

GSE SYSTEMS INC  
Form 10-Q  
November 14, 2018  
UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
WASHINGTON, D.C. 20549

FORM 10-Q

(Mark One)

Quarterly Report Pursuant to Section 13 or 15(d)  
of the Securities Exchange Act of 1934  
for the Quarterly Period Ended September 30, 2018

or

Transition Report Pursuant to Section 13 or 15(d)  
of the Securities Exchange Act of 1934  
for the transition period from \_\_\_\_ to \_\_\_\_

Commission File Number 001-14785

GSE Systems, Inc.  
(Exact name of registrant as specified in its charter)

Delaware 52-1868008  
(State of incorporation) (I.R.S. Employer Identification Number)

1332 Londontown Blvd., Suite 200, Sykesville MD 21784  
(Address of principal executive offices) (Zip Code)

Registrant's telephone number, including area code: (410) 970-7800

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Sections 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the Registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes [ X ]  
No [ ]

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such period that the registrant was required to submit and post such files). Yes [ X ]  
No [ ]

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company or an emerging growth company. See the definitions of "large accelerated filer", "accelerated filer", and "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer      Accelerated filer      Non-accelerated filer      Smaller reporting company

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Emerging growth company

(Do not check if a smaller reporting company)

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. [ ]

Indicate by check mark whether the registrant is a shell company (as defined in rule 12(b)-2 of the Exchange Act).  
Yes [ ] No [X]

There were 19,833,103 shares of common stock, with a par value of \$0.01 per share outstanding as of October 31, 2018.

GSE SYSTEMS, INC.  
QUARTERLY REPORT ON FORM 10-Q  
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## PART I - FINANCIAL INFORMATION

## Item 1. Financial Statements

## GSE SYSTEMS, INC. AND SUBSIDIARIES

## CONSOLIDATED BALANCE SHEETS

(in thousands, except share and per share data)

	September 30, 2018	December 31, 2017
	(unaudited)	
<b>ASSETS</b>		
Current assets:		
Cash and cash equivalents	\$ 9,831	\$ 19,111
Restricted cash	9	960
Contract receivables, net	19,238	13,997
Prepaid expenses and other current assets	1,624	2,795
Total current assets	30,702	36,863
Equipment, software, and leasehold improvements	5,290	4,782
Accumulated depreciation	(4,125 )	(3,719 )
Equipment, software, and leasehold improvements, net	1,165	1,063
Software development costs, net	662	690
Goodwill	12,185	8,431
Intangible assets, net	6,597	2,604
Deferred tax assets	6,203	6,494
Other assets	37	37
Total assets	\$ 57,551	\$ 56,182
<b>LIABILITIES AND STOCKHOLDERS' EQUITY</b>		
Current liabilities:		
Current portion of long-term debt, net of debt issuance costs and original issue discount	\$ 1,901	\$ -
Accounts payable	1,096	1,251
Accrued expenses	2,324	2,276
Accrued compensation	3,532	2,866
Billings in excess of revenue earned	7,810	14,543
Accrued warranty	1,105	1,433
Contingent consideration	-	1,701
Other current liabilities	1,035	1,182
Total current liabilities	18,803	25,252
Long-term debt, less current portion, net of debt issuance costs and original issue discount	7,089	-
Other liabilities	1,545	1,258
Total liabilities	27,437	26,510
Commitments and contingencies		
Stockholders' equity:		

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Preferred stock \$0.01 par value, 2,000,000 shares authorized, no shares issued and outstanding	-	-
Common stock \$0.01 par value; 60,000,000 shares authorized, 21,432,014 shares issued, 19,833,103 shares outstanding as of September 30, 2018; 30,000,000 shares authorized, 21,024,395 shares issued, 19,425,484 shares outstanding as of December 31, 2017	214	210
Additional paid-in capital	77,876	76,802
Accumulated deficit	(43,248 )	(42,870 )
Accumulated other comprehensive loss	(1,729 )	(1,471 )
Treasury stock at cost, 1,598,911 shares in 2018 and 2017	(2,999 )	(2,999 )
Total stockholders' equity	30,114	29,672
Total liabilities and stockholders' equity	\$ 57,551	\$ 56,182

The accompanying notes are an integral part of these consolidated financial statements.

GSE SYSTEMS, INC. AND SUBSIDIARIES  
CONSOLIDATED STATEMENTS OF OPERATIONS

(in thousands, except per share data)

(Unaudited)

	Three months ended September 30,		Nine months ended September 30,	
	2018	2017	2018	2017
Revenue	\$21,801	\$15,409	\$69,394	\$48,876
Cost of revenue	16,380	11,185	52,735	35,513
Gross profit	5,421	4,224	16,659	13,363
Operating expenses:				
Selling, general and administrative	4,366	4,374	13,686	11,740
Research and development	247	353	765	1,103
Restructuring charges	70	-	1,177	45
Depreciation	132	79	411	254
Amortization of definite-lived intangible assets	632	50	1,094	148
Total operating expenses	5,447	4,856	17,133	13,290
Operating (loss) income	(26 )	(632 )	(474 )	73
Interest (expense) income, net	(114 )	15	(153 )	60
(Loss) gain on derivative instruments, net	(59 )	71	(306 )	226
Other (expense) income, net	(5 )	33	24	(4 )
(Loss) income before income taxes	(204 )	(513 )	(909 )	355
Provision for income taxes	314	92	124	399
Net loss	\$(518 )	\$(605 )	\$(1,033 )	\$(44 )
Basic loss per common share	\$(0.03 )	\$(0.03 )	\$(0.05 )	\$0.00
Diluted loss per common share	\$(0.03 )	\$(0.03 )	\$(0.05 )	\$0.00

The accompanying notes are an integral part of these consolidated financial statements.

GSE SYSTEMS, INC. AND SUBSIDIARIES  
 CONSOLIDATED STATEMENTS OF COMPREHENSIVE (LOSS) INCOME

(in thousands)

(Unaudited)

	Three months ended September 30, 2018		Nine months ended September 30, 2017	
Net loss	\$(518)	\$(605)	\$(1,033)	\$(44)
Foreign currency translation adjustment	(31)	192	(258)	319
Comprehensive (loss) income	\$(549)	\$(413)	\$(1,291)	\$275

The accompanying notes are an integral part of these consolidated financial statements.

GSE SYSTEMS, INC. AND SUBSIDIARIES  
CONSOLIDATED STATEMENT OF CHANGES IN STOCKHOLDERS' EQUITY  
(in thousands)  
(Unaudited)

	Common Stock		Additional Paid-in Capital	Accumulated Deficit	Accumulated Other Comprehensive Loss	Treasury Stock		Total
	Shares	Amount				Shares	Amount	
Balance, January 1, 2018	21,024	\$ 210	\$ 76,802	\$ (42,870 )	\$ (1,471 )	(1,599)	\$(2,999)	\$29,672
Cumulative effect of adopting ASC 606	-	-	-	655	-	-	-	655
Stock-based compensation expense	-	-	1,370	-	-	-	-	1,370
Common stock issued for options exercised	214	2	37	-	-	-	-	39
Common stock issued for RSUs vested	194	2	(2 )	-	-	-	-	-
Vested RSU shares withheld to pay taxes	-	-	(331 )	-	-	-	-	(331 )
Foreign currency translation adjustment	-	-	-	-	(258 )	-	-	(258 )
Net loss	-	-	-	(1,033 )	-	-	-	(1,033 )
Balance, September 30, 2018	21,432	\$ 214	\$ 77,876	\$ (43,248 )	\$ (1,729 )	(1,599)	\$(2,999)	\$30,114

The accompanying notes are an integral part of these consolidated financial statements.



GSE SYSTEMS, INC. AND SUBSIDIARIES  
CONSOLIDATED STATEMENTS OF CASH FLOWS  
(in thousands)  
(Unaudited)

	Nine months ended September 30,	
	2018	2017
Cash flows from operating activities:		
Net loss	\$(1,033 )	\$(44 )
Adjustments to reconcile net loss to net cash (used in) provided by operating activities:		
Depreciation	411	254
Amortization of definite-lived intangible assets	1,094	148
Amortization of capitalized software development costs	353	352
Stock-based compensation expense	1,535	1,873
Bad debt expense	146	118
Loss (gain) on derivative instruments, net	306	(226 )
Deferred income taxes	74	78
Changes in assets and liabilities:		
Contract receivables, net	(3,165 )	5,318
Prepaid expenses and other assets	948	770
Accounts payable, accrued compensation, and accrued expenses	(965 )	(911 )
Billings in excess of revenue earned	(5,800 )	(5,204 )
Accrued warranty	(256 )	112
Other liabilities	(8 )	359
Cash (used in) provided by operating activities	(6,360 )	2,997
Cash flows from investing activities:		
Capital expenditures	(510 )	(64 )
Capitalized software development costs	(325 )	(126 )
Acquisition of Absolute Consulting, Inc., net of cash acquired	-	(8,455 )
Acquisition of True North Consulting, net of cash acquired	(9,635 )	-
Cash used in investing activities	(10,470 )	(8,645 )
Cash flows from financing activities:		
Proceeds from issuance of long-term debt, net of debt issuance costs and original issue discount	10,154	-
Repayment of long-term debt	(1,164 )	-
Proceeds from issuance of common stock on the exercise of stock options	39	276
Contingent consideration payments to Hyperspring, LLC	(1,701 )	(414 )
RSUs withheld to pay taxes	(331 )	(952 )
Cash provided by (used in) financing activities	6,997	(1,090 )
Effect of exchange rate changes on cash	(398 )	336
Net (decrease) in cash, cash equivalents and restricted cash	(10,231 )	(6,402 )
Cash, cash equivalents, and restricted cash, beginning balance	20,071	22,887
Cash, cash equivalents, and restricted cash, ending balance	\$9,840	\$16,485

The accompanying notes are an integral part of these consolidated financial statements.



GSE SYSTEMS, INC. AND SUBSIDIARIES  
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS  
(Unaudited)

1. Summary of Significant Accounting Policies

Basis of Presentation

The consolidated interim financial statements included herein have been prepared by GSE Systems, Inc. (the Company, GSE, we, us, or our) and are unaudited. In the opinion of the Company's management, all adjustments and reclassifications of a normal and recurring nature necessary to present fairly the financial position, results of operations and cash flows for the periods presented have been made. Certain information and footnote disclosures normally included in financial statements prepared in accordance with U.S. generally accepted accounting principles (U.S. GAAP) have been condensed or omitted. The results of operations for interim periods are not necessarily an indication of the results for the full year. These consolidated financial statements should be read in conjunction with the consolidated financial statements and notes thereto included in the Company's Annual Report on Form 10-K for the year ended December 31, 2017, filed with the Securities and Exchange Commission on March 16, 2018.

The Company has two reportable segments as follows:

Performance Improvement Solutions (approximately 44% of revenue)

Our Performance Improvement Solutions segment primarily encompasses our technical engineering and power plant high-fidelity simulation solutions and interactive computer-based tutorials/simulation focused on the process industry. This segment includes various simulation products, engineering services, and operation training systems delivered across the industries we serve: primarily nuclear and fossil fuel power generation, as well as the process industries. Our simulation solutions include the following: (1) simulation software and services, including operator training systems, for the nuclear power industry, (2) simulation software and services, including operator training systems, for the fossil power industry, and (3) simulation software and services for the process industries used to teach fundamental industry processes and control systems to newly hired employees and for ongoing workforce development and training. GSE and its predecessors have been providing these services since 1976.

Nuclear Industry Training and Consulting (approximately 56% of revenue)

Nuclear Industry Training and Consulting provides highly specialized and skilled nuclear operations instructors, procedure writers, technical engineers, and other consultants to the nuclear power industry. These employees work at our clients' facilities under client direction. Examples of these highly skilled positions are senior reactor operations instructors, procedure writers, project managers, work management specialists, planners and training material developers. This business is managed through the Hyperspring and Absolute subsidiaries. The business model, management focus, margins and other factors clearly separate this business line from the rest of the Company's product and service portfolio. GSE and its predecessors have been providing these services since 1997.

Financial information about the two business segments is provided in Note 18 of the accompanying condensed consolidated financial statements.

The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements as well as reported amounts of revenues and expenses during the reporting period. The Company's most significant estimates relate to revenue recognition on contracts with customers, allowance for doubtful accounts, product warranties, valuation of goodwill and intangible assets acquired, valuation of long-lived assets to be disposed of, valuation of contingent consideration issued in business acquisitions, valuation of

stock-based compensation awards, and the recoverability of deferred tax assets. Actual results could differ from these estimates and those differences could be material.

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## Revenue recognition

The Company derives its revenue through three broad revenue streams: 1) System Design and Build (SDB), 2) Software, and 3) Training and Consulting services. We recognize revenue from SDB and software contracts mainly through the Performance Improvement Solutions segment and the training and consulting service contracts through both the Performance Improvement Solutions segment and Nuclear Industry Training and Consulting segment.

The SDB contracts are typically fixed-price and consist of initial design, engineering, assembly and installation of training simulators which include hardware, software, labor, and post contract support (PCS) on the software. We generally have two main performance obligations for an SDB contract: the training simulator build and PCS. The training simulator build performance obligation generally includes hardware, software, and labor. The transaction price under the SDB contracts is allocated to each performance obligation based on its standalone selling price. We recognize the training simulator build revenue over the construction and installation period using the cost-to-cost input method as our performance creates or enhances assets with no alternative use to the Company, and we have an enforceable right to payment for performance completed to date. Cost-to-cost input method best measures the progress toward complete satisfaction of the performance obligation. PCS revenue is recognized ratably over the service period, as PCS is deemed as a stand-ready obligation.

In applying the cost-to-cost input method, we use the actual costs incurred to date relative to the total estimated costs to measure the work progress toward the completion of the performance obligation and recognize revenue accordingly. Estimated contract costs are reviewed and revised periodically as the work progresses, and the cumulative effect of any change in estimates is recognized in the period in which the change is identified. Estimated losses are recognized in the period such losses are identified. Uncertainties inherent in the performance of contracts include labor availability and productivity, material costs, change order scope and pricing, software modification and customer acceptance issues. The reliability of these cost estimates is critical to the Company's revenue recognition as a significant change in the estimates can cause the Company's revenue and related margins to change significantly from the amounts estimated in the early stages of the project.

The SDB contracts generally provide a one-year base warranty on the systems. The base warranty will not be accounted for as a separate performance obligation under the contract because it does not provide the customer with a service in addition to the assurance that the completed project complies with agreed-upon specifications. Warranties extended beyond our typical one-year period will be evaluated on a case by case basis to determine if it provides more than just assurance that the product operates as intended, which requires carve-out as a separate performance obligation.

Revenue from the sale of perpetual standalone software licenses, which do not require significant modification or customization, is recognized upon its delivery to the customer. Revenue from the sale of term or subscription-based standalone software licenses, which do not require significant modification or customization, is recognized ratably over the term of such licenses following delivery to the customer. Delivery is considered to have occurred when the customer receives a copy of the software and is able to use and benefit from the software.

A software license sale contract with multiple deliverables typically includes the following elements: license, installation and training services and PCS. The total transaction price of a software license sale contract is typically fixed, and is allocated to the identified performance obligations based on their relative standalone selling prices. Revenue is recognized as the performance obligations are satisfied. Specifically, license revenue is recognized when the software license is delivered to the customer; installation and training revenue is recognized when the installation and training is completed without regard to a detailed evaluation of the point in time criteria due to the short-term nature of the installation and training services (one to two days on average); and PCS revenue is recognized ratably over the service period, as PCS is deemed as a stand-ready obligation.

The contracts within the training and consulting services revenue stream are either time and materials (T&M) based or fixed-price based. Under a typical T&M contract, the Company is compensated based on the number of hours of approved time provided by temporary workers and the bill rates which are fixed per type of work, as well as approved expenses incurred. The customers are billed on a regular basis, such as weekly, biweekly or monthly. In accordance with Accounting Standards Codification (ASC) 606-10-55-18, we elected to apply the "right to invoice" practical expedient, under which we recognize revenue in the amount to which we have the right to invoice. The invoice amount represents the number of hours of approved time worked by each temporary worker multiplied by the bill rate for the type of work, as well as approved expenses incurred. Under a typical fixed-price contract, we recognize the revenue over the service period using the cost-to-cost input method as the Company's performance does not create an asset with an alternative use to the Company, and we have an enforceable right to payment for performance completed to date. Cost-to-cost input method best measures the progress toward complete satisfaction of the performance obligation.

For contracts with multiple performance obligations, we allocate the contract price to each performance obligation based on its relative standalone selling price. We generally determine standalone selling prices based on the prices charged to customers.

## 2. Recent Accounting Pronouncements

### Accounting pronouncements recently adopted

In May 2014, the Financial Accounting Standards Board (FASB) issued Accounting Standards Update (ASU) No. 2014-09, Revenue from Contracts with Customers (ASU 2014-09), which provides guidance for revenue recognition. Subsequently, the FASB issued a series of updates to the revenue recognition guidance in ASC 606, Revenue from Contracts with Customers (ASC 606). Under ASC 606, revenue is recognized when a customer obtains control of promised goods or services and is recognized at an amount that reflects the consideration expected to be received in exchange for such goods or services. In addition, the new accounting standard requires disclosure of the nature, amount, timing, and uncertainty of revenue and cash flows arising from contracts with customers. ASU 2014-09 is effective for the fiscal year ending December 31, 2018 and interim periods therein.

We adopted ASU 2014-09 and all the related updates (collectively, the new revenue standard) on January 1, 2018 using the modified retrospective transition method. The new revenue standard was applicable to (1) all new contracts entered into after January 1, 2018 and (ii) all existing contracts for which all (or substantially all) of the revenue has not been recognized under legacy revenue guidance. We recognized the cumulative effect of initially applying the new revenue standard as an increase of \$0.7 million to the opening balance of accumulated deficit. The comparative information has not been restated and continues to be reported under the accounting standards in effect for those periods.

This adoption primarily affected our software license sales with multiple deliverables, which typically include the following elements: license, installation and training services and PCS. Under the legacy revenue recognition standard, due to the lack of vendor specific objective evidence (VSOE), revenue was recognized ratably over the PCS period. Under the new revenue standard, the total transaction price is allocated to the identified performance obligations based on their relative standalone selling prices, and revenue is recognized as the performance obligations are satisfied.

The impact of adoption on our consolidated statement of operations and balance sheet was as follows (in thousands):

### Income Statement

	Three months ended September 30, 2018			Nine months ended September 30, 2018		
	As Reported	Balance without adoption of ASC 606	Effect of Change	As Reported	Balance without adoption of ASC 606	Effect of Change
Revenue	\$21,801	\$21,952	\$ (151 )	\$69,394	\$69,666	\$ (272 )
Gross profit	5,421	5,572	(151 )	16,659	16,931	(272 )
Provision for income taxes	314	296	(18 )	124	201	77
Net loss	(518 )	(349 )	(169 )	(1,033 )	(838 )	(195 )

### Balance Sheet

	September 30, 2018 Balance without adoption of ASC 606	Effect of Change
As Reported		

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Contract receivables, net	\$19,238	\$19,238	\$ -
Deferred tax assets	6,203	6,367	(164 )
Billings in excess of revenue earned	7,810	8,492	(682 )
Accumulated deficit	(43,248)	(43,766)	518

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In August 2016, the FASB issued ASU No. 2016-15, Classification of Certain Cash Receipts and Cash Payments (ASU 2016-15). The new guidance addresses eight specific cash flow issues and applies to all entities that are required to present a statement of cash flows. ASU 2016-15 was effective for fiscal reporting periods beginning after December 15, 2017, including interim reporting periods within those fiscal years. We adopted ASU 2016-15 on January 1, 2018, on a retrospective basis. Upon the adoption of ASU 2016-15, cash payments made to settle a contingent consideration liability from an acquisition in excess of the amount recognized at the acquisition date are classified as operating activities, which were previously presented as financing activities. The comparative statement of cash flows has been restated to include only the payments made to settle the contingent liability related to the original amount recognized at the acquisition date in the financing activities; previously, the payment of \$0.4 million related to fair value adjustment and interest accretion of the contingent liability was included in financing activities. Upon the adoption of ASU 2016-15, it was reclassified as an operating activity.

In November 2016, the FASB issued ASU No. 2016-18, Restricted Cash (ASU 2016-18). The new guidance applies to all entities that have restricted cash or restricted cash equivalents and are required to present a statement of cash flows. This update is intended to reduce diversity in cash flow presentation of restricted cash and restricted cash equivalents and requires entities to include all cash and cash equivalents, both restricted and unrestricted, in the beginning-of-period and end-of-period totals presented on the statement of cash flows. We adopted ASU 2016-18 effective January 1, 2018, on a retrospective basis. As the result of the adoption of ASU 2016-18, we restated the statement of cash flows for the comparative period to include both restricted and unrestricted cash in the beginning-of-period and end-of-period totals, and eliminated the transfers between restricted and unrestricted cash in the statement of cash flows.

In January 2017, the FASB issued ASU No. 2017-01, Business Combinations: Clarifying the definition of a Business, which amends the definition of a business. ASU 2017-01 was effective for acquisitions commencing on or after December 15, 2017, with early adoption permitted. We adopted ASU 2017-01 effective January 1, 2018. ASU 2017-01 is applied prospectively to acquisitions commencing on or after the effective date.

In May 2017, the FASB issued ASU No. 2017-09, Compensation - Stock Compensation (ASU 2017-09). The new guidance is intended to provide clarity and reduce both (1) diversity in practice and (2) cost and complexity when applying the guidance on ASC 718, Compensation – Stock Compensation. Entities are required to apply modification accounting for any change to an award, except for a change that is deemed to be purely administrative in nature. ASU 2017-09 provides guidance about which changes to the terms or conditions of a share-based award require an entity to apply modification accounting in ASC 718. The amendments in this update were effective for all entities and for annual periods, and interim periods within those annual periods, beginning after December 15, 2017. We adopted ASU 2017-09 effective January 1, 2018, on a prospective basis. The adoption of this standard did not have a significant impact to our financial statements or financial statement disclosures.

Accounting pronouncements not yet adopted

In February 2016, the FASB issued ASU No. 2016-02, Leases. The new standard establishes a right-of-use (ROU) model that requires a lessee to record a ROU asset and a lease liability on the balance sheet for all leases with terms longer than 12 months. Leases will be classified as either finance or operating, with classification affecting the pattern of expense recognition in the income statement. The new standard is effective for fiscal years beginning after December 15, 2018, including interim periods within those fiscal years. A modified retrospective transition approach is required for lessees with capital and operating leases existing at, or entered into after, the beginning of the earliest comparative period presented in the consolidated financial statements, with certain practical expedients available. We are still evaluating the impact of the pending adoption of the new standard on the consolidated financial statements, and we expect that, upon adoption, the recognition of ROU assets and lease liabilities could be material.

In June 2016, the FASB issued ASU 2016-13, Financial Instruments - Credit Losses, which introduces new guidance for credit losses on instruments within its scope. The new guidance introduces an approach based on expected losses

to estimate credit losses on certain types of financial instruments, including, but not limited to, trade and other receivables, held-to-maturity debt securities, loans and net investments in leases. The new guidance also modifies the impairment model for available-for-sale debt securities and requires the entities to determine whether all or a portion of the unrealized loss on an available-for-sale debt security is a credit loss. The standard also indicates that entities may not use the length of time a security has been in an unrealized loss position as a factor in concluding whether a credit loss exists. The ASU is effective for public companies for fiscal years beginning after December 15, 2019, and interim periods within those fiscal years. Early adoption is permitted for all entities for fiscal years beginning after December 15, 2018, including interim periods within those fiscal years. The Company is currently evaluating the effects, if any, that the adoption of this guidance will have on the Company's consolidated financial position, results of operations and cash flows.

In January 2017, the FASB issued ASU No. 2017-04, Simplifying the Test for Goodwill Impairment (ASU 2017-04). ASU 2017-04 simplifies the accounting for goodwill impairment by eliminating Step 2 of the current goodwill impairment test, which required a hypothetical purchase price allocation. Goodwill impairment will now be the amount by which the reporting unit's carrying value exceeds its fair value, limited to the carrying value of the goodwill. ASU 2017-04 is effective for financial statements issued for fiscal years, and interim periods beginning after December 15, 2019. We are currently evaluating the potential impact of the adoption of ASU 2017-04 on our consolidated financial statements.

## 3. Basic and Diluted Loss per Common Share

Basic loss per share is computed by dividing net loss by weighted average number of outstanding common shares outstanding for the period. Diluted net loss per share adjusts the weighted average shares outstanding for the potential dilution that could occur if outstanding vested stock options were exercised, unless the impact of potential dilutive common shares outstanding has an anti-dilutive impact on diluted net loss per share.

The number of common shares and common share equivalents used in the determination of basic and diluted loss per share were as follows:

(in thousands, except for share amounts)	Three months ended September 30,		Nine months ended September 30,	
	2018	2017	2018	2017
Numerator:				
Net loss	\$(518	) \$(605	) \$(1,033	) \$(44
Denominator:				
Weighted-average shares outstanding for basic loss per share	19,786,888	19,280,770	19,620,207	19,204,778
Effect of dilutive securities:				
Stock options and restricted stock units	-	-	-	-
Adjusted weighted-average shares outstanding and assumed conversions for diluted loss per share	19,786,888	19,280,770	19,620,207	19,204,778
Shares related to dilutive securities excluded because inclusion would be anti-dilutive	713,024	534,833	645,714	550,218

## 4. Acquisitions

True North

On May 11, 2018, GSE, through its wholly-owned subsidiary GSE Performance Solutions, Inc. (Performance Solutions), entered into a membership interest purchase agreement with Donald R. Horn, Jenny C. Horn, and True North Consulting LLC (the True North Purchase Agreement) to purchase 100% of the membership interests in True North Consulting LLC (True North) for \$9.75 million. The purchase price was subject to customary pre- and post-closing working capital adjustments, resulting in total consideration of \$9.9 million. The True North Purchase Agreement contains customary representations, warranties, covenants, and indemnification provisions subject to certain limitations. An escrow of \$1.5 million was funded from the cash paid to the sellers of True North at the closing and is available to GSE to promote retention of key personnel and satisfy indemnification claims for 18 months after the closing. The acquisition of True North was completed on an all-cash transaction basis. In connection with the acquisition, we issued a \$10.3 million term loan to finance the transaction (including the transaction costs). See Note 14. Debt, for further details of the loan.

True North is a provider of technical engineering solutions to nuclear and fossil fuel power plants with an emphasis on regulatory-driven ASME code programs. Located in Montrose, Colorado, True North is a well-regarded service provider to leading companies in the power industry. The acquisition of True North is expected to broaden our engineering services offering, expand our relationships with several of the largest nuclear energy providers in the United States, and add a highly specialized, complimentary talent pool to our employee base.

The following table summarizes the consideration paid to acquire True North and the preliminary fair value of the assets acquired and liabilities assumed at the date of the transaction. Due to the recent completion of the acquisition, the Company recorded the assets acquired and liabilities assumed at their preliminary estimated fair value. As of September 30, 2018, the Company had not finalized the determination of the fair value allocated to various assets and liabilities, including, but not limited to, contract receivables, prepaid expenses and other current assets, intangible assets, accounts payable, accrued expenses, accrued compensation and the residual amount allocated to goodwill. The following amounts except for cash are all reflected in the consolidated statement of cash flows within the "Acquisition of True North Consulting, net of cash acquired" line caption.

(in thousands)

Total purchase price	\$9,941
Purchase price allocation:	
Cash	306
Contract receivables	2,345
Prepaid expenses and other current assets	4
Property, and equipment, net	1
Intangible assets	5,088
Accounts payable, accrued expenses	(1,420)
Accrued compensation	(137 )
Total identifiable net assets	6,187
Goodwill	3,754
Net assets acquired	\$9,941

The fair value of the assets acquired includes gross trade receivables of \$2.3 million, of which the Company expects to collect in full. GSE did not acquire any other class of receivable as a result of the acquisition of True North.

The goodwill is primarily attributable to broader engineering service offering to new and existing customers, the workforce of the acquired business and the significant synergies expected to arise after the acquisition of True North. The total amount of goodwill is expected to be tax deductible. All of the \$3.8 million of goodwill was assigned to our Performance Improvement Solutions segment. As of the report date, the Company is still evaluating the impact of the True North acquisition on our reporting units. As discussed above, the goodwill amount is provisional pending receipt of the final valuations of various assets and liabilities.

The Company identified other intangible assets of \$5.1 million, including customer contracts and relationships, tradename, non-compete agreements, and alliance agreements, with amortization periods of four to fifteen years. The fair value of the intangible assets is provisional pending receipt of the final valuations for these assets.

The following table summarizes the fair value of intangible assets acquired at the date of acquisition and the related weighted average amortization period:

Intangible Assets	Weighted average amortization period  (in years)	Fair Value (in thousands)
Customer relationships	15	\$ 3,758
Tradename	10	582
Non-compete agreements	4	221
Alliance agreements	5	527
Total		\$ 5,088

Absolute

On September 20, 2017, GSE, through Performance Solutions, acquired 100% of the capital stock of Absolute Consulting, Inc. (Absolute) for \$8.8 million pursuant to the Stock Purchase Agreement by and among Performance Solutions and the sellers of Absolute. The purchase price was subject to a customary working capital adjustment resulting in total consideration of \$9.5 million. An indemnification escrow of \$1.0 million was funded from the cash paid to the sellers and is available to GSE and Performance Solutions to satisfy indemnification claims until September 20, 2019. The acquisition of Absolute was completed on an all-cash transaction basis.

Absolute is a provider of technical consulting and staffing solutions to the global nuclear power industry. Located in Navarre, Florida, Absolute has established long-term relationships with blue-chip customers primarily in the nuclear power industry. The acquisition of Absolute is expected to strengthen the Company's global leadership in nuclear training and consulting solutions, add new capacities to our technical consulting and staffing solutions offerings and bring highly complementary customers, while deepening relationships with existing clients.

The following table summarizes the consideration paid to acquire Absolute and the fair value of the assets acquired and liabilities assumed at the date of the transaction.

(in thousands)

Total purchase price	\$9,521
Purchase price allocation:	
Cash	\$455
Contract receivables	5,121
Prepaid expenses and other current assets	68
Property, and equipment, net	184
Intangible assets	2,569
Accounts payable, accrued expenses, and other liabilities	(78 )
Accrued compensation	(1,617)
Total identifiable net assets	6,702
Goodwill	2,819
Net assets acquired	\$9,521

The goodwill is primarily attributable to the additional capacities to offer broader solutions to new and existing customers and the expected enhanced cost and growth synergies as a result of the acquisition. The total amount of goodwill that is expected to be tax deductible is \$2.8 million. All of the \$2.8 million of goodwill was assigned to our Nuclear Industry Training and Consulting segment.

The fair value of the assets acquired includes gross trade receivables of \$5.1 million, which was collected in full after acquisition. GSE did not acquire any other class of receivable as a result of the acquisition of Absolute.

The Company identified \$2.6 million of other intangible assets, including customer relationships and trademarks/names, with amortization periods of three to ten years. The following table summarizes the fair value of intangible assets acquired at the date of acquisition and the related weighted average amortization period:

Intangible Assets	Weighted average amortization period (in years)	Fair Value
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		(in thousands)
Customer relationships	10	\$ 1,856
Trademarks/Names	3	713
Total		\$ 2,569

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## Unaudited Pro Forma Financial Information

The unaudited pro forma financial information in the table below summarizes the combined results of operations for GSE, True North, and Absolute as if the business combinations had occurred on January 1, 2017.

Three months ended September 30, 2018		Nine months ended September 30, 2017	
(unaudited and in thousands)			

Revenue	\$21,801	\$24,975	\$72,564	\$83,337
Net loss	(361 )	(736 )	(2,178 )	(1,224 )

True North contributed revenue of \$3.7 million and net loss of \$(0.4) million to the Company for the period from May 11, 2018 to September 30, 2018.

The pro forma financial information for all periods presented has been calculated after applying GSE's accounting policies and has also included pro forma adjustments resulting from these acquisitions, including amortization charges of the intangible assets identified from these acquisitions, interest expenses related to the financing transaction in connection with the acquisition of True North, and the related tax effects as if aforementioned companies were combined as of January 1, 2017.

For the nine months ended September 30, 2018, the Company has incurred \$0.5 million of transaction costs related to the acquisition of True North. These expenses are included in general and administrative expense on GSE's consolidated statements of operations and are reflected in pro forma loss for the nine months ended September 30, 2017, in the table above.

The pro forma financial information is not intended to reflect the actual results of operations that would have occurred if the acquisition had been completed on January 1, 2017, nor is it intended to be an indication of future operating results.

## 5. Restructuring Activities

On December 27, 2017, the board of GSE Systems, Inc. approved an international restructuring plan to streamline and optimize the Company's global operations. Beginning in December 2017, GSE has been in the process of consolidating its engineering services and R&D activities to Maryland and ceasing an unprofitable non-core business in the United Kingdom (UK). As a result, the Company closed its offices in Nyköping, Sweden; Chennai, India; and Stockton-on-Tees, UK. These actions are designed to improve Company productivity by eliminating duplicate employee functions, increasing GSE's focus on its core business, improving efficiency and maintaining the full range of engineering capabilities while reducing costs and organizational complexity.

GSE eliminated approximately 40 positions due to these changes, primarily in Europe and India, and will undertake other cost-savings measures. The restructuring plan is expected to be completed by the end of 2018. As a result of these efforts, as shown in the table below, GSE expects to record a total restructuring charge of approximately \$2.1 million, primarily related to workforce reductions, contract termination costs and asset write-offs due to the exit activities. As of September 30, 2018, we had recorded restructuring charges totaling \$1.9 million (\$1.2 million during the nine months ended September 30, 2018). In addition to the restructuring costs in the table below, the Company has an estimated \$1.6 million of cumulative translation adjustments that will be charged against net income (loss) and an estimated \$1.0 million of tax benefits that will be realized upon liquidation of these foreign entities. GSE expects to recognize the remaining restructuring costs, currency translation adjustments and tax benefits by the end of 2018.



The following tables summarize the restructuring costs and restructuring liabilities at September 30, 2018:

(in thousands)

	September 30, 2018		
	Total	Costs	Expected
	Expected	Incurred	Costs
	Costs	to Date	Remaining
Employee termination benefits	\$ 824	\$ 824	\$ -
Lease termination costs	591	591	-
Assets write-offs/impairment	222	222	-
Other restructuring costs	432	273	159
Total Restructuring costs	\$2,069	\$ 1,910	\$ 159

The restructuring costs related to our Performance Improvement Solutions segment and are included in the consolidated statements of operations within the "Restructuring charges" line caption.

	Employee	Lease	Other	
	termination	termination	Restructuring	
	benefits	costs	costs	Total
Balance as of January 1, 2018	\$ 465	\$ -	\$ 33	\$498
Accruals	359	591	227	1,177
Payments	(632 )	(613 )	(260 )	(1,505)
Currency translation and other adjustments	(11 )	71	-	60
Balance as of September 30, 2018	\$ 181	\$ 49	\$ -	\$230

The accrued employee termination benefits were included in "accrued compensation", and the accrued lease termination costs were included in "accrued expenses" in the consolidated balance sheets.

## 6. Contingent Consideration

Acquisitions may include contingent consideration payments based on future financial measures of an acquired company. Under ASC 805, Business Combinations, contingent consideration is required to be recognized at fair value as of the acquisition date. We estimate the fair value of these liabilities based on financial projections of the acquired companies and estimated probabilities of achievement. At each reporting date, the contingent consideration obligation is revalued to estimated fair value and changes in fair value subsequent to the acquisition are reflected in income or expense in the consolidated statements of operations, and could cause a material impact to our operating results. Changes in the fair value of contingent consideration obligations may result from changes in discount periods and rates, changes in the timing and amount of revenue and/or earnings estimates and changes in probability assumptions with respect to the likelihood of achieving the various earn-out criteria.

As of December 31, 2017, the remaining contingent consideration, related to our acquisition of Hyperspring in 2014 was \$1.7 million, all of which was paid in January 2018. There was no contingent consideration liability as of September 30, 2018.

## 7. Contract Receivables

Contract receivables represent the Company's unconditional rights to consideration due from a broad base of both domestic and international customers. All contract receivables are considered to be collectible within twelve months.

The components of contract receivables are as follows:

(in thousands)	September 30, 2018	December 31, 2017
Billed receivables	\$ 12,592	\$ 8,154
Unbilled receivables	6,926	5,980
Allowance for doubtful accounts	(280 )	(137 )
Total contract receivables, net	\$ 19,238	\$ 13,997

Management reviews collectability of receivables periodically and records an allowance for doubtful accounts to reduce our receivables to their net realizable value when it is probable that the Company will not be able to collect all amounts due according to the contractual terms of the receivable. The allowance for doubtful accounts is based on historical trends of past due accounts, write-offs, and specific identification and review of customer accounts. During the nine months ended September 30, 2018 and 2017, the Company recorded allowances for doubtful accounts of \$146,000 and \$118,000, respectively.

During October 2018, the Company invoiced \$5.0 million of the unbilled amounts related to the balance at September 30, 2018.

As of September 30, 2018, the Company had two customers that accounted for 19.7% and 13.1% of its consolidated contract receivables, respectively. As of December 31, 2017, the Company had one customer that accounted for 26.7% of its consolidated contract receivables.

## 8. Prepaid Expenses and Other Current Assets

Prepaid expenses and other current assets consist of the following:

(in thousands)	September 30, 2018	December 31, 2017
Inventory	\$ 261	\$ 755
Income taxes receivable	296	418
Prepaid expenses	298	549
Other current assets	769	1,073
Total prepaid expenses and other current assets	\$ 1,624	\$ 2,795

At September 30, 2018 and December 31, 2017, prepaid expenses and other current assets are comprised primarily of inventory and other current assets. Inventory has been purchased and used to support the construction of three major nuclear simulation projects related to a significant contract that was executed during the first quarter of 2016.

Inventory is recorded at the lower of cost or net realizable value in accordance with ASC 330, Inventory. Other current assets primarily includes value-added tax receivables and cash deposited in a Swedish tax account.

## 9. Software Development Costs, Net

Certain computer software development costs are capitalized in the accompanying consolidated balance sheets. Capitalization of computer software development costs begins upon the establishment of technological feasibility. Capitalization ceases and amortization of capitalized costs begins when the software product is commercially available for general release to customers. Amortization of capitalized computer software development costs is included in cost of revenue and is determined using the straight-line method over the remaining estimated economic life of the product, typically three years. On an annual basis, and more frequently as conditions indicate, the Company assesses the recovery of the unamortized software development costs by estimating the net undiscounted cash flows expected to be generated by the sale of the product. If the undiscounted cash flows are not sufficient to recover the unamortized software costs, the Company will write down the carrying amount of such asset to its estimated fair value based on the future discounted cash flows. The excess of any unamortized computer software costs over the related fair value is written down and charged to operations.

Software development costs capitalized were \$53,000 and \$325,000 for the three and nine months ended September 30, 2018, respectively, and \$38,000 and \$126,000 for the three and nine months ended September 30, 2017, respectively. Total amortization expense was \$150,000 and \$353,000 for the three and nine months ended September 30, 2018, respectively, and \$118,000 and \$352,000 for the three and nine months ended September 30, 2017, respectively.

## 10. Goodwill and Intangible Assets

The Company's intangible assets include amounts recognized in connection with business acquisitions, including customer relationships, trade names, non-compete agreements and alliance agreements.

The Company reviews goodwill for impairment annually as of December 31 and whenever events or changes in circumstances indicate the carrying value of goodwill may not be recoverable. The Company tests goodwill at the reporting unit level. A reporting unit is an operating segment, or one level below an operating segment, as defined by U.S. GAAP. After the acquisition of Hyperspring on November 14, 2014, the Company determined that it had two reporting units, which are the same as our two operating segments: (i) Performance Improvement Solutions; and (ii) Nuclear Industry Training and Consulting (which includes Hyperspring and Absolute). The change in the net carrying

amount of goodwill from December 31, 2017 through September 30, 2018 was comprised of the following items:

(in thousands)

	Performance Improvement Solutions	Nuclear Industry Training and Consulting	Total
Balance, January 1, 2018	\$ -	\$ 8,431	\$8,431
Acquisition	3,754	-	3,754
Balance, September 30, 2018	\$ 3,754	\$ 8,431	\$12,185

No events or circumstances occurred during the current reporting period that would indicate impairment of such goodwill.

Amortization of intangible assets other than goodwill is recognized on a straight-line basis over the estimated useful life of the intangible assets, except for customer relationships which are recognized in proportion to the related projected revenue streams. Intangible assets with definite lives are reviewed for impairment if indicators of impairment arise. The Company does not have any intangible assets with indefinite useful lives, other than goodwill. There were no indications of impairment of intangible assets during the current reporting period. The increase in intangible assets during the three and nine months ended September 30, 2018 was due to the acquisition of True North. See Note 4, Acquisitions for details.

## 11. Fair Value of Financial Instruments

ASC 820, Fair Value Measurement (ASC 820), defines fair value as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. ASC 820 also establishes a fair value hierarchy which requires an entity to maximize the use of observable inputs and minimize the use of unobservable inputs when measuring fair value.

The levels of the fair value hierarchy established by ASC 820 are:

Level 1: inputs are quoted prices, unadjusted, in active markets for identical assets or liabilities that the reporting entity has the ability to access at the measurement date.

Level 2: inputs are other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly. A Level 2 input must be observable for substantially the full term of the asset or liability.

Level 3: inputs are unobservable and reflect the reporting entity's own assumptions about the assumptions that market participants would use in pricing the asset or liability.

At September 30, 2018, and December 31, 2017, the Company considers the recorded value of certain of its financial assets and liabilities, which consist primarily of cash equivalents, accounts receivable and accounts payable, to approximate fair value based upon their short-term nature.

As discussed in Note 14, Debt, we issued a new term loan to finance the acquisition of True North. As of September 30, 2018, the carrying amount of the long-term debt was \$9.0 million. The carrying value of the Company's long-term debt approximated its fair value based on Level 2 inputs since the debt carries a variable interest rate that is tied to the current LIBOR rate plus an applicable spread.

For the three and nine months ended September 30, 2018, the Company did not have any transfers between fair value Level 1, Level 2 or Level 3. The Company did not hold any non-financial assets or non-financial liabilities subject to fair value measurements on a recurring basis at September 30, 2018.

The following table presents assets and liabilities measured at fair value at September 30, 2018:

(in thousands)	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Total
Money market funds	\$ 852	\$ -	\$ -	\$852
Foreign exchange contracts	-	14	-	14
Total assets	\$ 852	\$ 14	\$ -	\$866
Liability awards	\$ -	\$ (404 )	\$ -	\$(404)
Interest rate swap contract	-	(39 )	-	(39 )
Total liabilities	\$ -	\$ (443 )	\$ -	\$(443)

Money market funds at both September 30, 2018 and December 31, 2017 are included in cash and cash equivalents in the respective consolidated balance sheets.

The following table presents assets and liabilities measured at fair value at December 31, 2017:

(in thousands)	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Total
Money market funds	\$ 3,240	\$ -	\$ -	\$3,240
Foreign exchange contracts	-	201	-	201
Total assets	\$ 3,240	\$ 201	\$ -	\$3,441
Liability awards	\$ -	\$ (242 )	\$ -	\$(242 )
Contingent consideration	-	-	(1,701 )	(1,701 )
Total liabilities	\$ -	\$ (242 )	\$ (1,701 )	\$(1,943 )

The following table provides a roll-forward of the fair value of the contingent consideration categorized as Level 3 for the nine months ended September 30, 2018:

(in thousands)

Balance, January 1, 2018	\$1,701
Payments made on contingent liabilities	(1,701)
Change in fair value	-
Balance, September 30, 2018	\$-

## 12. Derivative Instruments

In the normal course of business, our operations are exposed to fluctuations in foreign currency values and interest rate changes. We may seek to control a portion of these risks through a risk management program that includes the use of derivative instruments.

## Foreign Currency Risk Management

The Company utilizes forward foreign currency exchange contracts to manage market risks associated with the fluctuations in foreign currency exchange rates and minimize credit exposure by limiting counterparties to nationally recognized financial institutions.

As of September 30, 2018, the Company had foreign exchange contracts outstanding of approximately 112.5 million Japanese Yen, 3.2 million Euro, and 0.2 million Australian Dollars at fixed rates. The contracts expire on various dates through December 2018. At December 31, 2017, the Company had contracts outstanding of approximately 162.5 million Japanese Yen, 24,000 Euro, and 0.2 million Australian Dollars at fixed rates.

## Interest Rate Risk Management

As discussed in Note 14, Debt, the Company entered into a new term loan to finance the acquisition of True North in May. The loan bears interest at adjusted one-month LIBOR plus a margin ranging between 2% and 2.75% depending on the overall leverage ratio of the Company. As part of our overall risk management policies, in June 2018, the Company entered into a pay-fixed, receive-floating interest rate swap contract with a notional amount of \$9.0 million to reduce the impact associated with interest rate fluctuations. The notional value amortizes monthly in equal amounts based on the five-year principal repayment terms. The terms of the swap require the Company to pay interest on the basis of a fixed rate of 3.02%, and GSE will receive interest on the basis of one-month USD-LIBOR-BBA-Bloomberg.

The Company reports all derivatives at fair value. These contracts are recognized as either assets or liabilities, depending upon the derivative's fair value. The estimated net fair values of the derivative contracts on the consolidated balance sheets are as follows:

	September 30, 2018	December 31, 2017
(in thousands)		
Prepaid expenses and other current assets		
Foreign exchange contracts	\$ 14	\$ 201
Total asset derivatives	14	201
Other liabilities		
Interest rate swaps	(39 )	-
Total liability derivatives	(39 )	-
Net fair value	\$ (25 )	\$ 201

The Company has not designated the derivative contracts as hedges. The changes in the fair value of the derivative contracts are included in (loss) gain on derivative instruments, net, in the consolidated statements of operations.

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The foreign currency denominated contract receivables, billings in excess of revenue earned, and subcontractor accruals that are related to the outstanding foreign exchange contracts are remeasured at the end of each period into the functional currency using the current exchange rate at the end of the period. The gain or loss resulting from such remeasurement is also included in (loss) gain on derivative instruments, net, in the consolidated statements of operations.

For the three and nine months ended September 30, 2018 and 2017, the Company recognized a net (loss) gain on its derivative instruments as outlined below:

(in thousands)	Three months ended		Nine months ended	
	September 30, 2018	September 30, 2017	September 30, 2018	September 30, 2017
Interest rate swap - change in fair value	\$(28)	\$ -	\$(39 )	\$ -
Foreign exchange contracts-change in fair value	(14)	74	(178)	145
Remeasurement of related contract receivables, billings in excess of revenue earned, and subcontractor accruals	(17)	(3 )	(89 )	81
(Loss) gain on derivative instruments, net	\$(59)	\$ 71	\$(306)	\$ 226



### 13. Stock-Based Compensation

The Company recognizes compensation expense for all equity-based compensation awards issued to employees and directors that are expected to vest. Compensation cost is based on the fair value of awards as of the grant date. The Company recognized \$0.4 million and \$0.5 million of stock-based compensation expense related to equity awards for the three months ended September 30, 2018 and 2017, respectively, and recognized \$1.4 million and \$1.8 million of stock-based compensation expense related to equity awards for the nine months ended September 30, 2018 and 2017, respectively, under the fair value method. In addition to the equity-based compensation expense recognized, the Company also recognized \$105,000 and \$92,000 of stock-based compensation related to the change in the fair value of cash-settled restricted stock units (RSUs) during the three months ended September 30, 2018 and 2017, respectively. During the nine months ended September 30, 2018 and 2017, the Company recorded an expense of \$165,000 and a net reduction of \$80,000 in the fair value of cash-settled RSUs, respectively.

During the three and nine months ended September 30, 2018, the Company granted 0 and 388,526 time-based RSUs with an aggregate fair value of \$0.0 million and \$1.3 million, respectively. For the three and nine months ended September 30, 2017, the Company granted 0 and 396,677 time-based RSUs with an aggregate fair value of \$0.0 million and \$1.4 million, respectively. A portion of the time-based RSUs vest quarterly in equal amounts over the course of eight quarters, a portion vest one year after grant and the remainder vest annually in equal amounts over the course of three years. The fair value of the time-based RSUs is expensed ratably over the requisite service period, which ranges from one to three years.

During the nine months ended September 30, 2018 and 2017, the Company did not grant performance-based RSUs or stock options.

## 14. Debt

## Citizens Bank

The Company entered into a three-year, \$5.0 million revolving line of credit facility (RLOC) with Citizens Bank, National Association (the Bank) on December 29, 2016, to fund general working capital needs. On May 11, 2018, GSE and Performance Solutions (collectively, the Borrower) entered into an Amended and Restated Credit and Security Agreement (the Credit Agreement) with the Bank, amending and restating the Company's existing Credit and Security Agreement with the Bank, which included a \$5.0 million asset-based revolving credit facility between the Borrower and the Bank, to now include (a) a \$5.0 million revolving credit facility not subject to a borrowing base, including a letter of credit sub-facility, and (b) a \$25.0 million delayed draw term loan facility available to be drawn upon for up to 18 months and to finance certain permitted acquisitions by the Borrower. The credit facilities mature in five years and bear interest at LIBOR plus a margin that varies depending on the overall leverage ratio of the Borrower and its subsidiaries. Revolving loans are interest-only with principal due at maturity, while term loans require monthly payments of principal and interest based on an amortization schedule. The Borrower's obligations under the Credit Agreement are guaranteed by GSE's wholly-owned subsidiaries Hyperspring, Absolute, and True North and by any future material domestic subsidiaries (collectively, the Guarantors). The credit facilities are secured by liens on all assets of the Borrower and the Guarantors.

RLOC

We intend to continue using the RLOC for short-term working capital needs and the issuance of letters of credit in connection with business operations. Letter of credit issuance fees range between 1.25% and 2% depending on the Company's overall leverage ratio, and the Company pays an unused RLOC fee quarterly based on the average daily unused balance.

At September 30, 2018, there were no outstanding borrowings under the RLOC and five letters of credit totaling \$2.3 million. The amount available at September 30, 2018, after consideration of letters of credit was approximately \$2.7 million.

Term Loan

As discussed in Note 4, Acquisitions, we acquired True North on May 11, 2018 for total consideration of approximately \$9.9 million in cash. We drew down \$10.3 million to finance the acquisition of True North, \$0.5 million of which was repaid to the Bank on the same day. The loan bears interest at the adjusted one-month LIBOR plus a margin ranging between 2% and 2.75% depending on the overall leverage ratio of the Company and matures in five years. We also incurred \$70,000 debt issuance costs and \$75,000 loan origination fees related to the Credit Agreement. Debt issuance costs and loan origination fees are reported as a direct deduction from the carrying amount of the loan and are amortized over the term of the loan using the effective interest method.

At September 30, 2018, the outstanding long-term debt under the delayed draw term loan facility was as follows:

Long-term debt, net of discount	\$8,990
Less: current portion of long-term debt	(1,901)
Long-term debt, less current portion	\$7,089

The Credit Agreement contains customary covenants and restrictions typical for a financing of this type that, among other things, require the Borrower to satisfy certain financial covenants and restrict the Borrower's and Guarantors' ability to incur additional debt, pay dividends and make distributions, make certain investments and acquisitions, repurchase its stock and prepay certain indebtedness, create liens, enter into agreements with affiliates, modify the nature of its business, enter into sale-leaseback transactions, transfer and sell material assets and merge or consolidate.

Non-compliance with one or more of the covenants and restrictions after any applicable grace period could result in the obligations under the Credit Agreement becoming immediately due and payable and termination of the credit facilities. In addition to non-compliance with covenants and restrictions, the Credit Agreement also contains other customary events of default. If an event of default under the Credit Agreement occurs and is continuing, then the Bank may declare the obligations under the Credit Agreement to be immediately due and payable and may terminate the credit facilities. At September 30, 2018, the Company was in compliance with its financial covenants.

BB&T Bank

At September 30, 2018 and December 31, 2017, the cash collateral account with BB&T totaled \$0.0 million and \$1.0 million, respectively. The balances were classified as restricted cash on the consolidated balance sheets.

## 15. Product Warranty

The Company accrues for estimated warranty costs at the time the related revenue is recognized based on historical experience and projected claims. The Company's SDB contracts generally provide a one-year base warranty on the systems. The portion of the warranty provision expected to be incurred within 12 months is classified as current within accrued warranty and totals \$1.1 million, while the remaining \$0.6 million is classified as long-term within other liabilities. The activity in the accrued warranty accounts is as follows:

(in thousands)

Balance, January 1, 2018	\$ 1,953
Current period provision	(73 )
Current period claims	(183 )
Currency adjustment	(10 )
Balance at September 30, 2018	\$ 1,687

## 16. Revenue

We generate revenue primarily through three broad revenue streams: 1) SDB, 2) Software, and 3) Training and Consulting Services. We recognize revenue from SDB and software contracts mainly through the Performance Improvement Solutions segment and the training and consulting service contracts through both the Performance Improvement Solutions segment and Nuclear Industry Training and Consulting segment.

The following table represents a disaggregation of revenue by type of goods or services for the three and nine months ended September 30, 2018 and 2017, along with the reportable segment for each category:

(in thousands)

	Three months ended September 30, 2018		Nine months ended September 30, 2017 <sup>(1)</sup>	
Performance Improvement Solutions segment				
System Design and Build	\$5,109	\$5,736	\$19,904	\$21,828
Software	586	889	2,001	2,436
Training and Consulting Services	4,154	2,112	8,709	5,829
Nuclear Industry Training and Consulting segment				
Training and Consulting Services	11,952	6,672	38,780	18,783
Total revenue	\$21,801	\$15,409	\$69,394	\$48,876

<sup>(1)</sup> Prior period amounts have not been adjusted under the modified retrospective transition method for the adoption of ASC 606.

SDB contracts are typically fixed-priced, and we receive payments based on a billing schedule as established in our contracts. The transaction price for software contracts is generally fixed. Fees for software are normally due in advance of or shortly after delivery of the software. Fees for PCS are normally paid in advance of the service period. For Training and Consulting Services, the customers are generally billed on a regular basis, such as weekly, biweekly or monthly, for services provided. Contract liability, which we classify as billing in excess of revenue earned, relates

to payments received in advance of performance under the contract. Contract liabilities are recognized as revenue as performance obligations are satisfied.

The following table reflects the balance of contract liabilities and the revenue recognized in the reporting period that was included in the contract liabilities from contracts with customers:

(in thousands)

	September 30, 2018	December 31, 2017
Billings in excess of revenue earned (BIE)	\$ 7,810	\$ 14,543
Revenue recognized in the period from amounts included in BIE at the beginning of the period	\$ 9,934	N/A

For an SDB contract, we generally have two main performance obligations: the training simulator build and PCS. The training simulator build generally includes hardware, software, and labor. We recognize the training simulator build revenue over the construction and installation period using the cost-to-cost input method. In applying the cost-to-cost input method, we use the actual costs incurred to date relative to the total estimated costs to measure the work progress toward the completion of the performance obligation and recognize revenue accordingly. Estimated contract costs are reviewed and revised periodically as the work progresses, and the cumulative effect of any change in estimates is recognized in the period in which the change is identified. Estimated losses are recognized in the period such losses are identified. Uncertainties inherent in the performance of contracts include labor availability and productivity, material costs, change order scope and pricing, software modification and customer acceptance issues. The reliability of these cost estimates is critical to the Company's revenue recognition as a significant change in the estimates can cause the Company's revenue and related margins to change significantly from the amounts estimated in the early stages of the project.

For the three and nine months ended September 30, 2018, the Company recognized revenue of \$1.1 million related to performance obligations satisfied in previous periods.

As of September 30, 2018, the aggregate amount of transaction price allocated to the remaining performance obligations of SDB, software and fixed-price training and consulting services contracts is \$49.6 million. The Company will recognize the revenue as the performance obligations are satisfied, which is expected to occur over the next 12 months.

Part of the training and consulting services contracts are T&M based. Under a typical T&M contract, the Company is compensated based on the number of hours of approved time provided by temporary workers and the bill rates, which are fixed per type of work, as well as approved expenses incurred. As part of our adoption of ASU 2014-09, we have elected to use the optional exemption under ASC 606-10-50-14(b), pursuant to which we have excluded disclosures of transaction prices allocated to remaining performance obligations under such contracts and when we expect to recognize the revenue.

## 17. Income Taxes

The following table presents the (benefit) provision for income taxes and the effective tax rates:

(in thousands)	Three months ended		Nine months ended	
	September 30, 2018	2017	September 30, 2018	2017
Provision for income taxes	\$314	\$92	\$124	\$399
Effective tax rate	(153.9)%	(17.9)%	(13.6)%	112.4%

The Company's income tax (benefit) provision for interim periods is determined using an estimate of its annual effective tax rate, adjusted for discrete items arising in that quarter. Tax expense in 2018 is comprised mainly of federal income tax expense, foreign income tax expense, and state taxes. Tax expense in 2017 is comprised mainly of foreign income tax expense, Alternative Minimum Tax, state taxes, and deferred tax expense relating to the tax amortization of goodwill.

Our effective tax rates were (153.9)% and (13.6)% for the three and nine months ended September 30, 2018. For the three months ended September 30, 2018, the difference between our effective tax rate of (153.9)% and the U.S. statutory federal income tax rate of 21% was primarily due to permanent differences, accruals related to uncertain tax positions for certain foreign tax contingencies, discrete item adjustments for the foreign taxes, and return to provision true-ups which were known as of September 30, 2018. For the nine months ended September 30, 2018, the difference between the effective tax rate of (13.6)% and the U.S. statutory federal income tax rate of 21% was primarily due to changes in jurisdictional income and the inclusion of income (loss) from an acquisition in the second quarter of 2018.

Because of its net operating loss carryforwards, the Company is subject to U.S. federal and state income tax examinations from the year 1997 and forward. The Company is subject to foreign tax examinations by tax authorities for years 2011 forward for Sweden, 2015 forward for China, 2015 forward for India, and 2016 for the UK.

An uncertain tax position taken or expected to be taken in a tax return is recognized in the consolidated financial statements when it is more likely than not (i.e., a likelihood of more than 50%) that the position would be sustained upon examination by tax authorities that have full knowledge of all relevant information. A recognized tax position is then measured at the largest amount of benefit that is greater than 50% likely of being realized upon ultimate settlement. Interest and penalties related to income taxes are accounted for as income tax expense.

The Company recognizes deferred tax assets to the extent that it is believed that these assets are more likely than not to be realized. The Company has evaluated all positive and negative evidence and determined that it will continue to assess a full valuation allowance on its Chinese, Swedish and U.K. net deferred assets as of September 30, 2018. The Company has determined that it is more likely than not that it will realize the benefits of its deferred taxes in the U.S. and India.

The Company follows the guidance in SEC Staff Accounting Bulletin 118 (SAB 118), which provides additional clarification regarding the application of ASC 740 in situations where the Company does not have the necessary information available, prepared, or analyzed in reasonable detail to complete the accounting for certain income tax effects of the Act for the reporting period in which the Act was enacted. SAB 118 provides for a measurement period beginning in the reporting period that includes the Act's enactment date and ending when the Company has obtained, prepared, and analyzed the information needed in order to complete the accounting requirements but in no circumstances should the measurement period extend beyond one year of the enactment date. The Company will complete the remeasurement of its deferred taxes at December 31, 2018.

The Company recognizes the tax on GILTI as a period cost in the period the tax is incurred. Under this policy, we have not provided deferred taxes related to temporary differences that upon their reversal will affect the amount of income subject to GILTI in the period. For the nine months ended September 30, 2018, there is no GILTI inclusion.

The Company has made an entity classification (CTB) election to treat GSE UK as a disregarded entity effective January 1, 2018. Therefore, as of January 1, 2018, GSE UK is treated as a branch of the US for tax purposes. Accordingly, GSE UK's 2018 activity has been included in the US Company's income tax (benefit) provision.

During the quarter ended June 30, 2018, the Company identified an immaterial error of \$1.2 million, or \$0.06 per share, in the December 31, 2017 financial statements related to the release of the valuation allowance against deferred tax assets attributable to windfall tax benefits recognized upon the adoption of ASU 2016-09. The portion relating to ASU 2016-09 should have been recorded to the consolidated statement of operations as an increase to our benefit for income taxes with a resulting increase to net income during the year ended December 31, 2017, however, the adjustment was recorded to accumulated deficit in the consolidated statement of changes in stockholders' equity. This had no impact to the ending accumulated deficit balance at December 31, 2017.

Additionally, the Company identified a \$0.7 million classification error between deferred tax asset and deferred tax liability at December 31, 2017 due to improper netting of deferred taxes by jurisdiction. Accordingly, we reclassified \$0.7 million of deferred tax liabilities, which was included in other liabilities to deferred tax assets in our December 31, 2017 consolidated balance sheet.

The Company evaluated the required changes and determined that their impact was not material. The financial statements for the year ended December 31, 2018 will reflect the correct comparative data.

## 18. Segment Information

The Company has two reportable business segments. The Performance Improvement Solutions segment provides simulation, training and engineering products and services delivered across the breadth of industries we serve. Solutions include simulation for both training and engineering applications. Example engineering services include, but not limited to, plant design verification and validation, thermal performance evaluation and optimization programs, and engineering programs for plants for ASME code and ASME Section XI. The Company provides these services across all market segments. Example training applications include turnkey and custom training services. Contract terms are typically less than two years.

The Nuclear Industry Training and Consulting segment provides specialized workforce solutions primarily to the nuclear industry, working at clients' facilities. This business is managed through our Hyperspring and Absolute subsidiaries. The business model, management focus, margins and other factors clearly separate this business line from the rest of the GSE product and service portfolio.

As discussed in Note 4, Acquisitions, on May 11, 2018, GSE, through Performance Solutions, entered into the True North Purchase Agreement to purchase 100% of the membership interests in True North. True North is a provider of technical engineering solutions to nuclear and fossil fuel power plants with an emphasis on regulatory-driven ASME code programs. The acquisition of True North is expected to broaden our engineering services offering, expand our relationships with several of the largest nuclear energy providers in the United States, and add a highly specialized, complimentary talent pool to our employee base. For reporting purposes, True North is included in our Performance Improvement Solutions segment due to similarities in services provided including technical engineering solutions to the nuclear and fossil fuel power sector. As of the report date, the Company is still evaluating the impact of the True North acquisition on our reporting units.

The following table sets forth the revenue and operating results attributable to each reportable segment and includes a reconciliation of segment revenue to consolidated revenue and operating results to consolidated income before income taxes:

(in thousands)	Three months ended September 30,		Nine months ended September 30,	
	2018	2017	2018	2017
Revenue:				
Performance Improvement Solutions	\$9,849	\$8,737	\$30,614	\$30,093
Nuclear Industry Training and Consulting	11,952	6,672	38,780	18,783
	21,801	15,409	69,394	48,876
Operating income:				
Performance Improvement Solutions	494	(892 )	110	(6 )
Nuclear Industry Training and Consulting	(520 )	339	(584 )	455
Change in fair value of contingent consideration, net	-	(79 )	-	(376 )
Operating (loss) income	(26 )	(632 )	(474 )	73
Interest (expense) income, net	(114 )	15	(153 )	60
(Loss) gain on derivative instruments, net	(59 )	71	(306 )	226
Other (expense) income, net	(5 )	33	24	(4 )
(Loss) income before income taxes	\$(204 )	\$(513 )	\$(909 )	\$355



Effective January 2018, and due to the acquisition of Absolute, the Performance Improvement Solutions allocated corporate overhead to the Nuclear Industry Training and Consulting segment. For the three months ended September 30, 2018 and 2017, a total of \$1.3 million and \$0.7 million of corporate overhead, respectively, was allocated to Nuclear Industry Training and Consulting segment. For the nine months ended September 30, 2018 and 2017, a total of \$3.4 million and \$1.9 million of corporate overhead, respectively, was allocated to Nuclear Industry Training and Consulting segment. Prior period amounts were reclassified to reflect the change.

19. Supplemental Cash Flow Information

The following table provides a reconciliation of cash, cash equivalents and restricted cash reported within the consolidated balance sheets:

	September 30, 2018	December 31, 2017
Cash and cash equivalents	\$ 9,831	\$ 19,111
Restricted cash	9	960
Cash, cash equivalents, and restricted cash	\$ 9,840	\$ 20,071

## Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations

GSE is a leading provider of professional and technical engineering, staffing services, and simulation software to clients in the power and process industries. We provide customers with simulation, engineering and plant services that help clients reduce risks associated with operating their plants, increase revenue through improved plant and employee performance, and lower costs through improved operational efficiency. In addition, we provide professional services that systematically help clients fill key vacancies in the organization on a short-term basis, primarily in procedures, engineering, technical support, and training focused on regulatory compliance and certification in the nuclear power industry. Our operations also include interactive computer-based tutorials and simulation software for the refining, chemical, and petrochemical industries.

On May 11, 2018, GSE acquired True North Consulting, LLC, now a wholly-owned subsidiary of GSE Performance Solutions, Inc., for \$9.75 million (subject to customary pre- and post-closing working capital adjustments). True North is a provider of technical engineering solutions to nuclear and fossil fuel power plants with an emphasis on regulatory-driven ASME code programs. Located in Montrose, Colorado, True North is a well-regarded service provider to leading companies in the power industry. The acquisition of True North is expected to broaden our engineering services offering, expand our relationships with several of the largest nuclear energy providers in the United States, and add a highly specialized, complimentary talent pool to our employee base.

### Cautionary Statement Regarding Forward-Looking Statements

This report and the documents incorporated by reference herein contain "forward-looking" statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act") that are based on management's assumptions, expectations and projections about us, and the industry within which we operate, and that have been made pursuant to the Private Securities Litigation Reform Act of 1995 reflecting our expectations regarding our future growth, results of operations, performance and business prospects and opportunities. Wherever possible, words such as "anticipate", "believe", "continue", "estimate", "intend", "may", "plan", "potential", "predict", "expect", "should", "will" and similar expressions, or the negative of these terms or other comparable terminology, have been used to identify these forward-looking statements. These forward-looking statements may also use different phrases. These statements regarding our expectations reflect our current beliefs and are based on information currently available to us. Accordingly, these statements by their nature are subject to risks and uncertainties, including those listed under Item 1A - Risk Factors in our most recent annual report on Form 10-K, which could cause our actual growth, results, performance and business prospects and opportunities to differ from those expressed in, or implied by, these forward-looking statements. We may not actually achieve the plans, intentions or expectations disclosed in our forward-looking statements and you should not place undue reliance on our forward-looking statements. Actual results or events could differ materially from the plans, intentions and expectations disclosed in the forward-looking statements we make. Except as otherwise required by federal securities law, we are not obligated to update or revise these forward looking statements to reflect new events or circumstances. We caution you that a variety of factors, including but not limited to the factors described under Item 1A - Risk Factors in our most recent annual report on Form 10-K, could cause our business conditions and results to differ materially from what is contained in forward-looking statements.

Other factors and assumptions not identified above were also involved in the formation of these forward-looking statements and the failure of such other assumptions to be realized, as well as other factors, may also cause actual results to differ materially from those projected. Most of these factors are difficult to predict accurately and are generally beyond our control. You should consider the areas of risk described in Item 1A - Risk Factors in our most recent annual report on Form 10-K in connection with any forward-looking statements that may be made by us. You should not place undue reliance on any forward-looking statements. New factors emerge from time to time, and it is not possible for us to predict which factors will arise.

We undertake no obligation to publicly update any forward-looking statements, whether as a result of new information, future events or otherwise. You are advised, however, to consult any additional disclosures we make in proxy statements, quarterly reports on Form 10-Q and current reports on Form 8-K filed with the SEC.

## General Business Environment

We operate through two reportable business segments: Performance Improvement Solutions and Nuclear Industry Training and Consulting. Each segment focuses on delivering solutions to customers within our targeted markets - primarily the power and process industries. Marketing and communications, accounting, finance, legal, human resources, information systems and other administrative services are organized at the corporate level. Business development and sales resources are generally aligned with each segment to support existing customer accounts and new customer development. The following is a description of our business segments:

### Performance Improvement Solutions (approximately 44% of revenue)

Our Performance Improvement Solutions segment primarily encompasses our power plant high-fidelity simulation solutions, technical engineering services for ASME programs and thermal performance optimization, and interactive computer based tutorials/simulation focused on the process industry. This segment includes various simulation products, engineering services, and operation training systems delivered across the industries we serve: primarily nuclear and fossil fuel power generation, as well as the process industries. Our simulation solutions include the following: (1) simulation software and services, including operator training systems, for the nuclear power industry, (2) simulation software and services, including operator training systems, for the fossil power industry, and (3) simulation software and services for the process industries used to teach fundamental industry processes and control systems to newly hired employees and for ongoing workforce development and training. GSE and its predecessors have been providing these services since 1976.

### Nuclear Industry Training and Consulting (approximately 56% of revenue)

Nuclear Industry Training and Consulting provides highly specialized and skilled nuclear operations instructors, procedure writers, technical engineers, and other consultants to the nuclear power industry. These employees work at our clients' facilities under client direction. Examples of these highly skilled positions are senior reactor operations instructors, procedure writers, project managers, work management specialists, planners and training material developers. This business is managed through our Hyperspring and Absolute subsidiaries. The business model, management focus, margins and other factors clearly separate this business line from the rest of the Company's product and service portfolio. GSE and its predecessors have been providing these services since 1997.

## Business Strategy

Our objective is to provide a powerful technology-enabled engineering and training/consulting services platform focused primarily on the nuclear power industry. We offer our differentiated suite of products and services to adjacent markets such as fossil power and the process industries where our offerings are a natural fit with a clear and compelling value proposition for the market. Our primary growth strategy is twofold: (1) seek acquisitions to accelerate our overall growth in a manner that is complementary to our core business and (2) expand organically within our core markets by leveraging our market leadership position and drive increased usage and product adoption via new products and services. To accomplish this, we will pursue the following activities:

Pursue roll-up acquisition strategy. We intend to complement our organic growth strategy through selective acquisitions including, but not limited to, the following: technical engineering; training, staffing and consulting service businesses focused on the power industry, particularly nuclear power; and software utilized in the power industry, both domestic and international. We are focusing our efforts on acquisitions that would enhance our existing portfolio of products and services, strengthen our relationships with our existing customers, and potentially expand our footprint to include new customers in our core served industries. We have made several acquisitions since 2011 and believe the opportunity exists to acquire businesses that are complementary to ours, allowing us to accelerate our growth strategy.

In May 2018, we acquired True North, a leading provider of specialty engineering solutions to the nuclear power industry. In September 2017, we acquired Absolute, a provider of technical consulting and staffing solutions to the global nuclear power industry. The acquisitions of Absolute and True North are expected to strengthen the Company's global leadership in the nuclear services area. The acquisitions added new capabilities to the GSE solution offering and bring new highly complementary customers to GSE, while at the same time deepening GSE relationships with existing clients. The acquisitions of Absolute and True North are a significant proof point of the thesis that GSE is a compelling platform for consolidating a fragmented vendor ecosystem for nuclear power. In November 2014, we acquired Hyperspring, which enabled GSE to offer highly skilled nuclear operations and consulting personnel with unique know-how to our client base of nuclear power plants. This deepened our relationship with existing clients and won business for us at new client sites in the nuclear industry. This acquisition has proven to be synergistic, enabling cross selling domestically, and in 2015, the expansion of these offerings to international customers for the first time. The acquisitions add significant scale and focus to the business, while positioning GSE as a "go to" provider of technical and consulting solutions to the power industry, in particular nuclear power.

Expand our total addressable market. Our focus on growth means introducing product capabilities or new product and service categories that create value for our customers and therefore expand our total addressable market. Currently we are working on initiatives to expand our solution offerings in both our business segments which may include, but not be limited to, the following: expanding our software product portfolio to the industries we serve with enhanced power and process simulation tools and systems that are complementary to our core offerings; delivering enhanced learning management systems/solutions; offering fully outsourced training solutions to our customers; adding work flow process improvement solutions; tailoring operational reporting and business intelligence solutions to address the unique need of our end user markets; and adding new services to broaden our market reach.

Initiatives such as these will broaden our scope and enable us to engage more deeply with the segments we serve. We have delivered a compelling solution, the GSE GPWR™ Generic Pressurized Water Reactor simulation technology, proving that our modeling technology can be sold via traditional license terms and conditions to the nuclear industry ecosystem. We have both upgraded and expanded the EnVision™ library of simulation and eLearning tutorials for the process industries with specific new products for training clients in the upstream segment of the oil and gas industry including launching a new cloud-based training platform, EnVision™ Learning On-Demand, that significantly extends the capabilities of its industry leading EnVision™ tutorials and simulations. We continue to provide cutting edge training systems by adapting our technology to systems to meet the specific needs of customers such as U.S. government laboratories.

Research and development (R&D). We invest in R&D to deliver unique solutions that add value to our end-user markets. We have delivered nuclear core and Balance-of-Plant modeling and visualization systems to the industry. To address the nuclear industry's need for more accurate simulation of both normal and accident scenarios, we provide our DesignEP® and RELAP5-HD® solutions. Our entire JADE™ suite of simulation software, including industry leading JTOPMERET® and JElectric™ software, provides the most accurate simulation of Balance-of-Plant and electrical systems available to the nuclear and fossil plant simulation market. The significant enhancements we have made to our SimExec® and OpenSim™ platforms enables customers to be more efficient in the daily operation of their simulators. We are bringing SimExec® and OpenSim™ together into a next generation unified environment that will add new capabilities as requested by clients and driven by market need.

We intend to continue to make pragmatic and measured investments in R&D that first and foremost are driven by the market, and are complementary to advancing our growth strategy. Such investments in R&D may result in on-going enhancement of existing solutions as well as the creation of new solutions to serve our target markets, ensuring that we add greater value, in an easier to use fashion, at lower cost of ownership than any alternative available to customers. GSE has pioneered a number of industry standards over our lifetime and will continue to be one of the most innovative companies in our industry.

Strengthen and develop our talent. Our experienced employees and management team are our most valuable resources. Attracting, training, and retaining top talent is critical to our success. To achieve our talent goals, we intend to remain focused on providing our employees with entrepreneurial opportunities to increase client contact within their areas of expertise and to expand our business within our service offerings. We will also continue to provide our employees with training, personal and professional growth opportunities, performance-based incentives including opportunities for stock ownership, bonuses and competitive benefits as benchmarked to our industry and locations.

Continue to deliver industry-recognized high-quality services. We have developed a strong reputation for quality services based upon our industry-recognized depth of experience, ability to attract and retain quality professionals, and expertise across multiple service sectors. We have received industry certificates and awards including being recognized for outstanding work on projects by Bechtel's Nuclear, Security & Environmental global business unit (NS&E) at the Bechtel Supply Chain Recognition awards in April 2016. In addition, we have a recognized high-value brand as one of the most respected providers of software and services to the nuclear industry, as evidenced by our marquee client base and significant market wins over the past years. A recently conducted survey of clients with projects underway and/or just delivered validates our brand with a Net Promoter Score of +72, a compelling score for an industrial technology and services company.

Expand international operations in selected markets. We believe there are additional opportunities for us to market our software and services to international customers, and to do so in a cost-effective manner. For example, we believe partnerships with Value Added Resellers (VAR) could significantly expand our sales pipeline for the EnVision™ software suite. In 2016, we entered into a reseller agreement with an entity in the Middle East that has an established track record of success selling simulation and workforce development solutions to the process industries throughout the region. Such VARs may yield positive results for our pursuit of international nuclear opportunities globally (see industry trends below). We may explore the creation of appropriate joint ventures to target nuclear new-build and maintenance programs in key regions.

Employees. As of September 30, 2018, we had approximately 447 employees, which includes approximately 192 in our Performance Improvement segment and approximately 255 in our Nuclear Industry Training and Consulting segment. To date, we have been able to locate and engage highly qualified employees as needed and we expect our growth efforts to be addressed through attracting top talent.

Backlog. As of September 30, 2018, we had approximately \$74.0 million of total gross revenue backlog, which included \$50.8 million of Performance Improvement Solutions backlog and \$23.2 million of Nuclear Industry

Training and Consulting backlog. With respect to our backlog, it includes only those amounts that have been funded and authorized and does not reflect the full amounts we may receive over the term of such contracts. Our backlog includes future expected revenue at contract rates, excluding contract renewals or extensions that are at the discretion of the client. We calculate backlog without regard to possible project reductions or expansions or potential cancellations unless and until such changes may occur.

Backlog is expressed in terms of gross revenue and, therefore, may include significant estimated amounts of third-party or pass-through costs to subcontractors and other parties. Because backlog is not a defined accounting term, our computation of backlog may not necessarily be comparable to that of our industry peers.

## Products and Services

### Performance Improvement Solutions

To assist our clients in creating world-class internal training and engineering improvement processes, we offer a set of integrated and scalable products and services which provide a structured program focused on continuous skills improvement for experienced employees to engineering services, which include plant design verification and validation. We provide the right solutions to solve our clients' most pressing needs.

For workforce development and training, students and instructors alike must have a high degree of confidence that their power plant simulator truly reflects plant behavior across the entire range of operations. To achieve this, GSE's simulation solution starts with the most robust engineering approach possible. Using state-of-the-art modeling tools combined with our leading nuclear power modeling expertise, GSE provides simulation solutions that achieve unparalleled fidelity and accuracy. The solutions that GSE provides are also known for ease of use, resulting in increased productivity by end-users. For these reasons, GSE has delivered more nuclear power plant simulators than any other company in the world.

For virtual commissioning, designers of first-of-a-kind plants or existing plants need a highly accurate dynamic simulation platform to model a wide variety of design assumptions and concepts from control strategies to plant behavior to human factors. Because new builds and upgrades to existing plants result in new technology being deployed, often involving the integration of disparate technologies for the first time, a high-fidelity simulator allows designers to see the interaction between systems for the very first time. With our combination of simulation technology and expert engineering, GSE was chosen to build the first-of-a-kind simulators for the AP1000, PBMR, and small modular reactors such as those being built by NuScale.

Examples of the types of simulators we sell include, but are not limited to, the following:

**Universal Training Simulators:** These products complement the Self-Paced Training Tutorials by reinforcing what the student learned in the tutorial, putting it into practice on the Universal Simulator. The simulation models are high fidelity and engineering correct, but represent a typical plant or typical process, rather than the exact replication of a client's plant. We have delivered over 360 such simulation models to clients consisting of major oil companies and educational institutions.

**Part-Task Training Simulators:** Like the Universal Simulators, we provide other unique training solutions such as a generic nuclear plant simulator and VPanel® displays, which replicate control room hardware and simulator solutions specific to industry needs such as severe accident models to train on and aid in the understanding of events like the Fukushima Daiichi accident.

**Plant-Specific Operator Training Simulators:** These simulators provide an exact replication of the plant control room and plant operations. They provide the highest level of realism and training and allow users to practice their own plant-specific procedures. Clients can safely practice startup, shutdown, normal operations, as well as response to abnormal events we all hope they never have to experience in real life. Since our inception, we have delivered over 480 plant-specific simulators to clients in the nuclear power, fossil power and process industries worldwide.



## Nuclear Industry Training and Consulting

As our customers' experienced staff retire, access to experts that can help operate and train existing and new employees in how to operate their plants is essential to ensure safe ongoing plant operations. In addition, operating and training needs change over time and sometimes our clients require fixed priced discrete projects or specialized courses in contrast to straight staff augmentation. The industry needs operating personnel, including procedure writers, engineers, operators and instructors who can step in and use as well as update the client's operating methods, procedures, training material and more. Finding technical professionals and instructors, who know the subject, can perform the work or teach it to others and can adapt to the client's culture, is critical. GSE provides qualified professionals, instructors and turnkey projects/courses that work within the client's system and complement the operating or training methods they already have in place. Examples of our training program courses include senior reactor operator certification, generic fundamentals training, and simulation supervisor training. In addition, we also provide expert support through consulting or turnkey projects for procedure writing, technical engineers, project managers, training material upgrade and development, outage execution, planning and scheduling, corrective actions programs, and equipment reliability.

We bring together the collection of skills we have amassed over more than 40 years beginning with its traditional roots in custom high-fidelity simulation and training solutions for the power industries, extended through the acquisition of specialized engineering capabilities, enhanced by the entry and intermediate level training solutions of EnVision and the extensive nuclear industry training and consulting services of Absolute and Hyperspring.

## Results of Operations

The following table sets forth the results of operations for the periods presented expressed in thousands of dollars and as a percentage of revenue:

(in thousands)	Three months ended September 30,				Nine months ended September 30,			
	2018	%	2017	%	2018	%	2017	%
Revenue	\$21,801	100.0 %	\$15,409	100.0 %	\$69,394	100.0 %	\$48,876	100.0 %
Cost of revenue	16,380	75.1 %	11,185	72.6 %	52,735	76.0 %	35,513	72.7 %
Gross profit	5,421	24.9 %	4,224	27.4 %	16,659	24.0 %	13,363	27.3 %
Operating expenses:								
Selling, general and administrative	4,366	20.0 %	4,374	28.4 %	13,686	19.7 %	11,740	24.0 %
Research and development	247	1.1 %	353	2.3 %	765	1.1 %	1,103	2.3 %
Restructuring charges	70	0.3 %	-	0.0 %	1,177	1.7 %	45	0.1 %
Depreciation	132	0.6 %	79	0.5 %	411	0.6 %	254	0.5 %
Amortization of definite-lived intangible assets	632	2.9 %	50	0.3 %	1,094	1.6 %	148	0.3 %
Total operating expenses	5,447	25.0 %	4,856	31.5 %	17,133	24.7 %	13,290	27.2 %
Operating (loss) income	(26 )	(0.1 )%	(632 )	(4.1 )%	(474 )	(0.7 )%	73	0.1 %
Interest (expense) income, net	(114 )	(0.5 )%	15	0.1 %	(153 )	(0.2 )%	60	0.1 %
(Loss) gain on derivative instruments, net	(59 )	(0.3 )%	71	0.5 %	(306 )	(0.4 )%	226	0.5 %
Other (expense) income, net	(5 )	0.0 %	33	0.3 %	24	0.0 %	(4 )	0.0 %
(Loss) income before income taxes	(204 )	(0.9 )%	(513 )	(3.3 )%	(909 )	(1.3 )%	355	0.7 %
Provision for income taxes	314	1.4 %	92	0.7 %	124	0.2 %	399	0.8 %
Net loss	\$(518 )	(2.4 )%	\$(605 )	(3.9 )%	\$(1,033 )	(1.5 )%	\$(44 )	(0.1 )%

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Results of Operations - Three and nine months ended September 30, 2018, versus three and nine months ended September 30, 2017

Revenue. Total revenue for the three months ended September 30, 2018, increased 41.5% compared to the three months ended September 30, 2017. For the nine months ended September 30, 2018, revenue increased 42.0% compared to the nine months ended September 30, 2017. The increase in revenue was primarily driven by the year over year increase in revenue in the Nuclear Industry Training and Consulting segment, as described below.

(in thousands)	Three months ended		Nine months ended	
	September 30, 2018	September 30, 2017	September 30, 2018	September 30, 2017
Revenue:				
Performance Improvement Solutions	\$9,849	\$8,737	\$30,614	\$30,093
Nuclear Industry Training and Consulting	11,952	6,672	38,780	18,783
Total revenue	\$21,801	\$15,409	\$69,394	\$48,876

Performance Improvement Solutions revenue increased approximately \$1.1 million or 12.7% during the three months ended September 30, 2018, compared to the same period in the prior year. Total new orders for this segment were \$17.2 million during the three months ended September 30, 2018, an increase of \$14.3 million when compared to the \$2.9 million in the new orders during the three months ended September 30, 2017. The increase in revenue was primarily due to the acquisition of True North, which contributed to \$2.4 million of revenue to the segment during the three months ended September 30, 2018. This increase was partially offset by a decline of \$0.7 million due to timing differences, and a decline of \$0.6 million from foreign subsidiaries as a result of the winding down of the international subsidiaries.

For the nine months ended September 30, 2018, Performance Improvement Solutions revenue was \$30.6 million compared to \$30.1 million for the nine months ended September 30, 2017. We recorded total new orders of \$31.7 million during the nine months ended September 30, 2018, an increase of \$19.7 million compared to \$12.0 million in the nine months ended September 30, 2017. The increase in revenue for the nine months ended September 30, 2018 compared to the prior year was mainly driven by the acquisition of True North, which contributed \$3.7 million of revenues to the segment since the acquisition. This increase was partially offset by a decrease of \$2.1 million in revenues due to timing differences, and a decrease of \$1.1 million from foreign subsidiaries as a result of restructuring international subsidiaries and structure.

For the three months ended September 30, 2018, Nuclear Industry Training and Consulting revenue increased \$5.3 million, or 79.1% compared to the three months ended September 30, 2017. Total new orders for this segment were \$10.7 million in the three months ended September 30, 2018, compared to \$6.3 million in the prior year. The increase in the revenue was largely due to the acquisition of Absolute which contributed \$6.2 million of revenues for the three months ended September 30, 2018.

For the nine months ended September 30, 2018, Nuclear Industry Training and Consulting revenue increased \$20.0 million, or 106.5% compared to the nine months ended September 30, 2017. We recorded total new orders of \$36.9 million in the nine months ended September 30, 2018, compared to \$25.0 million in the nine months ended September 30, 2017. The \$20.0 million increase in revenue was primarily attributable to the acquisition of Absolute acquired in September 2017, which contributed \$21.1 million of revenues for the nine months ended September 30, 2018.

As of September 30, 2018, backlog was \$74.0 million: \$50.8 million for the Performance Improvement Solutions business segment, \$5.6 million of which was attributable to True North, and \$23.2 million for Nuclear Industry Training and Consulting. As of December 31, 2017, the Company's backlog was \$71.4 million: \$46.3 million for the Performance Improvement Solutions business segment and \$25.1 million for Nuclear Industry Training and

Consulting. The decrease in the Nuclear Industry Training and Consulting business segment backlog was primarily due to 2017 backlog that was converted to revenues during 2018 and has only been partially backfilled by new orders.

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Gross Profit. Gross profit totaled \$5.4 million for the three months ended September 30, 2018, compared to \$4.2 million for the same period in 2017. As a percentage of revenue, gross profit decreased from 27.4% for the three months ended September 30, 2017, to 24.9% for the three months ended September 30, 2018. For the nine months ended September 30, 2018, gross profit was \$16.7 million compared to \$13.4 million for the same period in 2017. As a percentage of revenue, gross profit decreased from 27.3% for the nine months ended September 30, 2017, to 24.0% for the nine months ended September 30, 2018.

(in thousands)	Three months ended September 30,				Nine months ended September 30,			
	2018	%	2017	%	2018	%	2017	%
Gross profit:								
Performance Improvement Solutions	\$3,638	36.9%	\$2,904	33.2%	\$11,318	37.0%	\$10,337	34.4%
Nuclear Industry Training and Consulting	1,783	14.9%	1,320	19.8%	5,341	13.8%	3,026	16.1%
Consolidated gross profit	\$5,421	24.9%	\$4,224	27.4%	\$16,659	24.0%	\$13,363	27.3%

The year over year increase in gross profit percentage for Performance Improvement Solutions for the three and nine months ended September 30, 2018, was primarily driven by cost savings realized in 2018 on certain larger projects. These savings resulted in revenue recognition of \$1.1 million related to performance obligations satisfied in previous periods.

The gross profit percentage in Nuclear Industry Consulting and Training was lower during the three months ended September 30, 2018, as compared to other periods; this was mainly due to normal changes in the mix of projects with different margins.

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Selling, General and Administrative Expenses. Selling, general and administrative (SG&A) expenses totaled \$4.4 million in the three months ended September 30, 2018, a 0.2% decrease from the \$4.4 million for the same period in 2017. For the nine months ended September 30, 2018 and 2017, SG&A expenses totaled \$13.7 million and \$11.7 million, respectively. Fluctuations in the components of SG&A spending were as follows:

(in thousands)	Three months ended		Nine months ended	
	September 30, 2018	September 30, 2017	September 30, 2018	September 30, 2017
Corporate charges	\$3,265	\$3,245	\$10,034	\$8,287
Business development	844	773	2,727	2,250
Facility operation & maintenance (O&M)	228	213	775	645
Bad debt expense	29	-	146	118
Contingent consideration accretion	-	139	-	436
Other	-	4	4	4
Total	\$4,366	\$4,374	\$13,686	\$11,740

Corporate charges increased from \$3.2 million for the three months ended September 30, 2017, to \$3.3 million for the three months ended September 30, 2018. The slight increase was primarily due to higher operating expenses related to the May 2018 acquisition of True North. The increase was partially offset by lower acquisition costs related to the Absolute acquisition in September 2017. For the nine months ended September 30, 2018 and 2017, corporate charges increased from \$8.3 million to \$10.0 million. The increase was primarily driven by the following: higher employee bonuses in the amount of \$0.4 million, mainly due to a new post earnout bonus plan in 2018 for certain Hyperspring employees; \$0.4 million of corporate charges attributable to Absolute; higher professional fees of \$0.3 million associated with the adoption of the new revenue standard (ASC 606) and the impact of the Tax Cuts and Jobs Act; \$0.3 million of corporate charges attributable to True North; and higher labor costs of \$0.3 million due to additional headcount in our corporate office.

Business development expense increased \$0.1 million and \$0.5 million for the three and nine months ended September 30, 2018, respectively, compared to the same periods in 2017. This was mainly due to additional business development expenses incurred in 2018 related to the acquisition of Absolute.

Facility O&M expenses increased \$15,000 and \$130,000 for the three and nine months ended September 30, 2018, respectively, compared to the same periods in 2017. The increase in 2018 was mainly due to the lease of a new office building in Columbia, Maryland location in March 2018, the acquisition of Absolute in September 2017, which resulted in the lease of additional office space in Navarre, Florida, and the acquisition of True North in May 2018, which resulted in the lease of additional office space in Montrose, Colorado.

Contingent consideration expense mainly reflected the fair value adjustments related to our November 2014 Hyperspring acquisition. The earnout period expired in November 2017, and the final payment was made in January 2018, therefore no contingent consideration adjustment was recorded for the current year.

Research and Development Expenses. Research and development (R&D) costs consist primarily of software engineering personnel and other related costs. R&D costs, net of capitalized software, totaled \$247,000 and \$353,000 for the three months ended September 30, 2018 and 2017, respectively. Before capitalization of software development costs, R&D costs totaled \$0.3 million and \$0.4 million for each of the three months ended September 30, 2018 and 2017. R&D costs, net of capitalized software, totaled \$0.8 million and \$1.1 million for the nine months ended September 30, 2018 and 2017, respectively. R&D expenses before capitalization of software development costs totaled \$1.1 million and \$1.2 million for each of the nine months ended September 30, 2018 and 2017. The decrease in R&D expenses in 2018 was mainly due to more software projects having reached the development stage in current year.

Restructuring Charges. On December 27, 2017, the Board of GSE Systems, Inc. approved an international restructuring plan to streamline and optimize the Company's global operations and we announced we expected restructuring charges to total \$2.1 million, excluding any tax impacts and cumulative translation adjustments. The Company recorded restructuring charges of \$0.1 million and \$1.2 million for the three and nine months ended September 30, 2018, primarily consisting of lease termination costs, employee severance costs and other charges. As of September 30, 2018, we had recorded accumulated restructuring charges of \$1.9 million, and we expect to record the remaining restructuring charges of approximately \$0.2 million by the end of 2018. For the nine months ended September 30, 2017 we recorded restructuring charges of \$45,000, which represented true-up adjustments related to the restructuring plan initiated in 2015.

Depreciation. Depreciation expense increased \$53,000 and \$157,000 for the three and nine months ended September 30, 2018, compared to the same periods in 2017. The increase in 2018 was largely driven by the 2017 acquisition of Absolute and the depreciation of additional leasehold improvements as we relocated most of our corporate functions to a new office building in Columbia, Maryland in March 2018.

Amortization of Definite-lived Intangible Assets. Amortization expense related to definite-lived intangible assets totaled \$0.6 million and \$50,000 for the three months ended September 30, 2018 and 2017, respectively. For the nine months ended September 30, 2018 and 2017, amortization expense related to definite-lived intangible assets totaled \$1.1 million and \$0.1 million, respectively. The increase in amortization of definite-lived intangible assets in 2018 was primarily due to the acquisition of Absolute and True North. During the three and nine months ended September 30, 2018, Absolute's amortization expenses totaled \$168,000 and \$454,000, respectively. During the three months ended September 30, 2018, True North's amortization expense was \$420,000. Amortization expense for True North since the date of acquisition totaled \$556,000.

Interest (expense) income, net. Interest expenses totaled \$114,000 and \$153,000 for the three and nine months ended September 30, 2018, respectively. Interest income totaled \$15,000 and \$60,000 for the three and nine months ended September 30, 2017, respectively. The Company issued a five-year term loan of \$10.3 million in May 2018 to finance the acquisition of True North, and has recorded interest expense of \$130,000 related to the term loan for the three months ended September 30, 2018.

(Loss) gain on derivative instruments, net. In the normal course of business, our operations are exposed to fluctuations in foreign currency values and interest rate changes. We control a portion of these risks through a risk management program that includes the use of derivative instruments. (Loss) gain on derivative instruments relates to the Company's interest rate swap contracts, foreign exchange contracts and remeasurement of foreign currency denominated contract receivables, billings in excess of revenue earned, and subcontractor accruals. The following table summarizes the components of the (loss) gain recognized for the three and nine months ended September 30, 2018 and 2017:

	Three months ended	Nine months ended September
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	September 30,			
	2018	2017	2018	2017
Interest rate swap - change in fair value	\$(28)	\$ -	\$(39)	\$ -
Foreign exchange contracts- change in fair value	(14)	74	(178)	145
Remeasurement of related contract receivables, billings in excess of revenue earned, and subcontractor accruals	(17)	(3)	(89)	81
(Loss) gain on derivative instruments, net	\$(59)	71	\$(306)	\$226

Other Income (Expense), Net. For the three and nine months ended September 30, 2018, the Company recognized other expense, net, of \$5,000 and other income, net, of \$24,000, respectively. For the three and nine months ended September 30, 2017, the Company recognized other income, net, of \$33,000 and other expense, net, of \$4,000, respectively.



(Benefit) provision for Income Taxes

Income tax expense (benefit) was \$0.3 million and \$0.1 million with effective income tax rates of (153.9)% and (13.6)% for the three and nine months ended September 30, 2018, respectively. This is compared to income tax expense of \$0.1 million and \$0.4 million with effective income tax rates of (17.9)% and 112.4%, for the three and nine months ended September 30, 2017, respectively. The Company's income tax (benefit) provision for interim periods is determined using an estimate of its annual effective tax rate, adjusted for discrete items arising in that quarter. Tax expense in 2018 is comprised mainly of federal income tax expense, foreign income tax expense, and state taxes. Tax expense in 2017 is comprised mainly of foreign income tax expense, Alternative Minimum Tax, state taxes, and deferred tax expense relating to the tax amortization of goodwill.

Our effective tax rates were (153.9)% and (13.6)% for the three and nine months ended September 30, 2018. For the three months ended September 30, 2018, the difference between our effective tax rate of (153.9)% and the U.S. statutory federal income tax rate of 21% was primarily due to permanent differences, accruals related to uncertain tax positions for certain foreign tax contingencies, discrete item adjustments for the foreign taxes, and return to provision true-ups which were known as of September 30, 2018. For the nine months ended September 30, 2018, the difference between the effective tax rate of (13.6)% and the U.S. statutory federal income tax rate of 21% was primarily due to changes in jurisdictional income and the inclusion of income (loss) from an acquisition in the second quarter of 2018.

Because of its net operating loss carryforwards, the Company is subject to U.S. federal and state income tax examinations from the year 1997 and forward. The Company is subject to foreign tax examinations by tax authorities for years 2011 forward for Sweden, 2015 forward for China, 2015 forward for India, and 2016 forward for the UK.

An uncertain tax position taken or expected to be taken in a tax return is recognized in the consolidated financial statements when it is more likely than not ( i.e., a likelihood of more than 50%) that the position would be sustained upon examination by tax authorities that have full knowledge of all relevant information. A recognized tax position is then measured at the largest amount of benefit that is greater than 50% likely of being realized upon ultimate settlement. Interest and penalties related to income taxes are accounted for as income tax expense.

The Company has recorded full valuation allowances for its Chinese, U.K., and Swedish net deferred tax assets at September 30, 2018.

The Company follows the guidance in SEC Staff Accounting Bulletin 118 (SAB 118), which provides additional clarification regarding the application of ASC 740 in situations where the Company does not have the necessary information available, prepared, or analyzed in reasonable detail to complete the accounting for certain income tax effects of the Act for the reporting period in which the Act was enacted. SAB 118 provides for a measurement period beginning in the reporting period that includes the Act's enactment date and ending when the Company has obtained, prepared, and analyzed the information needed in order to complete the accounting requirements but in no circumstances should the measurement period extend beyond one year of the enactment date. The Company will complete the remeasurement of its deferred taxes at December 31, 2018.

During the quarter ended June 30, 2018, the Company identified an immaterial error of \$1.2 million, or \$0.06 per share, in the December 31, 2017 financial statements related to the release of the valuation allowance against deferred tax assets attributable to windfall tax benefits recognized upon the adoption of ASU 2016-09. The portion relating to ASU 2016-09 should have been recorded to the consolidated statement of operations as an increase to our benefit for income taxes with a resulting increase to net income during the year ended December 31, 2017, however, the adjustment was recorded to accumulated deficit in the consolidated statement of changes in stockholders' equity. This had no impact to the ending accumulated deficit balance at December 31, 2017.

Additionally, the Company identified a \$0.7 million classification error between deferred tax asset and deferred tax liability at December 31, 2017 due to improper netting of deferred taxes by jurisdiction. Accordingly, we reclassified

\$0.7 million of deferred tax liabilities, which was included in other liabilities to deferred tax assets in our December 31, 2017 consolidated balance sheet.

The Company evaluated the required changes and determined that their impact was not material. The financial statements for the year ended December 31, 2018 will reflect the correct comparative data.

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## Critical Accounting Policies and Estimates

In preparing the Company's consolidated financial statements, management makes several estimates and assumptions that affect the Company's reported amounts of assets, liabilities, revenues and expenses. The Company's most significant estimates relate to revenue recognition on contracts with customers, allowance for doubtful accounts, product warranties, valuation of goodwill and intangible assets acquired, valuation of long-lived assets to be disposed of, valuation of contingent consideration issued in business acquisitions, valuation of stock based compensation awards, and the recoverability of deferred tax assets. These critical accounting policies and estimates are discussed in the Management's Discussion and Analysis of Financial Condition and Results of Operations section in our most recent Annual Report on Form 10-K. For all of these policies, management cautions that future events rarely develop exactly as forecast, and the best estimates may require adjustment.

## Liquidity and Capital Resources

As of September 30, 2018, the Company's cash, cash equivalents and restricted cash totaled \$9.8 million compared to \$20.1 million at December 31, 2017.

For the nine months ended September 30, 2018 and 2017, net cash (used in) provided by operating activities was \$(6.4) million and \$3.0 million, respectively. The year over year change of \$9.4 million in cash flows (used in) provided by operating activities was primarily driven by cash payments of \$1.5 million for the restructuring expenses and the change in contract receivables, billing in excess of revenue earned and accounts payable and accrued expenses, which was mainly due to timing differences of cash collections and billing.

Net cash used in investing activities totaled \$10.5 million and \$8.6 million for the nine months ended September 30, 2018 and 2017, respectively. The increase in cash outflow in 2018 was primarily driven by the acquisition of True North, the net cash consideration of which was \$9.6 million; \$0.4 million increase in fixed assets primarily due to increase in lease improvements and furniture and fixtures as we entered into a new lease agreement in December 2017 and relocated most of our corporate functions, including finance, legal, and R&D to a new office in Columbia, Maryland in March 2018; and \$0.2 million increase in capitalized software development costs as more software reached development stage. These increases were offset by a decrease of \$8.5 million net consideration related to the acquisition of Absolute in 2017.

For the nine months ended September 30, 2018 and 2017, cash provided by (used in) financing activities totaled \$7.0 million and \$(1.1) million, respectively. The increase in the cash inflow from financing activities was largely driven by the proceeds from issuance of a term loan of \$10.2 million, net of discount and issuance costs, a decrease of \$0.6 million in the Company's withholding of RSUs in order to pay employees' payroll withholding taxes on vested RSUs; the increase was partially offset by repayments of \$1.2 million on the term loan and an increase of \$1.3 million in contingent consideration payments to the former Hyperspring owners as we paid off the earnout.

At September 30, 2018, the Company had cash, cash equivalents and restricted cash of \$9.8 million. The Company believes that its (i) cash and cash equivalents and (ii) cash generated from normal operations will be sufficient to fund its working capital and other requirements for at least the next twelve months.

## Credit Facilities

### Citizens Bank

The Company entered into a three-year, \$5.0 million revolving line of credit facility (RLOC) with Citizens Bank, National Association (the Bank) on December 29, 2016, to fund general working capital needs. On May 11, 2018, GSE and Performance Solutions (collectively, the Borrower) entered into an Amended and Restated Credit and Security Agreement (the Credit Agreement) with the Bank, amending and restating the Company's existing Credit and

Security Agreement with the Bank, which included a \$5.0 million asset-based revolving credit facility between the Borrower and the Bank, to now include (a) a \$5.0 million revolving credit facility not subject to a borrowing base, including a letter of credit sub-facility, and (b) a \$25.0 million delayed draw term loan facility available to be drawn upon for up to 18 months and to finance certain permitted acquisitions by the Company.

On May 11, 2018, upon acquisition of True North, the Company drew down approximately \$10.3 million to fund the transaction, \$0.5 million of which was repaid to the Bank on the same day. At September 30, 2018, the outstanding balance of the long-term debt was \$9.0 million.

At September 30, 2018, there were no outstanding borrowings on the RLOC and five letters of credit totaling \$2.3 million. The amount available at September 30, 2018, after consideration of the letters of credit was approximately \$2.7 million.

The credit facility agreement is subject to standard financial covenants and reporting requirements. At September 30, 2018, the Company was in compliance with its financial covenants.

## Non-GAAP Financial Measures

EBITDA and Adjusted EBITDA are not measures of financial performance under generally accepted accounting principles (GAAP). Management believes EBITDA and Adjusted EBITDA, in addition to operating profit, net income and other GAAP measures, are useful to investors to evaluate the Company's results because each measure excludes certain items that are not directly related to the Company's core operating performance that may, or could, have a disproportionate positive or negative impact on our results for any particular period. Investors should recognize that EBITDA and Adjusted EBITDA might not be comparable to similarly-titled measures of other companies. Our management uses EBITDA and Adjusted EBITDA and other non-GAAP measures to evaluate the performance of our business and make certain operating decisions (e.g., budgeting, planning, employee compensation and resource allocation). This measure should be considered in addition to, and not as a substitute for or superior to, any measure of performance prepared in accordance with GAAP. A reconciliation of non-GAAP EBITDA and Adjusted EBITDA to the most directly comparable GAAP measure in accordance with SEC Regulation G is as follows:

(in thousands)

	Three months ended September 30,		Nine months ended September 30,	
	2018	2017	2018	2017
Net loss	\$(518 )	\$(605 )	\$(1,033 )	\$(44 )
Interest expense (income), net	114	(15 )	153	(60 )
(Benefit) provision for income taxes	314	92	124	399
Depreciation and amortization	914	247	1,858	754
EBITDA	824	(281 )	1,102	1,049
Change in fair value of contingent consideration	-	139	-	436
Restructuring charges	70	-	1,177	45
Stock-based compensation expense	507	627	1,535	1,873
Impact of the change in fair value of derivative instruments	59	(71 )	306	(226 )
Acquisition-related expense	-	454	491	473
Bad debt expense due to customer bankruptcy	-	-	65	122
Adjusted EBITDA	\$1,460	\$868	\$4,676	\$3,772

Adjusted Net Income and Adjusted EPS Reconciliation (in thousands, except per share amounts)

Adjusted Net Income and adjusted earnings (loss) per share ("adjusted EPS") are not measures of financial performance under GAAP. Management believes adjusted net income and adjusted EPS, in addition to other GAAP measures, provide meaningful supplemental information regarding our operational performance. Our management uses Adjusted Net Income and other non-GAAP measures to evaluate the performance of our business and make certain operating decisions (e.g., budgeting, planning, employee compensation and resource allocation). This information facilitates management's internal comparisons to our historical operating results as well as to the operating results of our competitors. Since management finds this measure to be useful, we believe that our investors can benefit by evaluating both non-GAAP and GAAP results. These measures should be considered in addition to, and not as a substitute for or superior to, any measure of performance prepared in accordance with GAAP. A reconciliation of non-GAAP adjusted net income and adjusted EPS to GAAP net income, the most directly comparable GAAP financial measure, is as follows:

(in thousands)

	Three months ended September 30,		Nine months ended September 30,	
	2018	2017	2018	2017
Net loss	\$ (518	) \$ (605	) \$ (1,033	) \$ (44
Change in fair value of contingent consideration	-	139	-	436
Restructuring charges	70	-	1,177	45
Stock-based compensation expense	507	627	1,535	1,873
Impact of the change in fair value of derivative instruments	59	(71	) 306	(226
Acquisition-related expense	-	454	491	473
Amortization of intangible assets related to acquisitions	632	50	1,094	148
Bad debt expense due to customer bankruptcy	-	-	65	122
Adjusted net income	\$ 750	\$ 594	\$ 3,635	\$ 2,827
Diluted loss per common share	\$ (0.03	) \$ (0.03	) \$ (0.05	) \$ -
Adjusted earnings per common share – Diluted	\$ 0.04	\$ 0.03	\$ 0.18	\$ 0.14
Weighted average shares outstanding - Diluted <sup>(1)</sup>	20,166,912	19,702,742	19,932,921	19,601,661

<sup>(1)</sup> During the three and nine months ended September 30, 2018, the Company reported a GAAP net loss and positive adjusted net income. Accordingly, there were 380,024 and 312,714 dilutive shares from options and RSUs included in the adjusted earnings per common share calculation for the three and nine months ended September 30, 2018, that were considered anti-dilutive in determining the GAAP diluted loss per common share.

<sup>(1)</sup> During the three and nine months ended September 30, 2017, the Company reported a GAAP net loss and positive adjusted net income. Accordingly, there were 421,972 and 396,883 dilutive shares from options and RSUs included in the adjusted earnings per common share calculation for the three and nine months ended September 30, 2017, that were considered anti-dilutive in determining the GAAP diluted loss per common share.

### Item 3. Quantitative and Qualitative Disclosure about Market Risk

Not required of a smaller reporting company.

### Item 4. Controls and Procedures

#### Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our chief executive officer and chief financial officer, evaluated the effectiveness of our disclosure controls and procedures, as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act, as of the end of the period covered by this Quarterly Report on Form 10-Q. Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Our disclosure controls and procedures are designed to provide reasonable assurance of achieving their control objectives. Based on the evaluation of our disclosure controls and procedures as of the end of the period covered by this quarterly report, our chief executive officer and chief financial officer concluded that, as of such date, our disclosure controls and procedures were effective.

On May 11, 2018, the Company completed the purchase of True North Consulting, LLC. True North constitutes 18% of total assets of the Company at September 30, 2018, and 5% of the Company's consolidated revenue for the nine months ended September 30, 2018. As permitted by SEC guidance for newly acquired businesses, because it was not possible to complete an effective assessment of the acquired company's controls by the quarter-end, the Company's management has excluded True North from its evaluation of disclosure controls and procedures from the date of such acquisition through September 30, 2018.

#### Changes in Internal Control over Financial Reporting

There were no changes in the Company's internal control over financial reporting that occurred during the most recent fiscal quarter that have materially affected or are reasonably likely to materially affect the Company's internal control over financial reporting.

#### Limitation of Effectiveness of Controls

Internal control over financial reporting has inherent limitations. Internal control over financial reporting is a process that involves human diligence and compliance and is subject to lapses in judgment and breakdowns resulting from human failures. Internal control over financial reporting also can be circumvented by collusion or improper management override. Because of such limitations, there is a risk that material misstatements will not be prevented or detected on a timely basis by internal control over financial reporting. However, these inherent limitations are known features of the financial reporting process. Therefore, it is possible to design into the process safeguards to reduce, though not eliminate, this risk.

PART II - OTHER INFORMATION

Item 1. Legal Proceedings

None.

Item 1A. Risk Factors

The Company has no material changes to the disclosure on this matter made in its Annual Report on Form 10-K for the fiscal year ended December 31, 2017.

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds

None

Item 3. Defaults Upon Senior Securities

None

Item 4. Mine Safety Disclosures

Not applicable.

Item 5. Other Information

None.

Item 6. Exhibits

31.1 Certification of the Chief Executive Officer pursuant to Section 302 of the Sarbanes- Oxley Act of 2002, filed herewith.

31.2 Certification of the Chief Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002, filed herewith.

32.1 Certification of the Chief Executive Officer and Chief Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, filed herewith.

101.INS\* XBRL Instance Document

101.SCH\* XBRL Taxonomy Extension Schema

101.CAL\* XBRL Taxonomy Extension Calculation Linkbase

101.DEF\* XBRL Taxonomy Extension Definition Linkbase

101.LAB\* XBRL Taxonomy Extension Label Linkbase

101.PRE\* XBRL Taxonomy Extension Presentation Linkbase





SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

Date: November 14, 2018  
GSE SYSTEMS, INC.

/S/ KYLE J. LOUDERMILK

Kyle J. Loudermilk  
Chief Executive Officer  
(Principal Executive Officer)

/S/ EMMETT A. PEPE

Emmett A. Pepe  
Chief Financial Officer  
(Principal Financial and Accounting Officer)