis and tests for impairment whenever events or changes in circumstances occur that could impact the recoverability of these assets.	Under the new accounting, the capitalized amounts consist primarily of sales commissions paid to the Company's direct sales force. Capitalized amounts also include (1) amounts paid to employees other than the direct sales force who earn incentive payouts under annual compensation plans that are tied to the value of contracts acquired, (2) commissions paid to employees upon renewals of subscription and support contracts, (3) the associated payroll taxes and fringe benefit costs associated with the payments to the Company's employees, and to a lesser extent (4) success fees paid to partners in emerging markets where the Company has a limited presence.
75	SecureWorks Corp	Qualifying software costs developed for internal use are capitalized when application development begins, it is probable that the project will be completed, and the software will be used as intended. In order to expedite delivery of the Company's security solutions, the application stage typically commences before the preliminary development stage is completed. Accordingly, no significant software development costs have been capitalized during any period presented. The Company capitalizes development costs incurred for software and applications to be sold, leased or otherwise marketed after technological feasibility of the software or application is established. Under the Company's current practice of developing new software, the technological feasibility of the underlying software or application is not established until substantially all product development and testing is complete, which generally includes the development of a working model. Software development costs that have been capitalized to date have been insignificant.	The Company's customer acquisition costs are primarily attributable to sales commissions and related fringe benefits earned by the Company's sales force and such costs are considered incremental costs to obtain a contract. Sales commissions for initial contracts are deferred and amortized taking into consideration the pattern of transfer to which assets relate and may include expected renewal periods where renewal commissions are not commensurate with the initial commission period. The Company recognizes the deferred commissions on a straight-line basis over the life of the customer relationship (estimated to be seven years) in sales and marketing expenses. These assets are classified as non-current, and included in other non-current assets in the Consolidated Statements of Financial Position.
76	ServiceNow, Inc.	Software development costs for software to be sold, leased, or otherwise marketed are expensed as incurred until the establishment of technological feasibility, at which time those costs are capitalized until the product is available for general release to customers and amortized over the estimated life of the product. Technological feasibility is established upon the completion of a working prototype that has been certified as having no critical bugs and is a release candidate. To date, costs and time incurred between the establishment of technological feasibility and product release have not been significant, and all software development costs have been charged to research and development expense in our consolidated statements of comprehensive income (loss). Costs incurred to develop our internal administration, finance and accounting systems are capitalized during the application development stage and generally amortized over the software's estimated useful life of three to five years. Costs related to preliminary project activities and post implementation activities are expensed as incurred.	Deferred commissions are the incremental selling costs that are associated with acquiring customer contracts and consist primarily of sales commissions paid to our sales force and referral fees paid to independent third-parties. Capitalized sales commissions also include the associated payroll taxes and fringe benefit costs associated with payments to our sales employees to the extent they are incremental. Commissions and referral fees earned upon the execution of initial and expansion contracts are primarily deferred and amortized over a period of benefit that we have determined to be five years. Commissions earned upon the renewal of customer contracts are deferred and amortized over the average renewal term. Additionally, for self-hosted offerings, consistent with the recognition of subscription revenues for self-hosted offerings, a portion of the commission cost is expensed upfront when the self-hosted offering is made available. The determination of the period of benefit requires significant judgment by taking into consideration our customer contracts, our technology life cycle and other factors. We include amortization of deferred commissions in sales and marketing expense in our consolidated statements of comprehensive income (loss).
77	SHOTSPOTTER, INC	Costs incurred to develop software for internal use and for the Company's solutions are capitalized and amortized over such software's estimated useful life. Internally developed software costs capitalized during all periods presented have not been material. Property and equipment, net also includes software technology resulting from the Company's acquisition of HunchLab, which is recorded at fair value as of the date of the acquisition, amortized on the straight-line basis over five years.	Topic 606 also requires the capitalization of certain incremental costs of obtaining a contract, which impacts the period in which the Company records sales commissions expense. Historically, the Company recognized sales commissions expense upfront. Under Topic 606, the Company is required to capitalize these expenses. As there are not commensurate commissions earned on renewals of the subscription services, the Company concluded that the capitalized commissions are related to subscription services provided under both the initial contract and renewal periods. Therefore, the amortization period for the capitalized commissions is the customer life, which is determined to be five years. As the capitalized commissions are related to subscription services that are transferred over the customer's life, the Company amortizes the capitalized commissions on a straight-line basis of five years. For commissions that are earned on renewal contracts with an original duration of one year or less, the Company uses the practical expedient applicable to such commissions and recognizes the commissions immediately as expense instead of capitalizing.
78	SMITH MICRO SOFTWARE, INC.	Development costs incurred in the research and development of new software products and enhancements to existing software products are expensed as incurred until technological feasibility has been established. The Company considers technological feasibility to be established when all planning, designing, coding, and testing has been completed according to design specifications. After technological feasibility is established, any additional costs are capitalized. Through December 31, 2018, software has been substantially completed concurrently with the establishment of technological feasibility; accordingly, no costs have been capitalized to date.	We pay sales commissions to our sales force, which are incremental and recoverable costs of acquiring contracts. Sales commissions are only paid when we earn usage based fees on the contracts. The commission obligation is established each quarter based on the usage based fees earned. The commission obligation is not adjusted by future usage based fees earned, that is each period is discrete from the other. As a result of the structure of the commission plan, we record the commission expense when the commission obligation is determined, which is generally quarterly.

#	Company	Notes on Capitalization of Software Development	Notes on Capitalization of Commissions
79	SolarWinds Corp	Research and development costs are charged to operations as incurred with the exception of those software development costs that may qualify for capitalization. Software development costs incurred subsequent to establishing technological feasibility through the general release of the software products are capitalized. Our new software products and significant enhancements to our existing products are available for general release soon after technological feasibility has been established. We capitalize costs related to developing new functionality for our suite of products that are hosted and accessed by our customers on a subscription basis. We also capitalize costs related to specific upgrades and enhancements when it is probable the expenditures will result in additional functionality. Costs incurred in the preliminary stages of development are expensed as incurred. Once an application has reached the development stage, internal and external costs, if direct and incremental, are capitalized until the software is substantially complete and ready for its intended use. Capitalized costs are recorded as part of other assets, net in our consolidated balance sheets. Maintenance and training costs are expensed as incurred. Internal-use software is amortized on a straight-line basis over its estimated useful life, generally three years, and included in cost of recurring revenue in the consolidated statements of operations.	The new guidance requires the deferral and amortization of certain incremental costs incurred to obtain a contract. This guidance will require us to capitalize and amortize certain sales commission costs over the remaining contractual term or over an expected period of benefit, which we have determined to be approximately six years.
80	SPLUNK INC	Costs related to software acquired, developed or modified solely to meet our internal requirements, with no substantive plans to market such software at the time of development, are capitalized. Costs incurred during the preliminary planning and evaluation stage of the project and during post implementation operational stage are expensed as incurred. Costs incurred during the application development stage of the project are capitalized. We define the design, configuration, and coding process as the application development stage. Costs related to computer software developed for internal use in fiscal 2019 or 2018 were not material.	Sales commissions paid to our sales force and the related payroll taxes are considered incremental and recoverable costs of obtaining a contract with a customer. We generally amortize these costs over the remaining contractual term of our customer contracts, consistent with the pattern of revenue recognition of each performance obligation, for contracts in which the commissions paid on the initial and renewal contracts are commensurate. For certain contracts in which the commissions paid on the initial and renewal contracts are not commensurate, we amortize the commissions paid on the initial contract over an expected period of benefit, which we have determined to be approximately five years. We have determined the period of benefit by taking into consideration our customer contracts, the duration of our relationships with our customers and our technology. In capitalizing and amortizing deferred commissions, we have elected to apply a portfolio approach.
81	SPS COMMERCE INC	Internal-use software implementation costs are capitalized assets included in Other Assets and relate to costs incurred during the application development stage for various internal-use software from hosting arrangements. Capitalized implementation costs are recognized on a straight-line basis beginning when the application is ready for its intended use and ending on the expected termination date of the hosting arrangement, including consideration of the noncancelable contractual term and reasonably certain renewals. The terms are between four and five years for our current hosting arrangements. Recognized expense is reported in general and administrative expense, which is where the hosting arrangement subscriptions are reported.	Sales commissions relating to recurring revenues are considered incremental and recoverable costs of obtaining a contract with our customer. These commissions are calculated based on estimated annual recurring revenue to be generated over the customer's initial contract year. These costs are deferred and amortized over the expected period of benefit which we have determined to be two years. Amortization expense is included in sales and marketing expenses in the accompanying condensed consolidated statements of comprehensive income.
82	Square, Inc.	The Company capitalizes certain cost incurred in developing internal-use software when capitalization requirements have been met. Costs prior to meeting the capitalization requirements are expensed as incurred. Capitalized costs are included in property and equipment, net, and amortized on a straight-lined basis over the estimated useful life of the software and included in product development costs on the consolidated statements of operations.	Footnotes have no discussion of commissions
83	SS&C Technologies Holdings Inc	Significant management judgement is required in determining what projects and costs associated with software development will be capitalized and in assigning estimated economic lives to the completed projects. Management specifically evaluates software development projects and analyzes the percentage of completion as compared to the initial plan and subsequent forecasts, milestones achieved and the commitments to continue funding the projects. Significant changes in any of these items may result in discontinuing capitalization of development costs, as well as immediately expensing previously capitalized costs. We review, on a quarterly basis, our capitalized software for possible impairment.	Prior to the adoption of ASC 606, we previously expensed these costs over the length of the initial contract excluding any renewals. The expected customer relationship period is determined based on average historical customer relationship periods, including expected renewals. Expected renewal periods are only included in the expected customer relationship period if commission amounts paid upon renewal are not commensurate with amounts paid on the initial contract. Incremental costs of obtaining a contract include only those costs we incur to obtain a contract that we would not have incurred if the contract had not been obtained. We have determined that certain commissions programs meet the requirements to be capitalized. Certain sales commissions associated with multi-year contracts are subject to an employee service requirement. As an action other than each party approving the contract is required to trigger payment of these sales commissions, they are not considered incremental costs to obtain a contract and are expensed as incurred. These costs are included in selling and marketing and general and administrative expenses. We expense sales commissions as incurred when the amortization period would have been one year or less.
84	SYMANTEC CORP	The costs for the development of new software products and substantial enhancements to existing software products are expensed as incurred until technological feasibility has been established, at which time any additional costs would be capitalized in accordance with the accounting guidance for software. Because our current process for developing software is essentially completed concurrently with the establishment of technological feasibility, which occurs upon the completion of a working model, no costs have been capitalized for any of the periods presented. We capitalize qualifying costs incurred during the application development stage related to software developed for internal-use and enterprise cloud computing services and amortize them over the estimated useful life of 3 years. We expense costs incurred related to the planning and post-implementation phases of development as incurred.	Sales commissions that are incremental to obtaining a customer contract for which revenue is deferred are accrued and capitalized and subsequently amortized to sales and marketing expense on a straight-line basis over three years, the expected period of benefit. In arriving at the average period of benefit, we evaluate both qualitative and quantitative factors which include historical customer renewal rates, anticipated renewal periods, and the estimated useful life of the underlying product sold as part of the transaction. Commissions paid on renewals of support and maintenance are not commensurate with the initial commissions paid, and therefore the amortization period of commissions for initial contracts considers the estimated term of specific anticipated renewal contracts over the life of the customer.
85	SYNOPSYS INC	Intangible assets consist of acquired technology, certain contract rights, customer relationships, trademarks and trade names, capitalized software, and in-process research and development. These intangible assets are acquired through business combinations, direct purchases, or internally developed capitalized software. Intangible assets are amortized on a straight-line basis over their estimated useful lives which range from one to ten years, except for in-process research and development (IPR&D) projects not yet completed. IPR&D assets are amortized over their estimated useful lives upon completion or are written off upon abandonment.	Topic 606 also requires the deferral of incremental costs of obtaining a contract with a customer. This will require the Company to capitalize incremental costs such as commissions and other costs directly related to obtaining customer contracts and amortize those costs over the period the assets are expected to contribute future cash flows. As commissions paid for renewals are commensurate with the amounts paid for initial contracts, the deferred incremental costs will be recognized over the contract term. Under the existing rules, the Company expenses commissions as incurred. There will be an immaterial balance sheet impact at the date of adoption from recognizing the deferred incremental costs of obtaining contracts with customers. This change will not have a material impact to the Company's commission expenses as the amortization of capitalized commissions under Topic 606 will be similar to the amount of commissions expense for fiscal year 2019 under Topic 605.

#	Company	Notes on Capitalization of Software Development	Notes on Capitalization of Commissions
86	Tableau Software Inc	Software development costs associated with the development of new products, enhancements of existing products and quality assurance activities consist of employee, consulting and other external personnel costs. The costs incurred internally from the research and development ("R&D") of computer software products are charged to expense until technological feasibility has been established for the product. Once technological feasibility is established, all software costs are capitalized until the product is available for release to customers. Judgment is required in determining when technological feasibility of a product is established. To date, we have determined that technological feasibility of software products is reached shortly before the products are released. Costs incurred after establishment of technological feasibility have not been material, and therefore, we have expensed all R&D costs as they were incurred. R&D expenses primarily consist of personnel-related costs attributable to our R&D personnel and allocated overhead, which includes facilities-related costs.	We recognize an asset for the incremental costs of obtaining a contract with a customer if we expect the benefit of those costs to be longer than one year. We have determined that certain costs related to our sales incentive programs meet the requirements to be capitalized and deferred. Assets recorded are included in prepaid expenses and other current assets and other long-term assets. We amortize these deferred costs proportionate with related revenues over the benefit period, currently estimated to be four years. We consider the benefit period to exceed the initial contract term for certain costs because of anticipated renewals and because our sales commission rates for renewal contracts are not commensurate with sales commissions for initial contracts. Prior to our adoption of the new revenue recognition standard, we recognized sales commissions expense as incurred.
87	TAKE TWO INTERACTIVE SOFTWARE INC	Capitalized software development costs include direct costs incurred for internally developed titles and payments made to third-party software developers under development agreements. We capitalize internal software development costs (including specifically identifiable employee stock-based compensation, payroll expense, and incentive compensation costs related to the completion and release of titles, as well as third-party production and other content costs), subsequent to establishing technological feasibility of a software title. Technological feasibility of a product includes the completion of both technical design documentation and game design documentation. Significant management judgments are made in the assessment of when technological feasibility is established. For products where proven technology exists, this may occur early in the development cycle. Technological feasibility is evaluated on a product-by-product basis. We enter into agreements with third-party developers that require us to make payments for game development and production services. In exchange for our payments, we receive the exclusive publishing and distribution rights to the finished game title as well as, in some cases, the underlying intellectual property rights. Such agreements typically allow us to fully recover these payments to the developers at an agreed upon royalty rate earned on the subsequent sales of such software, net of any agreed upon costs. Prior to establishing technological feasibility of a product, we record any costs incurred by third-party developers as research and development expenses. Subsequent to establishing technological feasibility of a product, we capitalize all development.	Footnotes have no discussion of commissions
88	Tenable Holdings, Inc.	Software developed for internal use, with no substantive plans to market such software at the time of development, are capitalized and included in property and equipment, net in the consolidated balance sheets. Costs incurred during the preliminary planning and evaluation and post implementation stages of the project are expensed as incurred. Costs incurred during the application development stage of the project are capitalized.	Sales commissions, including related incremental fringe benefit costs, are considered to be incremental costs of obtaining a contract, and therefore are deferred over an estimated period of benefit, which ranges between three and four years for subscription arrangements and five years for perpetual license arrangements. We have estimated the period of benefit based on the expected contract term including renewal periods, the lifecycle of our technology and other factors. Sales commissions on contract renewals are capitalized and amortized ratably over the contract term, with the exception of contracts with renewal periods that are one year or less, in which case the incremental costs are expensed as incurred. While we believe that the estimates we have made are reasonable and appropriate, different assumptions and estimates could materially impact our reported financial results.
89	TERADATA CORP /DE/	Direct development costs associated with internal-use software are capitalized and amortized over the estimated useful lives of the resulting software. The costs are capitalized when both the preliminary project stage is completed and it is probable that computer software being developed will be completed and placed in service. Teradata typically amortizes capitalized internal-use software on a straight-line basis over three years beginning when the asset is substantially ready for use.	The Company capitalizes sales commissions and other contract costs that are incremental direct costs of obtaining customer contracts if the expected amortization period of the asset is greater than one year. These costs are recorded in Other Assets on the Company's balance sheet. The capitalized amounts are calculated based on the total contract value for individual multi-term contracts. The judgments made in determining the amount of costs incurred include whether the commissions are in fact incremental and would not have occurred absent the customer contract. Costs to obtain a contract are amortized as selling, general and administrative expenses on a straight-line basis over the expected period of benefit, which is typically four years. These costs are periodically reviewed for impairment.
90	TWILIO INC	We capitalize certain costs related to the development of our platform and other software applications for internal use. In accordance with authoritative guidance, we begin to capitalize our costs to develop software when preliminary development efforts are successfully completed, management has authorized and committed project funding, and it is probable that the project will be completed and the software will be used as intended. We stop capitalizing these costs when the software is substantially complete and ready for its intended use, including the completion of all significant testing. These costs are amortized on a straight-line basis over the estimated useful life of the related asset, generally estimated to be three years. We also capitalize costs related to specific upgrades and enhancements when it is probable the expenditure will result in additional functionality and expense costs incurred for maintenance and minor upgrades and enhancements. Costs incurred prior to meeting these criteria together with costs incurred for training and maintenance are expensed as incurred and recorded within product development expenses in our consolidated statements of operations.	The primary impact relates to the deferral of incremental commission costs of obtaining new contracts. Under ASC 605, the Company deferred only direct and incremental commission costs to obtain a contract and amortized those costs on a straight-line basis over the term of the related subscription contract. Under the new standard, the Company defers all incremental commission costs to obtain the contract and amortizes these costs on a straight-line basis over the expected term of benefit of the underlying asset, which was determined to be five years
91	TYLER TECHNOLOGIES INC	We capitalize software development costs upon the establishment of technological feasibility and prior to the availability of the product for general release to customers. Software development costs primarily consist of personnel costs and rent for related office space. We begin to amortize capitalized costs when a product is available for general release to customers. Amortization expense is determined on a product-by-product basis at a rate not less than straight-line basis over the product's remaining estimated economic life. We have not capitalized any internal software development costs in any of the periods presented.	Sales commissions earned by our sales force are considered incremental and recoverable costs of obtaining a contract with a customer. Sales commissions for initial contracts are deferred and then amortized on a straight-line basis over a period of benefit that we have determined to be three to seven years. We utilized the 'portfolio approach' practical expedient in ASC 606-10-10-4, which allows entities to apply the guidance to a portfolio of contracts with similar characteristics because the effects on the financial statements of this approach would not differ materially from applying the guidance to individual contracts. Using the 'portfolio approach', we determined the period of benefit by taking into consideration our customer contracts, our technology life-cycle and other factors. Sales commissions for renewal contracts are generally not paid in connection with the renewal of a contract. In the small number of instances where a commission is paid on a renewal, it is not commensurate with the commission paid on the initial sale and is recognized over the term of renewal, which is generally one year. Amortization expense related to deferred commissions is included in selling, general and administrative expenses in the accompanying consolidated statements of income
92	ULTIMATE SOFTWARE GROUP INC	We follow the guidance of Accounting Standards Codification ("ASC") Topic 350-40, "Intangibles Goodwill and Other-Internal Use Software" ("ASC 350"), in accounting for costs related to software developed for internal use. ASC 350 requires companies to capitalize qualifying computer software costs, which are incurred during the application development stage. Costs capitalized during the application development stage include external direct costs of materials and services consumed in developing or obtaining internal-use software and payroll and payroll-related costs for employees who are directly associated with, and who devote time to, the internal-use computer software. In addition to capitalizing costs for software (which are used by us in our general operations, for internal purposes), we also capitalize costs under ASC Topic 350-40 for certain software development projects related to our suite of products sold to our customers exclusively on a subscription basis under our software-as-a-service ("SaaS") offering of UltiPro.	we adopted the requirements Topic 606 resulting in a change in the amortization period of deferred incremental commission costs from 2 - 3 years under Topic 605, to 7 years under Topic 606. The 7 year amortization period is based on analyzing our customer contract term periods and our customer life, taking into consideration technological changes for our UltiPro product offering. Deferred incremental commission costs are amortized on a systemic basis, consistent with the pattern of transfer of the goods or services to which the asset relates.

#	Company	Notes on Capitalization of Software Development	Notes on Capitalization of Commissions
93	Upland Software, Inc.	Software development costs are expensed as incurred until the point the Company establishes technological feasibility. Technological feasibility is established upon the completion of a working model. Costs incurred by the Company between establishment of technological feasibility and the point at which the product is ready for general release are capitalized, subject to their recoverability, and amortized over the economic life of the related products. Because the Company believes its current process for developing its software products essentially results in the completion of a working product concurrent with the establishment of technological feasibility, no software development costs have been capitalized to date. There were no software development costs required to be capitalized under ASC 985-20, Costs of Software to be Sold, Leased or Marketed, and under ASC 350-40, Internal-Use Software.	Sales commissions earned by our sales force are considered incremental and recoverable costs of obtaining a contract with a customer. Deferred commissions and other costs for a particular customer agreement for initial contracts are amortized over the expected life of the customer relationships, which has been determined to be approximately 6 years based on historical data and managements judgment, once revenue recognition criteria are met. We utilized the 'portfolio approach' practical expedient permitted under ASC 606-10-10-4, which allows entities to apply the guidance to a portfolio of contracts with similar characteristics as the effects on the financial statements of this approach would not differ materially from applying the guidance to individual contracts. The portion of capitalized costs expected to be amortized during the succeeding twelve-month period is recorded in current assets as deferred commissions, current, and the remainder is recorded in long-term assets as deferred commissions, net of current portion. Amortization expense is included in sales and marketing expenses in the accompanying condensed consolidated statements of operations
94	VARONIS SYSTEMS INC	Research and development costs are charged to the statement of operations as incurred. ASC No. 985-20, “Software-Costs of Software to Be Sold, Leased, or Marketed,” requires capitalization of certain software development costs subsequent to the establishment of technological feasibility. Based on the Company’s product development process, technological feasibility is established upon the completion of a working model. The Company does not incur material costs between the completion of the working model and the point at which the product is ready for general release. Therefore, research and development costs are charged to the statement of operations as incurred.	The Company pays sales commissions to sales and marketing and certain management personnel based on their attainment of certain predetermined sales goals. Sales commissions earned by its employees are considered incremental and recoverable costs of obtaining a contract with a customer. Sales commissions paid for initial contracts, which are not commensurate with sales commissions paid for renewal contracts, are capitalized and amortized over an expected period of benefit. Based on its technology, customer contracts and other factors, the Company has determined the expected period of benefit to be approximately four years. Sales commissions for renewal contracts are capitalized and then amortized on a straight line basis over the related contractual renewal period. Amortization expenses related to these costs are mostly included in sales and marketing expenses in the accompanying consolidated statements of operations.
95	VEEVA SYSTEMS INC	Capitalization of internal-use software development expenses and the subsequent amortization of the capitalized expenses. We capitalize certain costs incurred for the development of computer software for internal use and then amortize those costs over the estimated useful life. Capitalization and amortization of software development costs can vary significantly depending on the timing of products reaching technological feasibility and being made generally available. Our internal management reporting processes exclude both the capitalization of software (which would otherwise result in a reduction in net research and development operating expenses) and the amortization of capitalized software (which would otherwise result in an increase in cost of subscription revenues) when preparing budgets, plans and reviewing internal performance. Moreover, because of the variety of approaches taken and the subjective assumptions made by other companies in this area, we believe that excluding the effects of capitalized software costs allows investors to make more meaningful comparisons between our operating results and those of other companies	Deferred costs include sales commissions associated with obtaining a contract with a customer. These costs are deferred and then amortized over a period of benefit that we have determined to be three years. We determined the period of benefit by taking into consideration our customer contracts, our technology and other factors. Amortization expense is included in sales and marketing expenses in the accompanying consolidated statements of operations.
96	VMWARE, INC.	Costs associated with internal-use software systems, including those used to provide hosted services, during the application development stage are capitalized. Capitalization of costs begins when the preliminary project stage is completed, management has committed to funding the project, and it is probable that the project will be completed and the software will be used to perform the function intended. Capitalization ceases at the point when the project is substantially complete and is ready for its intended purpose. The capitalized amounts are included in property and equipment, net on the consolidated balance sheets.	Sales commissions, including the employer portion of payroll taxes, earned by our sales force are considered incremental and recoverable costs of obtaining a contract, and are deferred and generally amortized on a straight-line basis over the expected period of benefit. The expected period of benefit is determined using the contract term or underlying technology life, if renewals are expected and the renewal commissions are not commensurate with the initial commissions. The determination of the expected period of benefit requires us to make significant estimates and assumptions, including the life of the underlying technology and the estimated period of contract renewal. We believe the assumptions and estimates we have made are reasonable. Differences in the estimated period of benefit could have a significant impact on the timing and amount of amortization expense recognized.
97	Where Food Comes From, Inc.	Internal use software development costs represent the capitalization of certain external and internal computer software costs incurred during the application development stage. The application development stage is characterized by software design and configuration activities, coding, testing and installation. Training costs and maintenance are expensed as incurred, while upgrades and enhancements are capitalized if it is probable that such expenditures will result in additional functionality. Website software development costs related to certain planning and training costs incurred in the development of website software are expensed as incurred, while application development stage costs are capitalized. Software development costs for external sale are capitalized once technological feasibility is achieved. Capitalized costs are amortized over the expected benefit period	Footnotes have no discussion of commissions
98	WORKIVA INC	Footnotes have no discussion of capitalization of SW development	Sales commissions earned by our sales force are considered incremental and recoverable costs of obtaining a contract with a customer. Sales commissions paid where the amortization period is one year or less are expensed as incurred. All other sales commissions are deferred and then amortized on a straight-line basis over a period of benefit that we have determined to be three years. We determined the period of benefit by taking into consideration our standard contract terms and conditions, rate of technological change and other factors. Amortization expense is included in sales and marketing expenses in the accompanying consolidated statements of operations.
99	WORLDS INC	Footnotes have no discussion of capitalization of SW development	Footnotes have no discussion of commissions
100	Zedge, Inc.	The Company accounts for capitalized software and technology development costs in accordance with Financial Accounting Standards Board (“FASB”) Accounting Standard Codification (“ASC”) 350-40. These costs consist of internal development costs on various projects that the Company invested in specific to the various platforms on which the Company operates its service that are capitalized during the application development stage. Capitalized software and technology development costs are included in property and equipment, net and are amortized over the estimated useful life of the software, generally three years. All ordinary maintenance costs are expensed as incurred.	Footnotes have no discussion of commissions