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 March 31, 2018
OR

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from ______ to ______
000-32743
(Commission File Number)

DASAN ZHONE SOLUTIONS, INC.
(Exact name of registrant as specified in its charter)

Delaware	**22-3509099**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification Number)**
7195 Oakport Street **Oakland, California**	**94621**
(Address of principal executive offices)	**(Zip code)**

(510) 777-7000
(Registrant's telephone number, including area code)

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 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 ☒ 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 (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes ☒ No ☐

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

Large accelerated filer	☐	Accelerated filer	☐
Non-accelerated filer	☐ (Do not check if a smaller reporting company)	Smaller reporting company	☒
		Emerging growth 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 12b-2 of the Exchange Act). Yes ☐ No ☒

As of May 8, 2018, there were 16,441,551 shares of the registrant's common stock outstanding.

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PART I. FINANCIAL INFORMATION

Item 1. Financial Statements

DASAN ZHONE SOLUTIONS, INC. AND SUBSIDIARIES
Unaudited Condensed Consolidated Balance Sheets
(In thousands, except par value)

	March 31, 2018	December 31, 2017
Current assets:		
Cash and cash equivalents	$ 23,158	$ 17,475
Restricted cash	10,118	12,425
Accounts receivable, net		
Trade receivables	54,934	48,257
Related parties	14,644	13,498
Other receivables		
Others	17,030	12,494
Related parties	72	164
Inventories	32,714	25,344
Prepaid expenses and other current assets	6,431	3,652
Total current assets	159,101	133,309
Property and equipment, net	5,632	5,873
Goodwill	3,977	3,977
Intangible assets, net	6,501	6,785
Non-current deferred taxes	3,152	2,954
Long-term restricted cash	1,407	1,512
Other assets	5,034	4,717
Total assets	$ 184,804	$ 159,127
Liabilities, Stockholders' Equity and Non-controlling Interest		
Current liabilities:		
Accounts payable		
Others	$ 40,682	$ 31,441
Related parties	1,639	1,351
Short-term debt	33,556	19,790
Other payables		
Others	2,310	2,032
Related parties	2,806	1,956
Contract liabilities - current	2,163	3,279
Accrued and other liabilities	9,207	11,174
Total current liabilities	92,363	71,023
Long-term debt		
Others	—	2,987
Related parties	12,895	6,800
Contract liabilities - non-current	1,870	1,883
Other long-term liabilities	2,665	2,667
Total liabilities	109,793	85,360
Commitments and contingencies (Note 11)		
Stockholders' equity and non-controlling interest:		
Common stock, authorized 36,000 shares, 16,431 shares and 16,410 shares outstanding as of March 31, 2018 and December 31, 2017 at $0.001 par value	16	16
Additional paid-in capital	90,672	90,198
Other comprehensive income (loss)	2,128	1,871
Accumulated deficit	(18,403)	(18,852)
Total stockholders' equity	74,413	73,233
Non-controlling interest	598	534
Total stockholders' equity and non-controlling interest	75,011	73,767
Total liabilities, stockholders' equity and non-controlling interest	$ 184,804	$ 159,127

See accompanying notes to unaudited condensed consolidated financial statements.

DASAN ZHONE SOLUTIONS, INC. AND SUBSIDIARIES
Unaudited Condensed Consolidated Statements of Comprehensive Income (Loss)
(In thousands, except per share data)

	Three Months Ended March 31, 2018	Three Months Ended March 31, 2017
Net revenue:		
Net revenue	$ 57,906	$ 41,241
Net revenue - related parties	1,598	10,871
Total net revenue	59,504	52,112
Cost of revenue:		
Products and services	35,853	25,021
Products and services - related parties	1,763	8,708
Amortization of intangible assets	153	153
Total cost of revenue	37,769	33,882
Gross profit	21,735	18,230
Operating expenses:		
Research and product development	8,977	9,382
Selling, marketing, general and administrative	12,394	10,884
Amortization of intangible assets	131	493
Total operating expenses	21,502	20,759
Operating income (loss)	233	(2,529)
Interest income	86	26
Interest expense	(323)	(274)
Other income (loss), net	140	(281)
Income (loss) before income taxes	136	(3,058)
Income tax (benefit) expense	(5)	440
Net income (loss)	141	(3,498)
Net income attributable to non-controlling interest	34	249
Net income (loss) attributable to DASAN Zhone Solutions, Inc.	$ 107	$ (3,747)
Foreign currency translation adjustments	318	2,890
Comprehensive income (loss)	459	(608)
Comprehensive income attributable to non-controlling interest	64	269
Comprehensive income (loss) attributable to DASAN Zhone Solutions, Inc.	$ 395	$ (877)
Basic and diluted net income (loss) per share attributable to DASAN Zhone Solutions, Inc.	$ 0.01	$ (0.23)
Weighted average shares outstanding used to compute basic net income (loss) per share	16,416	16,378
Weighted average shares outstanding used to compute diluted net income (loss) per share	16,626	16,378

See accompanying notes to unaudited condensed consolidated financial statements.

DASAN ZHONE SOLUTIONS, INC. AND SUBSIDIARIES
Unaudited Condensed Consolidated Statements of Cash Flows
(In thousands)

	Three Months Ended March 31,	
	2018	2017
Cash flows from operating activities:		
Net income (loss)	$ 141	$ (3,498)
Adjustments to reconcile net income (loss) to net cash used in operating activities:		
Depreciation and amortization	699	1,181
Stock-based compensation	363	255
Loss on inventory write-down	434	311
Unrealized gain on foreign currency transactions	20	871
Deferred taxes	(183)	—
Changes in operating assets and liabilities:		
Accounts receivable	(9,129)	(1,277)
Inventories	(7,781)	(4,015)
Prepaid expenses and other assets	(1,918)	(501)
Accounts payable	6,013	6,732
Accrued expenses	(2,187)	(739)
Net cash used in operating activities	(13,528)	(680)
Cash flows from investing activities:		
Proceeds from sale of short-term investments	—	1,040
Purchase of short-term investments	—	(252)
Proceeds from disposal of property and equipment and other assets	1	6
Purchase of property and equipment	(86)	(404)
Purchase of intangible asset	—	(30)
Net cash provided by (used in) investing activities	(85)	360
Cash flows from financing activities:		
Repayments of borrowings	(8,250)	(4,356)
Proceeds from short-term borrowings	18,849	2,570
Proceeds from long-term borrowings from related party	6,064	—
Proceeds from issuance of common stock	111	1
Net cash provided by (used in) financing activities	16,774	(1,785)
Effect of exchange rate changes on cash and restricted cash	110	1,288
Net increase (decrease) in cash and cash equivalents	3,271	(817)
Cash, cash equivalents and restricted cash at beginning of period	31,412	24,543
Cash, cash equivalents and restricted cash at end of period	$ 34,683	$ 23,726
Reconciliation of cash, cash equivalents and restricted cash to statement of financial position		
Cash and equivalents	$ 23,158	$ 17,288
Restricted cash	10,118	6,438
Long-term restricted cash	1,407	—
Cash, cash equivalents and restricted cash in statement of financial position	$ 34,683	$ 23,726

See accompanying notes to unaudited condensed consolidated financial statements.

Notes to Unaudited Condensed Consolidated Financial Statements

(1) Organization and Summary of Significant Accounting Policies

(a) Description of Business

DASAN Zhone Solutions, Inc. (referred to, collectively with its subsidiaries, as "DZS" or the "Company") is a global provider of network access solutions and communications equipment for service provider and enterprise networks. The Company provides a wide array of reliable, cost-effective networking technologies, including broadband access, Ethernet switching, mobile backhaul, Passive Optical LAN and software-defined networks, to a diverse customer base that includes more than 1,000 customers in more than 50 countries worldwide.

DZS was incorporated under the laws of the state of Delaware in June 1999. On September 9, 2016, the Company acquired Dasan Network Solutions, Inc., a California corporation ("DNS") through the merger of a wholly owned subsidiary of the Company with and into DNS, with DNS surviving as a wholly owned subsidiary of the Company (the "Merger"). At the effective time of the Merger, all issued and outstanding shares of capital stock of DNS held by DASAN Networks, Inc. ("DNI") were canceled and converted into the right to receive shares of the Company's common stock in an amount equal to 58% of the issued and outstanding shares of the Company's common stock immediately following the Merger. In connection with the Merger, the Company changed its name from Zhone Technologies, Inc. to DASAN Zhone Solutions, Inc. The Company is headquartered in Oakland, California.

(b) Risks and Uncertainties

The accompanying consolidated financial statements have been prepared in conformity with generally accepted accounting principles in the United States ("U.S. GAAP"), assuming the Company will continue as a going concern.

The Company had net income of $0.1 million for the quarter ended March 31, 2018 and $1.2 million for the year ended December 31, 2017. However, the Company incurred a net loss of $15.3 million for the year ended December 31, 2016 and significant losses in prior years. As of March 31, 2018, the Company had an accumulated deficit of $18.4 million and working capital of $66.7 million. As of March 31, 2018, the Company had $23.2 million in cash and cash equivalents, which included $9.7 million in cash balances held by its Korean subsidiary and $46.5 million in aggregate principal amount of short-term debt obligations, long-term debt and long-term related-party borrowings. In addition, as of March 31, 2018 the Company had $6.6 million committed as security for letters of credit under its revolving credit facilities, leaving $6.1 million in aggregate financing availability under these facilities. The Company's current lack of liquidity could harm it by:

- increasing its vulnerability to adverse economic conditions in its industry or the economy in general;
- requiring substantial amounts of cash to be used for debt servicing, rather than other purposes, including operations;
- limiting its ability to plan for, or react to, changes in its business and industry; and
- influencing investor and customer perceptions about its financial stability and limiting its ability to obtain financing or acquire customers.

These factors indicate that cash flows might not be sufficient for the Company to meet its obligations as they come due in the ordinary course of business for a period of 12 months from the date of this interim report on Form 10-Q.

However, the Company plans to focus on cost management, operating efficiency and restrictions on discretionary spending. In addition, if necessary, the Company may sell assets, issue debt or equity securities or purchase credit insurance. The Company may also reduce the scope of its planned product development, reduce sales and marketing efforts and reduce its operations in low margin regions, including reductions in headcount. In the first quarter of 2018, the Company modified the terms of certain existing debt and obtained a new loan, as described more fully in Note (7) Debt and Note (9) Related-Party Transactions to the unaudited condensed consolidated financial statements. Based on the Company's current plans and current business conditions, the Company believes that these measures along with its existing cash, cash equivalents and available credit facilities will be sufficient to satisfy its anticipated cash requirements for at least the next 12 months from the date of this Quarterly Report on Form 10-Q.

The Company's ability to meet its obligations as they become due in the ordinary course of business for the next 12 months will depend on its ability to achieve forecasted results and its ability to access funds approved under existing facilities. Management's belief that it will achieve these results assumes that, among other things, the Company will continue to be successful in implementing its business strategy and that there will be no material adverse development in its business, liquidity or capital requirements. If one or more of these factors do not occur as expected, it could cause the Company to fail to meet its obligations as they come due.

DNI owned approximately 58% of the outstanding shares of the Company's common stock as of March 31, 2018. For so long as DNI and its affiliates hold shares of the Company's common stock representing at least a majority of the votes, DNI will be able to freely nominate and elect all the members of the Company's board of directors, subject to the provisions of the Company's bylaws and applicable requirements under Nasdaq listing rules and applicable laws. The directors elected by DNI will have the authority to make decisions affecting the Company's capital structure, including the issuance of additional capital stock or options, the incurrence of additional indebtedness, the implementation of stock repurchase programs, and the declaration of dividends. The interests of DNI may not coincide with the interests of the Company's other stockholders or with holders of the Company's indebtedness. DNI's ability to control all matters submitted to the Company's stockholders for approval limits the ability of other stockholders to influence corporate matters and, as a result, the Company may take actions that the Company's other stockholders or holders of the Company's indebtedness do not view as beneficial. See Note 9 and Note 11 to the unaudited condensed consolidated financial statements for additional information.

(c) Reclassifications

Certain prior period statement of comprehensive loss items have been reclassified to correct for research and product development expenses and selling, marketing, general and administrative expenses of $0.2 million and $0.3 million, respectively, which were previously improperly classified as cost of revenue-products and services.

(d) Basis of Presentation

For a complete description of what we believe to be the critical accounting policies and estimates used in the preparation of our Unaudited Condensed Consolidated Financial Statements, refer to our Annual Report on Form 10-K for the year ended December 31, 2017.

The accompanying unaudited condensed consolidated financial statements have been prepared in accordance with U.S. GAAP for interim financial information and with the instructions to Form 10-Q and Article 10 of Regulation S-X. Accordingly, they do not include all of the information and footnotes required by U.S. GAAP for complete financial statements.

The unaudited condensed consolidated financial statements reflect all adjustments (consisting only of normal recurring adjustments) that, in the opinion of management, are necessary for a fair presentation of the results for the interim periods presented. All intercompany transactions and balances have been eliminated in consolidation. The results of operations for the current interim period are not necessarily indicative of results to be expected for the current year or any other period. These unaudited condensed consolidated financial statements should be read in conjunction with the consolidated financial statements of the Company 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.

(e) Reverse Stock Split

On February 28, 2017, the Company filed a Certificate of Amendment with the Delaware Secretary of State to amend the Company's Restated Certificate of Incorporation, which amendment effected a one-for-five reverse stock split of the Company's common stock and reduced the authorized shares of the Company's common stock from 180 million to 36 million. As a result of the reverse stock split, the number of shares of the Company's common stock then issued and outstanding was reduced from approximately 81.9 million to approximately 16.4 million. References to shares of the Company's common stock, stock options (and associated exercise price) and restricted stock units in this Quarterly Report on Form 10-Q are provided on a post-reverse stock split basis.

(f) *Concentration of Risk*

The Company’s customers include competitive and incumbent local exchange carriers, competitive access providers, Internet service providers, wireless carriers and resellers serving these markets. The Company performs ongoing credit evaluations of its customers and generally does not require collateral. Allowances are maintained for potential doubtful accounts. For the three months ended March 31, 2018, no customer accounted for 10% or more of net revenue. For the three months ended March 31, 2017, two customers represented 12% and 11% of net revenue, respectively.

As of March 31, 2018, two customers represented 20% (a related party) and 13% of net accounts receivable, respectively. As of December 31, 2017, two customers represented 20% (a related party) and 11% of net accounts receivable, respectively.

As of March 31, 2018 and December 31, 2017, receivables from customers in countries other than the United States represented 88% and 84%, respectively, of net accounts receivable.

(g) *Recent Accounting Pronouncements*

In May 2014, the FASB issued ASU No. 2014-09 *“Revenue from Contracts with Customers”* (“Topic 606”), which provides a single comprehensive model for entities to use in accounting for revenue arising from contracts with customers. Topic 606 replaced most existing revenue recognition standards under U.S. GAAP, including ASC 605, *Revenue Recognition* ("Topic 605").

On January 1, 2018, the Company adopted Topic 606 and applied this guidance to all open contracts at the date of adoption using the modified retrospective method. The Company recognized the cumulative effect of initially applying Topic 606 as an adjustment to the balance of accumulated deficit at January 1, 2018. The comparative information has not been restated and continues to be reported under Topic 605.

The Company’s adoption of Topic 606 primarily impacted the following:

- Topic 606 requires an allocation of revenue between deliverables (performance obligations) within an arrangement. Topic 605 restricted the allocation of revenue that is contingent on future deliverables to current deliverables, however, Topic 606 removes this restriction, to the extent that the future deliverables represent performance obligations that are distinct. Under Topic 606, the nature of the performance obligations identified within a contract impacts the allocation of the transaction price between deliverables.

- Some of the Company’s contracts include customer acceptance terms, which provides protection to the customer by allowing it to either cancel a contract or force the Company to take corrective actions if products or services do not meet the requirements in the contract. Under Topic 606, customer acceptance that is considered a “formality”, would result in revenue recognized when control of the product or service is transferred to customer, which is typically upon shipment or delivery dependent upon the terms of the underlying contract.

The following table summarizes the effects of Topic 606 on the Company’s unaudited condensed consolidated balance sheet at January 1, 2018 (in thousands):

	Balance after adoption of ASC 606	Adjustments	Balance without adoption of ASC 606
Assets			
Accounts receivable, net	$ 62,099	$ 344 (1)	$ 61,755
Inventories	25,239	(105) (2)	25,344
Liabilities			
Contract liabilities - current	2,866	(413) (2)	3,279
Accrued and other liabilities	11,518	344 (1)	11,174
Stockholders’ equity			
Accumulated deficit	(18,544)	308	(18,852)

[(1)] *Allowance for sales returns was historically presented as a contra-asset within accounts receivable on the Company's consolidated balance sheets. Upon the adoption of Topic 606, the Company presents the allowance for sales returns in Accrued and other liabilities (current).*

[(2)] *Represents the impact of allocation of transaction price to separate performance obligations in open contracts as of the adoption date on a relative standalone selling price basis and acceleration of revenue (and related costs) for contracts for which acceptance clauses are a formality.*

The following table summarizes the effects of Topic 606 on the Company's unaudited condensed consolidated balance sheet at March 31, 2018 (in thousands):

	As reported	Adjustments	Balance without adoption of ASC 606
Assets			
Accounts receivable, net	$ 69,578	$ 330 [(1)]	$ 69,248
Inventories	32,714	62 [(2)]	32,652
Prepaid expenses and other current assets	6,431	91 [(2)]	6,340
Liabilities			
Contract liabilities - current	2,163	(285) [(2)]	2,448
Accrued and other liabilities	9,207	330 [(1)]	8,877
Stockholders' equity			
Accumulated deficit	(18,403)	(132)	(18,271)

[(1)] *Allowance for sales returns was historically presented as a contra-asset within accounts receivable on the Company's consolidated balance sheets. Upon the adoption of Topic 606, the Company presents the allowance for sales returns in Accrued and other liabilities (current).*

[(2)] *Represents the impact of allocation of transaction price to separate performance obligations in open contracts as of March 31, 2018 on a relative standalone selling price basis and acceleration of revenue (and related costs) for contracts for which acceptance clauses are a formality.*

The following table summarizes the effects of Topic 606 on the Company's unaudited condensed consolidated statement of operations for the three months ended March 31, 2018 (in thousands):

	As reported	Adjustments	Balance without adoption of ASC 606
Net revenue	$ 59,504	$ (194)	$ 59,698
Cost of revenue - products and services	37,769	(62)	37,831
Gross profit	21,735	(132)	21,867
Provision for income taxes	(5)	—	(5)
Net income	141	(132)	273

There was no impact on net revenue from related parties as a result of Topic 606.

Revenue Recognition Accounting Policy

Revenue Recognition

Revenue from contracts with customers is recognized when control of the promised goods or services is transferred to the customers, in an amount that reflects the consideration the Company expects to be entitled to in exchange for those goods or services.

The Company generates revenue primarily from sales of products and services, including, extended warranty service and customer support. Revenue from product sales is recognized at a point in time when control of the good is transferred to the customer, generally occurring upon shipment or delivery dependent upon the terms of the underlying contract. Revenue from services is generally recognized over time on a ratable basis over the contract term, using an output measure of progress, as the contracts usually provide the customer equal benefit throughout the contract period. The Company typically invoices customers for support contract in advance, for periods ranging from one to five years.

Revenue from all sales types is recognized at transaction price, which is the amount the Company expects to be entitled to in exchange for transferring goods and/or providing services. Transaction price is calculated as selling price net of variable consideration. Sales to certain distributors are made under arrangements which provide the distributors with volume discounts, price adjustments, and other allowances under certain circumstances. These adjustments and allowances are accounted for as variable consideration. To estimate variable consideration, the Company analyzes historical data, channel inventory levels, current economic trends and changes in customer demand for the Company's products, among other factors. Historically, variable consideration has not been a significant component of the Company's contracts with customers. As of March 31, 2018, the total estimate of variable consideration was not significant.

Contracts with Multiple Performance Obligations

Some of the Company's contracts with customers contain multiple promised goods or services. For these contracts, the Company accounts for the promises separately as individual performance obligations if they are distinct. In determining whether performance obligations meet the criteria for being distinct, the Company considers a number of factors, including the degree of interrelation and interdependence between obligations and whether or not the good or service significantly modifies or transforms another good or service in the contract.

After identifying the separate performance obligations, the transaction price is allocated to the separate performance obligations on a relative standalone selling price basis. Standalone selling prices for products are determined using either an adjusted market assessment or expected cost-plus margin. For customer support and extended warranty services, standalone selling price is primarily based on the prices charged to customers.

Remaining performance obligations represent the transaction price allocated to performances obligations that are unsatisfied or partially unsatisfied as of the end of the reporting period. Unsatisfied and partially unsatisfied performance obligations primarily consist of backlog, which are products and services for which customer purchase orders have been accepted and that are in the process of being delivered.

Contract Balances

Topic 606 distinguishes between a contract asset and accounts receivable based on whether receipt of the consideration is conditional on something other than passage of time. The Company records contract assets when it has a right to consideration and records accounts receivable when it has an "unconditional" right to consideration. Contract liabilities consist of cash payments received in advance of performance or where the Company has a right to consideration that is unconditional, before the Company transfers a good or service to a customer.

The following table reflects the changes in contract balances for the three months ended March 31, 2018 (in thousands):

Item	Balance Sheet Location	March 31, 2018	January 1, 2018	$ change	% change
Contract assets	Prepaid expenses and other current assets	$ 91	$ —	$ 91	100.0 %
Contract liabilities - current	Contract liabilities - current	2,163	2,866	(703)	(24.5)%
Contract liabilities - non-current	Contract liabilities - non-current	1,870	1,883	(13)	(0.7)%

During the three months ended March 31, 2018, contract assets increased and contract liabilities decreased primarily as a result of changes in open contracts containing multiple performance obligations. There were no significant changes in estimates during the three months ended March 31, 2018 that would affect the contract balances.

Warranties

Products sold to customers include standard warranties, covering bug fixes, minor updates such that the product continues to function according to published technical specifications. These standard warranties are assurance type warranties and do not offer any services in addition to the assurance that the product will continue working as specified. Therefore, standard warranties are not considered separate performance obligations in the arrangement. Instead, the expected cost of warranty is accrued as expense in accordance with applicable guidance. Extended warranties are sold with certain products and include additional support services. The transaction price for extended warranties is accounted for as service revenue and recognized over the life of the contract.

Contract Costs

Applying a practical expedient, the Company recognizes the incremental costs of obtaining contracts, which primarily consist of sales commissions, as an expense when incurred if the amortization period of the assets that otherwise would have been recognized is one year or less. These costs are included in sales and marketing expenses. If the incremental direct costs of obtaining a contract relate to a service recognized over a period longer than one year, such costs are capitalized and amortized in line with the related services over the period of benefit. As of March 31, 2018, such capitalizable costs were not significant.

Financing

The Company's contracts do not include a significant financing component. The Company applies the practical expedient not to adjust the promised amount of consideration for the effects of a financing component if the Company expects, at contract inception, that the period between when the Company transfers a good or service to the customer and when the customer pays for the good or service will be one year or less.

Shipping and Handling

The Company has elected to account for shipping and handling activities that occur after the customer has obtained control of a good as a fulfillment cost rather than as an additional promised service. As a result, the Company accrues the costs of shipping and handling when the related revenue is recognized.

Unsatisfied performance obligations

The Company does not disclose the value of unsatisfied performance obligations for (i) contracts with an original expected length of one year or less and (ii) contracts for which we recognize revenue at the amount to which the Company has the right to invoice for the services performed. The majority of the Company's performance obligations in its contracts with customers relate to contracts with a duration of less than one year and therefore transaction price allocated to unsatisfied performance obligations included in contracts with a duration of more than 12 months was not material.

Disaggregation of Revenue

The disaggregation of revenue by geographical regions for the three months ended March 31, 2018 is disclosed in Note 12.

Other Recent Accounting Pronouncements

In February 2016, the FASB issued ASU 2016-02, Leases. ASU 2016-02 requires that lease arrangements longer than 12 months result in an entity recognizing an asset and liability. The updated guidance is effective for the Company on January 1, 2019, and early adoption is permitted. The Company does not plan to early adopt this guidance. The Company expects its assets and liabilities to increase as a result of the adoption of this standard. The Company is currently assessing the potential impact of adopting this new guidance on its consolidated financial statements. The Company is not able to quantify or cannot reasonably estimate quantitative information related to the impact of the new standard on its consolidated financial statements at this time.

In August 2016, FASB issued ASU 2016-15, Statement of Cash Flows, Classification of Certain Cash Receipts and Cash Payments, which addresses eight specific cash flow issues with the objective of reducing the existing diversity in practice. The updated guidance became effective for the Company on January 1, 2018 and was adopted accordingly. The adoption of this standard did not have any effect on the Company's condensed consolidated statement of cash flows for the three months ended March 31, 2018 or 2017.

In November 2016, FASB issued ASU 2016-18, Statement of Cash Flows, Restricted Cash, which requires that a statement of cash flows to explain the change during the period in the total of cash, cash equivalents and amounts generally described as restricted cash and restricted cash equivalents. The updated guidance became effective for the Company beginning on January 1, 2018 and was adopted accordingly, using the retrospective approach. As a result, the Company no longer presents transfers between cash and cash equivalents and restricted cash in the consolidated cash flow statements.

In January 2017, FASB issued ASU 2017-04, Simplifying the Test for Goodwill Impairment, which simplifies the accounting for goodwill impairment. The updated guidance is effective for the Company on January 1, 2020, and will be adopted accordingly. Early adoption is permitted. The Company is currently assessing the potential impact of adopting this new guidance on its consolidated financial statements. The Company is not able to quantify or cannot reasonably estimate quantitative information related to the impact of the new standard on its consolidated financial statements at this time.

In May 2017, the FASB issued ASU No. 2017-09, Compensation—Stock Compensation (Topic 718): Scope of modification accounting. The purpose of the amendment is to clarify which changes to the terms or conditions of a share-based payment award require an entity to apply modification accounting. The updated guidance became effective for the Company beginning on January 1, 2018 and was adopted accordingly. The adoption of this standard had no impact on the Company's consolidated financial statements.

In February 2018, the FASB issued ASU 2018-02, Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income. The amendments in this update allow a reclassification from accumulated other comprehensive income to retained earnings for stranded tax effects resulting from the Tax Cuts and Jobs Act (the "Tax Act"). Consequently the amendments eliminate the stranded tax effects resulting from the Tax Act. Because the amendments only relate to the reclassification of the income tax effect of the Tax Act, the underlying guidance that requires that the effect of a change in tax laws or rates be included in income from continuing operations is not affected. The amendments in this update are effective for all entities for fiscal years beginning after December 15, 2018 and interim periods in those years. The Company is not able to quantify or cannot reasonably estimate quantitative information related to the impact of the new standard on its consolidated financial statements at this time.

(2) Fair Value Measurement

The Company utilizes a fair value hierarchy that is intended to increase consistency and comparability in fair value measurements and related disclosures. The fair value hierarchy is based on inputs to valuation techniques that are used to measure fair value that are either observable or unobservable. Observable inputs reflect assumptions market participants would use in pricing an asset or liability based on market data obtained from independent sources while unobservable inputs reflect a reporting entity's pricing based upon their own market assumptions. The fair value hierarchy consists of the following three levels:

Level 1 – Inputs are quoted prices in active markets for identical assets or liabilities.

Level 2 – Inputs are quoted prices for similar assets or liabilities in an active market, quoted prices for identical or similar assets or liabilities in markets that are not active, inputs other than quoted prices that are observable and market-corroborated inputs which are derived principally from or corroborated by observable market data.

Level 3 – Inputs are derived from valuation techniques in which one or more significant inputs or value drivers are unobservable.

The following financial instruments are not measured at fair value on the Company's condensed consolidated balance sheet as of March 31, 2018 and the consolidated balance sheet as of December 31, 2017, but require disclosure of their fair values: cash and cash equivalents, short-term investments, accounts receivable, accounts payable and debt. The carrying values of financial instruments such as cash and cash equivalents, short-term investments, accounts receivable and accounts payable approximate their fair values based on their short-term nature. The carrying value of the Company's debt approximates their fair values based on the current rates available to the Company for debt of similar terms and maturities.

(3) Cash, Cash Equivalents and Restricted Cash

As of March 31, 2018 and December 31, 2017, the Company's cash and cash equivalents comprised financial deposits. Restricted cash consisted primarily of cash restricted for performance bonds, warranty bonds and collateral for borrowings. Current and long-term restricted cash was $11.5 million at March 31, 2018 and $13.9 million at December 31, 2017.

(4) Balance Sheet Detail

Accounts receivable, net as of March 31, 2018 and December 31, 2017 was as follows (in thousands):

	March 31, 2018	December 31, 2017
Gross accounts receivable	$ 69,948	$ 63,446
Allowance for doubtful accounts	(370)	(922)
Allowance for sales returns	— [1]	(769)
Total allowances	(370)	(1,691)
Total accounts receivable, net	$ 69,578	$ 61,755

[1] Upon adoption of ASC 606, allowances for sales returns were reclassified to accrued and other liabilities as these reserve balances are considered estimated refund liabilities. Refer to Footnote 1(g) for additional information about the adoption impact.

Inventories as of March 31, 2018 and December 31, 2017 were as follows (in thousands):

	March 31, 2018	December 31, 2017
Raw materials	$ 14,442	$ 12,671
Work in process	3,091	2,150
Finished goods	15,181	10,523
Total inventories	$ 32,714	$ 25,344

Inventories provided as collateral for borrowings from Export-Import Bank of Korea amounted to $15.8 million and $11.4 million as of March 31, 2018 and December 31, 2017, respectively.

(5) Property and Equipment

Property and equipment as of March 31, 2018 and December 31, 2017 were as follows (in thousands):

	March 31, 2018	December 31, 2017
Furniture and fixtures	$ 23,197	$ 22,988
Machinery and equipment	5,531	5,455
Leasehold improvements	3,652	3,647
Computers and software	540	621
Other	1,025	1,007
	33,945	33,718
Less accumulated depreciation and amortization	(28,062)	(27,584)
Less government grants	(251)	(261)
Total property and equipment, net	$ 5,632	$ 5,873

Depreciation expense associated with property and equipment for the three months ended March 31, 2018 and March 31, 2017 was $0.4 million and $0.5 million, respectively

The Company receives grants from various government entities mainly to support capital expenditures. Such grants are deferred and are generally refundable to the extent the Company does not utilize the funds for qualifying expenditures.

Once earned, the Company records the grants as a contra amount to the assets and amortizes such amount over the useful lives of the related assets as a reduction to depreciation expense.

(6) Goodwill and Intangible Assets

Goodwill as of March 31, 2018 and December 31, 2017 was as follows (in thousands):

	March 31, 2018	December 31, 2017
Beginning balance	$ 3,977	$ 3,977
Addition from Merger	—	—
Less: accumulated impairment	—	—
Ending balance	$ 3,977	$ 3,977

The Company did not recognize impairment loss on goodwill during the three months ended March 31, 2018 and 2017.

Intangible assets as of March 31, 2018 and December 31, 2017 were as follows (in thousands):

	March 31, 2018		
	Gross Carrying Amount	Accumulated Amortization	Net
Developed technology	$ 3,060	$ (969)	$ 2,091
Customer relationships	5,240	(830)	4,410
Backlog	2,179	(2,179)	—
Total intangible assets	$ 10,479	$ (3,978)	$ 6,501

	December 31, 2017		
	Gross Carrying Amount	Accumulated Amortization	Net
Developed technology	$ 3,060	$ (816)	$ 2,244
Customer relationships	5,240	(699)	4,541
Backlog	2,179	(2,179)	—
Total intangible assets	$ 10,479	$ (3,694)	$ 6,785

Amortization expense associated with intangible assets for the three months ended March 31, 2018 and 2017 was $0.3 million and $0.7 million, respectively.

(7) Debt

Wells Fargo Bank Facility

As of March 31, 2018, the Company had a $25.0 million revolving line of credit and letter of credit facility (the "WFB Facility") with Wells Fargo Bank ("WFB"). Under the WFB Facility, the Company has the option of borrowing funds at agreed upon interest rates. The amount that the Company is able to borrow under the WFB Facility varies based on eligible accounts receivable and inventory, as defined in the WFB Facility, as long as the aggregate amount outstanding does not exceed $25.0 million less the amount committed as security for letters of credit. To maintain availability of funds under the WFB Facility, the Company pays a commitment fee on the unused portion. The commitment fee is 0.25% per annum and is recorded as interest expense.

As of March 31, 2018, the Company had $6.3 million in outstanding borrowings under its WFB Facility, and $2.1 million was committed as security for letters of credit. On April 5, 2018, the Company repaid the $6.3 million borrowings under its WFB Facility. Based on the Company's eligible accounts receivable and inventory, the Company had $5.1 million of financing availability under the WFB Facility as of March 31, 2018. The amounts borrowed under the WFB Facility bear interest, payable monthly, at a floating rate equal to the three-month LIBOR plus a margin based on the Company's average excess availability (as calculated under the WFB Facility). The interest rate on the WFB Facility was 4.81% at March 31, 2018. The maturity date under the WFB Facility is July 15, 2019.

The Company’s obligations under the WFB Facility are secured by substantially all of its personal property assets and those of its subsidiaries that guarantee the WFB Facility, including their intellectual property. The WFB Facility contains certain financial covenants, and customary affirmative covenants and negative covenants. If the Company defaults under the WFB Facility due to a covenant breach or otherwise, WFB may be entitled to, among other things, require the immediate repayment of all outstanding amounts and sell the Company’s assets to satisfy the obligations under the WFB Facility. As of March 31, 2018, the Company was in compliance with the covenants under the WFB Facility.

Bank and Trade Facilities - Foreign Operations

Certain of the Company's foreign subsidiaries have entered into various financing arrangements with foreign banks and other lending institutions consisting primarily of revolving lines of credit, trade facilities, term loans and export development loans. These facilities are renewed as they mature and are generally secured by a security interest in certain assets of the applicable foreign subsidiaries and supported by guarantees given by DNI or third parties. Payments under such facilities are made in accordance with the given lender’s amortization schedules.

As of March 31, 2018 and December 31, 2017, the Company had an aggregate outstanding balance of $27.3 million and $22.8 million, respectively, under such financing arrangements, and the interest rates per annum applicable to outstanding borrowings under these financing arrangements were as listed in the tables below (amount in thousands).

		As of March 31, 2018	
		Interest rate (%)	Amount
Industrial Bank of Korea	Credit facility	3.08 - 3.68	$ 3,679
Industrial Bank of Korea	Trade finance	4.47 - 5.25	2,625
Shinhan Bank	General loan	6.06	3,000
Shinhan Bank	Trade finance	4.16	860
NongHyup Bank	Credit facility	3.16 - 3.9	2,775
The Export-Import Bank of Korea	Export development loan	3.20 - 3.28	7,601
Mitsubishi Bank (Japan)	AR factoring	1.58	5,495
Shinhan Bank (India)	General loan	8.70 - 8.90	1,221
			$ 27,256

		As of December 31, 2017	
		Interest rate (%)	Amount
Industrial Bank of Korea	Credit facility	2.89 - 3.26	$ 2,328
Industrial Bank of Korea	Trade Finance	4.47 - 5.97	2,401
Shinhan Bank	General loan	5.91	2,987
Shinhan Bank	Trade finance	3.90 - 4.14	3,050
NongHyup Bank (Korea)	Credit facility	2.83 - 3.42	860
The Export-Import Bank of Korea	Export development loan	3.20 - 3.28	7,570
Mitsubishi Bank (Japan)	AR factoring	1.58	1,872
Shinhan Bank (India)	General loan	8.70 - 8.90	1,709
			$ 22,777

As of March 31, 2018, the Company had $6.5 million in outstanding borrowings and $4.5 million committed as security for letters of credit under the Company's $12.0 million credit facility with certain foreign banks.

See Note 9 for a discussion of related-party debt.

(8) Non-Controlling Interests

Non-controlling interests for the three months ended March 31, 2018 and 2017 were as follows (in thousands):

	Three Months Ended March 31,	
	2018	2017
Beginning non-controlling interests	$ 534	$ 416
Net income (loss) attributable to non-controlling interests	34	249
Foreign currency translation adjustments (OCI)	30	20
Ending non-controlling interests	$ 598	$ 685

(9) Related-Party Transactions

Related-Party Acquisitions

On December 31, 2017, DNS acquired 100% and 99.99% of the common stock of D-Mobile Limited ("D-Mobile") and DASAN India Private Limited ("DASAN India"), respectively, from DNI. D-Mobile and DASAN India are resellers of the Company's products in Taiwan and India, respectively. The consideration payable by the Company to DNI for the common stock is the net book value of D-Mobile and DASAN India at December 31, 2017, subject to final adjustments. The net book value of D-Mobile and DASAN India was an aggregate of $0.8 million. These transactions were accounted for by the Company as common control transactions, with the net assets transferred recorded at historical cost. The transactions did not result in a change in reporting entity and hence were accounted for prospectively.

Related-Party Debt

In connection with the Merger, on September 9, 2016, the Company entered into a loan agreement with DNI for a $5.0 million unsecured subordinated term loan facility. Under the loan agreement, the Company was permitted to request drawdowns of one or more term loans in an aggregate principal amount not to exceed $5.0 million. As of March 31, 2018, $5.0 million in term loans was outstanding under the facility. Such term loans mature in September 2021 and are pre-payable at any time by the Company without premium or penalty. The interest rate as of March 31, 2018 under this facility was 4.6% per annum.

In addition, the Company borrowed $1.8 million from DNI for capital investment in February 2016, which amount was outstanding as of March 31, 2018. This loan matures in July 2019 and bears interest at a rate of 4.6% per annum, payable annually.

On March 21, 2018, DNS borrowed KRW6.5 billion ($6.1 million in USD) from DNI, which remained outstanding at March 31, 2018. The loan bears interest at a rate of 4.6% and matures on June 27, 2019, and is secured by certain accounts receivable of DNS Korea.

Other Related-Party Transactions

Sales and purchases, cost of revenue, research and product development, selling, marketing, general and administrative, interest expense and other expenses to and from related parties for the three months ended March 31, 2018 and 2017 were as follows (in thousands):

		Three Months Ended March 31, 2018						
Counterparty	DNI ownership Interest	Sales	Cost of revenue	Manufacturing (cost of revenue)	Research and product development	Selling, marketing, general and administrative	Interest expense	Other expenses
DNI (Parent Company)	N/A	$ 1,246	$ 1,123	$ —	$ —	$ 1,022	$ 79	$ 66
Tomato Soft Ltd.	100%	—	—	19	—	—	—	—
Tomato Soft (Xi'an) Ltd.	100%	—	—	10	154	—	—	—
CHASAN Networks Co., Ltd.	100%	—	—	324	18	—	—	—
DASAN FRANCE	100%	202	177	—	—	—	—	—
HANDYSOFT, Inc.	17.63%	150	110	—	—	—	—	—
J-Mobile Corporation	90.47%	—	—	—	—	—	—	—
Fine Solution	100%	—	—	—	—	—	—	—
Solueta	27.21%	—	—	—	—	—	—	—
		$ 1,598	$ 1,410	$ 353	$ 172	$ 1,022	$ 79	$ 66

		Three Months Ended March 31, 2017					
Counterparty	DNI ownership Interest	Sales	Cost of revenue	Manufacturing (cost of revenue)	Research and product development	Selling, marketing, general and administrative	Other expenses
DNI (Parent Company)	N/A	$ 4,151	$ 3,321	$ —	$ —	$ 874	$ 63
CHASAN Networks Co., Ltd.	100%	—	—	195	27	—	—
DASAN FRANCE	100%	394	387	—	—	—	—
DASAN INDIA Private Limited[(1)]	100%	6,287	4,783			—	
D-Mobile[(1)]	100%	11	13	—	—	102	—
Fine Solution	100%	—	—			3	
HANDYSOFT, Inc.	17.64%	20	9	—	—	—	—
J-Mobile Corporation	68.56%	8	—	—	—	132	—
Tomato Soft (Xi'an) Ltd.	100%	—	—	—	171	—	—
		$ 10,871	$ 8,513	$ 195	$ 198	$ 1,111	$ 63

[(1)]As discussed above, on December 31, 2017 DNS acquired DASAN India and D-Mobile from DNI.

The Company has entered into sales agreements with DNI and certain of its subsidiaries. Sales and cost of revenue to DNI and DASAN France (and with respect to the first quarter of 2017, DASAN India and D-Mobile) represent finished goods produced by the Company that are sold to these related parties who sell the Company's products in Korea, France, India and Taiwan, respectively.

The Company has entered into an agreement with CHASAN Networks Co., Ltd. to provide manufacturing and research and development services for the Company. Under the agreement with CHASAN Networks., Ltd., the Company is charged a cost plus 7% fee for the manufacturing and development of certain deliverables.

The Company has entered into an agreement with Tomato Soft Ltd., a wholly owned subsidiary of DNI, to provide manufacturing and research and development services for the Company.

The Company has entered into an agreement with Tomato Soft (Xi'an) Ltd. to provide research and development services for the Company. Under the agreement with Tomato Soft (Xi'an) Ltd., the Company is charged an expected annual fee of $0.8 million for the development of certain deliverables.

Prior to the Merger, as DNS was then a wholly owned subsidiary of DNI, DNI had sales agreements with certain customers on DNS' behalf. Since the Merger, due to these prior sales agreements, the Company has entered into an agreement with DNI in which DNI acts as a sales channel to these customers. Sales to DNI necessary for DNI to fulfill agreements with its customers are recorded net of royalty fees in related-party revenue.

The Company shares office space with DNI and certain of DNI's subsidiaries. Prior to the Merger, DNS, then a wholly owned subsidiary of DNI, shared human resources, treasury and other administrative support with DNI. As such, the Company entered into certain service sharing agreements with DNI and certain of its subsidiaries for the shared office space and shared administrative services. Expenses related to rent and administrative services are allocated to the Company based on square footage occupied and headcount, respectively.

Other expenses to related parties represent expenses to DNI for its payment guarantees relating to the Company's borrowings. The Company pays DNI a guarantee fee which is calculated as 0.9% of the guaranteed amount.

Balances of Receivables and Payables with Related Parties

Balances of receivables and payables arising from sales and purchases of goods and services with related parties as of March 31, 2018 and December 31, 2017 were as follows (in thousands):

		As of March 31, 2018						
Counterparty	DNI ownership Interest	Account receivables	Other receivables	Deposits for lease *	Long-term debt	Accounts payable	Other Payables	Accrued and other current liabilities
DNI (parent company)	N/A	$ 14,015	$ 2	$ 790	$ 12,895	$ 1,533	$ 2,756	$ —
Tomato Soft Ltd.	100%	—	—	—	—	—	10	—
Tomato Soft (Xi'an) Ltd.	100%	—	—	—	—	—	40	—
ABLE	94.57%	139	—	—	—	—	—	—
DASAN France	100%	490	69	—	—	—	—	—
HANDYSOFT, Inc.	17.63%	—	—	—	—	1	—	—
CHASAN Networks Co., Ltd.	100%	—	—	—	—	105	—	—
Solueta	100%	—	1	—	—	—	—	—
		$ 14,644	$ 72	$ 790	$ 12,895	$ 1,639	$ 2,806	$ —

		As of December 31, 2017						
Counterparty	DNI Ownership Interest	Account receivables	Other receivables	Deposits for lease *	Long-term debt	Accounts payable	Other Payables	Accrued and other current liabilities**
DNI (parent company)	N/A	$ 12,576	$ 93	$ 786	$ 6,800	$ 1,264	$ 1,859	$ 59
Tomato Soft Ltd.	100%	—	—	—	—	—	18	—
Tomato Soft (Xi'an) Ltd.	100%	—	—	—	—	—	54	—
ABLE	94.57%	—	—	—	—	—	—	—
DASAN France	100%	870	71	—	—	—	—	—
HANDYSOFT, Inc.	17.63%	52	—	—	—	—	—	—
CHASAN Networks Co., Ltd.	100%	—	—	—	—	87	—	—
Solueta	100%	—	—	—	—	—	25	—
		$ 13,498	$ 164	$ 786	$ 6,800	$ 1,351	$ 1,956	$ 59

* Included in other assets related to deposits for lease in the condensed consolidated balance sheet as of March 31, 2018 and the consolidated balance sheet as of December 31, 2017.

**Included in accrued and other liabilities in the condensed consolidated balance sheet as of March 31, 2018 and the consolidated balance sheet as of December 31, 2017.

(10) Net Income (Loss) Per Share Attributable to DASAN Zhone Solutions, Inc.

Basic net income (loss) per share attributable to DASAN Zhone Solutions, Inc. is computed by dividing the net income (loss) attributable to DASAN Zhone Solutions, Inc. for the period by the weighted average number of shares of common stock outstanding during the period. The calculation of diluted net income (loss) per share attributable to DASAN Zhone

Solutions, Inc. gives effect to common stock equivalents; however, potential common equivalent shares are excluded if their effect is antidilutive. Potential common equivalent shares are composed of incremental shares of common equivalent shares issuable upon the exercise of stock options and the vesting of restricted stock units.

Basic net income (loss) per share is the same as diluted net income (loss) per share for the three months ended March 31, 2017 because the effects of stock options and restricted stock units would have been anti-dilutive.

The following table is a reconciliation of the numerator and denominator in the basic and diluted net income (loss) per share calculation (in thousands, except per share data):

	Three Months Ended March 31,	
	2018	2017
Net income (loss) attributable to DASAN Zhone Solutions, Inc.	$ 107	$ (3,747)
Weighted average number of shares outstanding:		
Basic	16,416	16,378
Effect of dilutive securities:		
Stock options, restricted stock units and share awards	210	—
Diluted	16,626	16,378
Net income (loss) per share attributable to DASAN Zhone Solutions, Inc.:		
Basic	$ 0.01	$ (0.23)
Diluted	$ 0.01	$ (0.23)

The first quarter of 2018 excluded 451.7 thousand stock options at a weighted average exercise price of $12.02 from diluted net income per share because their effect would have been antidilutive. The first quarter of 2017 excluded common stock equivalents of 4.9 thousand from the computation of the diluted net loss per share for the first quarter of 2017 presented because including them would have been antidilutive.

(11) Commitments and Contingencies

Operating Leases

The Company has entered into operating leases for certain office space and equipment, some of which contain renewal options and escalation clauses. Estimated future lease payments under all non-cancellable operating leases with terms in excess of one year, including taxes and service fees, are as follows (in thousands):

	Operating Leases
Year ending December 31:	
2018 (remainder of the year)	$ 3,046
2019	3,956
2020	2,998
2021	2,590
2022	2,664
Thereafter	8,423
Total minimum lease payments	$ 23,677

Warranties

The Company accrues warranty costs based on historical trends for the expected material and labor costs to provide warranty services. Warranty periods are generally one to five years from the date of shipment. The following table reconciles changes in the Company's accrued warranties and related costs for the three months ended March 31, 2018 and 2017 (in thousands):

	Three Months Ended March 31,	
	2018	2017
Beginning balance	$ 931	$ 878
Charged to cost of revenue	359	100
Claims and settlements	(195)	(212)
Foreign exchange impact	(1)	20
Ending balance	$ 1,094	$ 786

Performance Bonds

In the normal course of operations, from time to time, the Company arranges for the issuance of various types of surety bonds, such as bid and performance bonds, which are agreements under which the surety company guarantees that the Company will perform in accordance with contractual or legal obligations. As of March 31, 2018, the Company had $2.9 million of surety bonds guaranteed by third parties.

Purchase Commitments

The Company has agreements with various contract manufacturers which include non-cancellable inventory purchase commitments. The Company's inventory purchase commitments typically allow for cancellation of orders 30 days in advance of the required inventory availability date as set by the Company at time of order. The amount of non-cancellable purchase commitments outstanding, net of reserve, was $5.0 million as of March 31, 2018.

Payment Guarantees provided by Third Parties and DNI

The following table sets forth payment guarantees of the Company's indebtedness and other obligations as of March 31, 2018 (in thousands) that have been provided by third parties and DNI. DNI owns approximately 58% of the outstanding shares of the Company's common stock:

Guarantor	Amount Guaranteed (in thousands)	Description of Obligations Guaranteed
DNI	$ 3,601	Borrowings from Shinhan Bank
DNI	1,800	Purchasing card from Shinhan Bank
DNI	10,650	Letter of credit from Industrial Bank of Korea
DNI	6,000	Letter of credit from NongHyup Bank
DNI	563	Purchasing card from NongHyup Bank
DNI	6,393	Borrowings from Export-Import Bank of Korea
Industrial Bank of Korea	6,893	Letter of credit
NongHyup Bank	4,076	Letter of credit
Shinhan Bank	172	Purchasing card
Industrial Bank of Korea	1,829	Performance bonds
State Bank of India	38	Performance bonds
Seoul Guarantee Insurance Co.	1,024	Performance payment guarantee*
	$ 43,039	

*The Company is responsible for the warranty liabilities generally for the period of two years regarding major product sales and has contracted surety insurance over part of the warranty liabilities.

Royalties

The Company has certain royalty commitments associated with the shipment and licensing of certain products. Royalty expense is generally based on a dollar amount per unit shipped or a percentage of the underlying revenue and is recorded in cost of revenue.

Legal Proceedings

The Company is subject to various legal proceedings, claims and litigation arising in the ordinary course of business. While the outcome of these matters is currently not determinable, the Company records an accrual for legal contingencies that it has determined to be probable to the extent the amount of the loss can be reasonably estimated. The Company does not expect that the ultimate costs to resolve these matters will have a material adverse effect on its consolidated financial position or results of operations. However, litigation is subject to inherent uncertainties, and unfavorable rulings could occur. If an unfavorable ruling were to occur, there exists the possibility of a material adverse impact on the results of operations of the period in which the ruling occurs, or future periods.

(12) Enterprise-Wide Information

The Company is a global provider of network access solutions and communications equipment for service provider and enterprise networks. There are no segment managers who are held accountable for operations, operating results and plans for levels or components below the Company unit level. Accordingly, the Company is considered to be in a single reporting segment and operating unit structure. The Company's chief operating decision maker is the Company's Chief Executive Officer, who reviews financial information presented on a consolidated basis accompanied by disaggregated information about revenues by geographic region for purposes of making operating decisions and assessing financial performance. The Company attributes revenue from customers to individual countries based on location shipped. The following summarizes required disclosures about geographical concentrations and revenue by products and services (in thousands):

	Three Months Ended March 31,	
	2018	2017
Revenue by geography:		
United States	$ 16,551	$ 12,147
Canada	971	1,192
Total North America	17,522	13,339
Latin America	7,958	4,870
Europe, Middle East, Africa	7,486	5,503
Korea	12,124	16,315
Other Asia Pacific	14,414	12,085
Total International	41,982	38,773
Total	$ 59,504	$ 52,112

	Three Months Ended March 31,	
	2018	2017
Revenue by products and services:		
Products	$ 56,726	$ 49,725
Services	2,778	2,387
Total	$ 59,504	$ 52,112

The Company's property and equipment, net of accumulated depreciation, were located in the following geographical areas as of March 31, 2018 and December 31, 2017 (in thousands):

	March 31, 2018	December 31, 2017
United States	$ 3,283	$ 3,393
Korea	1,471	1,633
Japan and Vietnam	844	810
Taiwan and India	34	37
	$ 5,632	$ 5,873

(13) Income Taxes

Income tax (benefit) expense for the three months ended March 31, 2018 and 2017 was approximately $0.0 million and $0.4 million, respectively, on pre-tax income of $0.1 million and pre-tax loss of $3.1 million, respectively. As of March 31, 2018, the income tax rate varied from the United States statutory income tax rate primarily due to valuation allowances in the United States and the mix of earnings generated by the Company's wholly-owned foreign subsidiaries.

The total amount of unrecognized tax benefits, including interest and penalties, at March 31, 2018 was $0.6 million. The amount of tax benefits that would impact the effective income tax rate, if recognized, is $0.1 million. The amount of unrecognized tax benefits increased by $0.2 million during the quarter ended March 31, 2018. There were no significant changes to unrecognized tax benefits during the quarter ended March 31, 2017. The Company does not anticipate any significant changes with respect to unrecognized tax benefits within the next 12 months.

The Company has recognized the provisional tax impacts related to the Tax Act in the Company's consolidated financial statements for the year ended December 31, 2017. The ultimate impact may differ from provisional amounts, possibly materially, due to, among other things, additional analysis, changes in interpretations and assumptions the Company has made, additional regulatory guidance that may be issued, and actions the Company may take as a result of the Tax Act. The Company has not yet determined its policy election with respect to whether to record deferred taxes for basis differences expected to reverse as a result of the global intangible low-taxed income ("GILTI") provisions in future periods or use the period cost method. The Company has, however, included an estimate of the current GILTI impact in its tax provision for 2018. The Company continues to evaluate the impact of the tax reform and the accounting is expected to be completed when the Company's 2017 U.S. corporate income tax return is filed in 2018.

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

Forward-Looking Statements

This report, including "Management's Discussion and Analysis of Financial Condition and Results of Operations," contains forward-looking statements regarding future events and our future results that are subject to the safe harbors created under the Securities Act of 1933 and the Securities Exchange Act of 1934. These statements are based on current expectations, estimates, forecasts, and projections about the industries in which we operate and the beliefs and assumptions of our management. We use words such as "anticipate," "believe," "continue," "could," "estimate," "expect," "goal," "intend," "may," "plan," "project," "seek," "should," "target," "will," "would," variations of such words, and similar expressions to identify forward-looking statements. In addition, statements that refer to projections of earnings, revenue, costs or other financial items; anticipated growth and trends in our business or key markets; cost synergies, growth opportunities and other financial and operating benefits of the Merger; future growth and revenues from our products; our ability to refinance or repay our existing indebtedness prior to the applicable maturity date; future economic conditions and performance; anticipated performance of products or services; plans, objectives and strategies for future operations; and other characterizations of future events or circumstances, are forward-looking statements. Readers are cautioned that these forward-looking statements are only predictions and are subject to risks, uncertainties and assumptions that are difficult to predict, including those identified under the heading "Risk Factors" in Part II, Item 1A, elsewhere in this report and our other filings with the Securities and Exchange Commission (the SEC). Therefore, actual results may differ materially and adversely from those expressed in any forward-looking statements. Factors that might cause such a difference include, but are not limited to, our ability to realize the anticipated cost savings, synergies and other benefits of the Merger and any integration risks relating to the Merger, the ability to generate sufficient revenue to achieve or sustain profitability, the ability to raise additional capital to fund existing and future operations or to refinance or repay our existing indebtedness, defects or other performance problems in our products, any economic slowdown in the telecommunications industry that restricts the ability of our customers to purchase our products, commercial acceptance of our products, intense competition in the communications equipment market from large equipment companies as well as private companies with products that address the same networks needs as our products, higher than anticipated expenses that we may incur, any failure to comply with the periodic filing and other requirements of The Nasdaq Stock Market for continued listing, material weaknesses or other deficiencies in our internal control over financial reporting, the initiation of any civil litigation, regulatory proceedings, government enforcement actions or other adverse effects relating to the Audit Committee investigation or errors in the consolidated financial statements of Zhone Technologies, Inc. and other factors identified elsewhere in this report and in our most recent reports on Forms 10-K, 10-Q and 8-K. We undertake no obligation to revise or update any forward-looking statements for any reason.

OVERVIEW

We are a global provider of network access solutions and communications equipment for service provider and enterprise networks. We research, develop, test, sell, manufacture and support communications equipment in five major areas: broadband access, Ethernet switching, mobile backhaul, passive optical LAN (POLAN) and software defined networks (SDN).

CRITICAL ACCOUNTING POLICIES AND ESTIMATES

For a complete description of what we believe to be the critical accounting policies and estimates used in the preparation of our Unaudited Condensed Consolidated Financial Statements, refer to our Annual Report on Form 10-K for the year ended December 31, 2017. Refer to Note 1 (g) Recent Accounting Pronouncements in the Notes to Unaudited Condensed Consolidated Balance Sheets in Item 1 of Part I of this Quarterly Report on Form 10-Q, for the updated accounting policy of revenue recognition upon the adoption of ASU 2014-09, "Revenue from Contracts with Customers" (Topic 606) as of January 1, 2018.

RESULTS OF OPERATIONS

We list in the table below the historical condensed consolidated statement of comprehensive income (loss) as a percentage of total net revenue for the periods indicated.

	Three Months Ended March 31,	
	2018	2017
Net revenue:		
Net revenue	97 %	79 %
Net revenue - related parties	3 %	21 %
Total net revenue	100 %	100 %
Cost of revenue:		
Products and services	60 %	48 %
Products and services - related parties	3 %	17 %
Amortization of intangible assets	0 %	0 %
Total cost of revenue	63 %	65 %
Gross profit	37 %	35 %
Operating expenses:		
Research and product development	15 %	18 %
Selling, marketing, general and administrative	21 %	21 %
Amortization of intangible assets	0 %	1 %
Total operating expenses	36 %	40 %
Operating income (loss)	1 %	(5)%
Interest income	0 %	0 %
Interest expense	(1)%	(1)%
Other income, net	0 %	(1)%
Income (loss) before income taxes	0 %	(6)%
Income tax provision (benefit)	0 %	1 %
Net income (loss)	0 %	(7)%
Net loss attributable to non-controlling interest	0 %	0 %
Net income (loss) attributable to DASAN Zhone Solutions, Inc.	0 %	(7)%
Foreign currency translation adjustments	1 %	6 %
Comprehensive income (loss)	1 %	(1)%
Comprehensive income attributable to non-controlling interest	0 %	0 %
Comprehensive income (loss) attributable to DASAN Zhone Solutions, Inc.	1 %	(1)%

Net Revenue

Information about our net revenue for products and services for the three months ended March 31, 2018 and 2017 is summarized below (in millions):

	Three Months Ended March 31,			
	2018	2017	Increase	% change
Products	$ 56.7	$ 49.7	$ 7.0	14%
Services	2.8	2.4	0.4	17%
Total	$ 59.5	$ 52.1	$ 7.4	14%

Information about our net revenue for North America and international markets for the three months ended March 31, 2018 and 2017 is summarized below (in millions):

	Three Months Ended March 31,			
	2018	2017	Increase/ (decrease)	% change
Revenue by geography:				
United States	$ 16.5	$ 12.1	$ 4.4	36 %
Canada	1.0	1.2	(0.2)	(17)%
Total North America	17.5	13.3	4.2	32 %
Latin America	8.0	4.9	3.1	63 %
Europe, Middle East, Africa	7.5	5.5	2.0	36 %
Korea	12.1	16.3	(4.2)	(26)%
Other Asia Pacific	14.4	12.1	2.3	19 %
Total International	42.0	38.8	3.2	8 %
Total	$ 59.5	$ 52.1	$ 7.4	14 %

For the three months ended March 31, 2018, net revenue increased 14% or $7.4 million to $59.5 million from $52.1 million for the same period last year. For the three months ended March 31, 2018, product revenue increased 14% or $7.0 million to $56.7 million compared to the same period last year. The increase in net revenue for three months ended March 31, 2018 was primarily due to increased revenues in the United States and Latin America. We also added customers in late 2017, which contributed to the revenue increase during this quarter as compared to the same period last year.

Service revenue represents revenue from maintenance and other services associated with product shipments. For the three months ended March 31, 2018, service revenue increased 17% or $0.4 million to $2.8 million compared to the same period last year. The increase in service revenue was primarily related to a greater number of products under contract.

International net revenue increased 8% or $3.2 million to $42.0 million for the three months ended March 31, 2018 from $38.8 million for the same period last year, and represented 71% of total net revenue compared with 74% during the same period of 2017. The increases in international net revenue were primarily related to improved revenues in Latin America and the Middle East.

For the three months ended March 31, 2018, no customers represented 10% or more of net revenue. For the three months ended March 31, 2017, two customers represented 12% and 11% of net revenue, respectively. We anticipate that our results of operations in any given period may depend to a large extent on sales to a small number of large accounts. As a result, our revenue for any quarter may be subject to significant volatility based upon changes in orders from one or a small number of key customers.

Cost of Revenue and Gross Profit

Total cost of revenue increased 11% or $3.9 million to $37.8 million for the three months ended March 31, 2018, compared to $33.9 million for the three months ended March 31, 2017. Total cost of revenue was 63% of net revenue for the first quarter of 2018 compared to 65% in the first quarter of 2017. The decreases in total cost of revenue, as a percentage of sales, were primarily due to timing of revenues related to product mix into Latin America, the United States and certain Asia Pacific customers and operating efficiencies.

We expect that in the future our cost of revenue as a percentage of net revenue will vary depending on the mix and average selling prices of products sold. In addition, continued competitive and economic pressures could cause us to reduce our prices, adjust the carrying values of our inventory, or record inventory expenses relating to discontinued products and excess or obsolete inventory.

Research and Product Development Expenses

Research and product development expenses decreased 4% or $0.4 million to $9.0 million for the three months ended March 31, 2018 compared to $9.4 million for the three months ended March 31, 2017. As a percentage of sales, research and product development expenses were 15% in the first quarter of 2018 compared to 18% in the first quarter of 2017. The decrease in research and product development expenses was primarily due to slightly decreased personnel-related expenses due to synergies from the Merger. We intend to continue to invest in research and product development to attain our strategic product development objectives while seeking to manage the associated costs through expense controls.

Selling, Marketing, General and Administrative Expenses

Selling, marketing, general and administrative expenses increased 14% or $1.5 million to $12.4 million for the three months ended March 31, 2018 compared to $10.9 million for the three months ended March 31, 2017. As a percentage of sales, selling, marketing, general and administrative expenses were flat at 21% in the first quarter of both 2018 and 2017.

Income Tax Provision

Income tax (benefit) expense for the three months ended March 31, 2018 and 2017 was approximately $0.0 million and $0.4 million, respectively, on pre-tax income of $0.1 million and pre-tax loss of $3.1 million, respectively. As of March 31, 2018, the income tax rate varied from the United States statutory income tax rate primarily due to valuation allowances in the United States and the mix of earnings generated by our wholly-owned foreign subsidiaries.

OTHER PERFORMANCE MEASURES

In managing our business and assessing our financial performance, we supplement the information provided by our U.S. GAAP results with adjusted earnings before stock-based compensation, interest, taxes, and depreciation, or Adjusted EBITDA, a non-GAAP financial measure. We define Adjusted EBITDA as net income (loss) plus (i) interest expense, net, (ii) provision (benefit) for taxes, (iii) depreciation and amortization, (iv) stock-based compensation, and (v) material non-recurring transactions or events, such as Merger transaction costs or a gain (loss) on sale of assets or impairment of fixed assets. We believe that the presentation of Adjusted EBITDA enhances the usefulness of our financial information by presenting a measure that management uses internally to monitor and evaluate our operating performance and to evaluate the effectiveness of our business strategies. We believe Adjusted EBITDA also assists investors and analysts in comparing our performance across reporting periods on a consistent basis because it excludes the impact of items that we do not believe reflect our core operating performance.

Adjusted EBITDA has limitations as an analytical tool. Some of these limitations are:

- Adjusted EBITDA does not reflect our cash expenditures, or future requirements, for capital expenditures or contractual requirements;
- Adjusted EBITDA does not reflect changes in, or cash requirements for, our working capital needs;
- Adjusted EBITDA does not reflect the interest expense, or the cash requirements necessary to service interest or principal payments, on our debts;
- although depreciation and amortization are non-cash expenses, the assets being depreciated and amortized will often have to be replaced in the future, and Adjusted EBITDA does not reflect any cash requirements for such replacements;
- non-cash compensation is and will remain a key element of our overall long-term incentive compensation package, although we exclude it as an expense when evaluating our ongoing operating performance for a particular period; and
- other companies in our industry may calculate Adjusted EBITDA and similar measures differently than we do, limiting its usefulness as a comparative measure.

Because of these limitations, Adjusted EBITDA should not be considered in isolation or as a substitute for net income (loss) or any other performance measures calculated in accordance with U.S. GAAP or as a measure of liquidity. Management understands these limitations and compensates for these limitations by relying primarily on our U.S. GAAP results and using Adjusted EBITDA only supplementally.

Set forth below is a reconciliation of net income (loss) to Adjusted EBITDA, which we consider to be the most directly comparable U.S. GAAP financial measure to Adjusted EBITDA (in thousands):

	Three Months Ended March 31,	
	2018	2017
Net income (loss)	$ 141	$ (3,498)
Add:		
Interest expense, net	237	248
Income tax (benefit) expense	(5)	440
Depreciation and amortization	699	1,181
Stock-based compensation	363	255
Adjusted EBITDA	$ 1,435	$ (1,374)

LIQUIDITY AND CAPITAL RESOURCES

Our operations are financed through a combination of our existing cash, cash equivalents, available credit facilities, and sales of equity and debt instruments, based on our operating requirements and market conditions.

We had a net income of $0.1 million for the quarter ended March 31, 2018 and $1.2 million for the year ended December 31, 2017. However, we incurred a net loss of $15.3 million for the year ended December 31, 2016 and significant losses in prior years. As of March 31, 2018, we had an accumulated deficit of $18.4 million and working capital of $66.7 million. As of March 31, 2018, we had $23.2 million in cash and cash equivalents, which included $9.7 million in cash balances held by our Korean subsidiary and $46.5 million in aggregate principal amount of short-term debt obligations, other long-term debt and long-term related-party borrowings. In addition, as of March 31, 2018 we had $6.6 million committed as security for letters of credit under our revolving credit facilities, leaving $6.1 million in aggregate financing availability under these facilities. Our current lack of liquidity could harm us by:

- increasing our vulnerability to adverse economic conditions in our industry or the economy in general;
- requiring substantial amounts of cash to be used for debt servicing, rather than other purposes, including operations;
- limiting our ability to plan for, or react to, changes in our business and industry; and
- influencing investor and customer perceptions about our financial stability and limiting our ability to obtain financing or acquire customers.

These factors indicate that cash flows might not be sufficient for us to meet our obligations as they come due in the ordinary course of business for a period of 12 months from the date of this interim report on Form 10-Q.

However, we plan to focus on cost management, operating efficiency and restrictions on discretionary spending. In addition, if necessary, we may sell assets, issue debt or equity securities or purchase credit insurance. We may also reduce the scope of our planned product development, reduce sales and marketing efforts and reduce our operations in low margin regions, including reductions in headcount. In the first quarter of 2018, we modified the terms of certain existing debt and obtained a new loan, as described more fully in Note 7 Debt and Note 9 Related Party Transactions. Based on our current plans and current business conditions, we believe that these measures along with our existing cash, cash equivalents and available credit facilities will be sufficient to satisfy our anticipated cash requirements for at least the next 12 months from the date of this Quarterly Report on Form 10-Q.

Our ability to meet our obligations as they become due in the ordinary course of business for the next 12 months will depend on our ability to achieve forecasted results and our ability to access funds approved under existing facilities. Management's belief that we will achieve these results assumes that, among other things, we will continue to be successful in implementing our business strategy and that there will be no material adverse development in our business, liquidity or capital requirements. If one or more of these factors do not occur as expected, it could cause us to fail to meets our obligations as they come due.

Operating Activities

Net cash used in operating activities increased $12.8 million to $13.5 million for the three months ended March 31, 2018 from $0.7 million for the three months ended March 31, 2017. This increase was primarily due to changes in operating assets and liabilities, resulting in using $15.0 million of cash in the first quarter of 2018 compared to providing $0.2 million of cash in the first quarter of 2017.

Investing Activities

Net cash used in investing activities was $0.1 million for the three months ended March 31, 2018 compared to net cash provided by investing activities of $0.4 million for the three months ended March 31, 2017.

Financing Activities

Net cash provided by financing activities was $16.8 million for the three months ended March 31, 2018 compared to net cash used in financing activities of $1.8 million for the three months ended March 31, 2017. This change was primarily due to the borrowing of $6.3 million under the WFB Facility (as defined below) and KRW6.5 billion ($6.1 million in USD) from DNI in the first quarter of 2018.

Cash Management

Our primary source of liquidity comes from our cash and cash equivalents, which totaled $23.2 million at March 31, 2018, as well as our credit facilities, under which we had aggregate financing availability of $6.1 million as of March 31, 2018, and under which $6.6 million was committed as security for letters of credit as of March 31, 2018. Our cash and cash equivalents as of March 31, 2018 included $9.7 million in cash balances held by our Korean subsidiary.

WFB Facility

As of March 31, 2018, we had a $25.0 million revolving line of credit and letter of credit facility (the WFB Facility) with Wells Fargo Bank (WFB). Under the WFB Facility, we have the option of borrowing funds at agreed upon interest rates. The amount that we are able to borrow under the WFB Facility varies based on eligible accounts receivable and inventory, as defined in the WFB Facility, as long as the aggregate amount outstanding does not exceed $25.0 million less the amount committed as security for letters of credit. To maintain availability of funds under the WFB Facility, we pay a commitment fee on the unused portion. The commitment fee is 0.25% per annum and is recorded as interest expense.

As of March 31, 2018, we had $6.3 million outstanding borrowings under the WFB Facility, and $2.1 million was committed as security for letters of credit. On April 5, 2018, the Company repaid the $6.3 million borrowings under its WFB Facility. Based on our eligible accounts receivable and inventory, we had $5.1 million of financing availability under the WFB Facility as of March 31, 2018. The amounts borrowed under the WFB Facility bear interest, payable monthly, at a floating rate equal to the three-month LIBOR plus a margin based on our average excess availability (as calculated under the WFB Facility). The interest rate on the WFB Facility was 4.81% at March 31, 2018. The maturity date under the WFB Facility is July 15, 2019.

Our obligations under the WFB Facility are secured by substantially all of our personal property assets and those of our subsidiaries that guarantee the WFB Facility, including our intellectual property. The WFB Facility contains certain financial covenants, and customary affirmative covenants and negative covenants. If we default under the WFB Facility due to a covenant breach or otherwise, WFB may be entitled to, among other things, require the immediate repayment of all outstanding amounts and sell our assets to satisfy the obligations under the WFB Facility. In the past we have violated the covenants in the WFB Facility and entered into an amendment to cure these violations. As of March 31, 2018, we were in compliance with the covenants under the WFB Facility. We make no assurances that we will be in compliance with these covenants in the future.

Bank and Trade Facilities - Foreign Operations

Certain of our foreign subsidiaries have entered into various financing arrangements with foreign banks and other lending institutions consisting primarily of revolving lines of credit, trade facilities, term loans and export development loans. These facilities are renewed on an annual basis and are generally secured by a security interest in certain assets of the applicable foreign subsidiaries and supported by guarantees given by DNI or third parties. Payments under such facilities are made in accordance with the given lender's amortization schedules. As of March 31, 2018 and December 31, 2017, we had an aggregate outstanding balance of $27.3 million and $22.8 million, respectively, under such financing arrangements, and the interest rate per annum applicable to outstanding borrowings under these financing arrangements ranged from 1.58% to 8.90% as of both March 31, 2018 and December 31, 2017.

Related-Party Debt

In connection with the Merger, on September 9, 2016, we entered into a loan agreement with DNI for a $5.0 million unsecured subordinated term loan facility. Under the loan agreement, we were permitted to request drawdowns of one or more term loans in an aggregate principal amount not to exceed $5.0 million. As of March 31, 2018, $5.0 million in term loans was outstanding under the facility. Such term loans mature in September 2021 and are pre-payable at any time by us without premium or penalty. The interest rate as of March 31, 2018 under this facility was 4.6% per annum.

In addition, we borrowed $1.8 million from DNI for capital investment in February 2016, which amount was outstanding as of March 31, 2018. This loan matures in July 2019 and bears interest at a rate of 4.6% per annum, payable annually.

On March 21, 2018, DNS borrowed KRW6.5 billion ($6.1 million in USD) from DNI, which remained outstanding at March 31, 2018. The loan bears interest at a rate of 4.6% and matures on June 27, 2019, and is secured by certain accounts receivable of DNS Korea.

Interest expense on these related-party borrowings was $0.1 million in the three months ended March 31, 2018 and 2017 respectively.

Future Requirements and Funding Sources

Our fixed commitments for cash expenditures consist primarily of payments under operating leases, inventory purchase commitments, and payments of principal and interest for debt obligations.

From time to time, we may provide or commit to extend credit or credit support to our customers. This financing may include extending the terms for product payments to customers. Any extension of financing to our customers will limit the capital that we have available for other uses.

Our accounts receivable, while not considered a primary source of liquidity, represent a concentration of credit risk because a significant portion of the accounts receivable balance at any point in time typically consists of a relatively small number of customer account balances. As of March 31, 2018, no customer accounted for 10% or more of net accounts receivable and receivables from customers in countries other than the United States represented 88% of net accounts receivable. Additionally, Dasan Networks Japan has factoring arrangements in relation to certain accounts receivable with certain financial institutions as March 31, 2018. We do not currently have any material commitments for capital expenditures, or any other material commitments aside from operating leases for our facilities, inventory purchase commitments and debt.

Contractual Commitments and Off-Balance Sheet Arrangements

At March 31, 2018, our future contractual commitments by fiscal year were as follows (in thousands):

		Payments due by period					
	Total	2018	2019	2020	2021	2022	Thereafter
Operating leases	$23,677	$ 3,046	$ 3,956	$ 2,998	$ 2,590	$ 2,664	$ 8,423
Purchase commitments	5,005	5,005	—	—	—	—	—
Short-term debt	33,556	33,556	—	—	—	—	—
Long-term debt -related party	12,895	—	7,895		5,000		—
Other payable - related party	2,806	2,806					
Royalty obligations	750	750					
Total future contractual commitments	$78,689	$ 45,163	$ 11,851	$ 2,998	$ 7,590	$ 2,664	$ 8,423

Operating Leases

The operating lease amounts shown above represent primarily off-balance sheet arrangements. For operating lease commitments, a liability is generally not recorded on our balance sheet unless the facility represents an excess facility for which an estimate of the facility exit costs has been recorded on our balance sheet, net of estimated sublease income. For operating leases that include contractual commitments for operating expenses and maintenance, estimates of such amounts are included based on current rates. Payments made under operating leases will be treated as rent expense for the facilities currently being utilized.

Purchase Commitments

The purchase commitments shown above represent non-cancellable inventory purchase commitments as of March 31, 2018.

Short-term Debt

Our short-term debt obligations have been recorded as liabilities on our balance sheet, and are comprised of $27.3 million in outstanding borrowings under the credit facilities of our foreign subsidiaries and $6.3 million in outstanding borrowings under the WFB Facility as of March 31, 2018. The amount shown above represents scheduled principal repayments under the facilities, but not the associated interest payments which may vary based on changes in market interest rates. On April 5, 2018, the Company repaid the $6.3 million borrowings under its WFB Facility. At March 31, 2018, the interest rate per annum applicable to outstanding borrowings under the trade facilities of our foreign subsidiaries ranged from 1.58% to 8.90% and was 4.81% under the WFB Facility. See above under "Cash Management" for further information about these facilities.

Related-Party Debt

As of March 31, 2018, we had borrowed an aggregate of $6.8 million from DNI, which consisted of a $5.0 million unsecured subordinated term loan facility which matures in September 2021 and a $1.8 million loan for capital investment which matures in July 2019. In addition, DNS Korea has a secured loan outstanding of KRW 6.5 billion ($6.1 million in USD) which matures in June 2019. All three loans bear interest at a rate of 4.6% per annum.

See above under “Cash Management” for further information about our related-party debt.

RECENT ACCOUNTING PRONOUNCEMENTS

Please refer to Note 1(g) to the unaudited condensed consolidated financial statements included in part 1, Item 1 of this report.

Item 3. Quantitative and Qualitative Disclosures about Market Risk

Concentration of Credit Risk

Financial instruments which potentially subject us to concentrations of credit risk consist primarily of cash and cash equivalents, and accounts receivable. Cash and cash equivalents consist principally of financial deposit and money market accounts. Cash and cash equivalents are principally held with various domestic financial institutions with high credit standing. We perform ongoing credit evaluations of our customers and generally do not require collateral. Allowances are maintained for potential doubtful accounts.

We anticipate that our results of operations in any given period may depend to a large extent on sales to a small number of large accounts. As a result, our revenue for any quarter may be subject to significant volatility based upon changes in orders from one or a small number of key customers.

For the three months ended March 31, 2018, no customer accounted for 10% or more of net revenue. For the three months ended March 31, 2017, two customers represented 12% and 11% of net revenue respectively.

As of March 31, 2018, two customers represented 20% (a related party) and 13% of net accounts receivable, respectively. As of December 31, 2017, two customers represented 20% (a related party) and 11% of net accounts receivable, respectively.

As of March 31, 2018 and December 31, 2017, receivables from customers in countries other than the United States represented 88% and 84%, respectively, of net accounts receivable.

Interest Rate Risk

Our exposure to market risk for changes in interest rates relates primarily to our variable rate outstanding debt. As of March 31, 2018, our outstanding short-term debt balance was $33.6 million, which consisted of principal amount of borrowings under the short-term credit facilities of our foreign subsidiaries and the WFB Facility (all of which bear interest at a variable rate). Amounts borrowed under our short-term credit facilities bore interest ranging from 1.58% to 8.90% as of March 31, 2018 and amounts borrowed under the WFB Facility bore interest at 4.81%. Assuming the outstanding balance on our variable rate debt remains constant over a year, a 1% increase in the interest rate would decrease pre-tax income and cash flow by approximately $0.3 million. As of March 31, 2018, our outstanding long-term debt balance was $12.9 million and consisted of loans from DNI and its affiliates (which bear interest at a fixed rate).

Foreign Currency Risk

We transact business in various foreign countries, and a significant portion of our assets is located in Korea. We have sales operations throughout Asia, Europe the Middle East and Latin America. We are exposed to foreign currency exchange rate risk associated with foreign currency denominated assets and liabilities, primarily intercompany receivables and payables. Accordingly, our operating results are exposed to changes in exchange rates between the U.S. dollar and those currencies.

We have performed a sensitivity analysis as of March 31, 2018 using a modeling technique that measures the impact on the balance sheet arising from a hypothetical 10% adverse movement in the levels of foreign currency exchange rates relative to the U.S. dollar, with all other variables held constant. The sensitivity analysis indicated that a hypothetical 10% adverse movement in foreign currency exchange rates would result in a foreign exchange loss of $2.4 million at March 31, 2018. This sensitivity analysis assumes a parallel adverse shift in foreign currency exchange rates, which do not always move in the same direction. Actual results may differ materially.

Item 4. Controls and Procedures

Disclosure Controls and Procedures

We maintain disclosure controls and procedures designed to provide reasonable assurance of achieving the objective that information required to be disclosed in our reports filed or submitted pursuant to the Securities Exchange Act of 1934 (the Exchange Act) is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms and that such information is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate to allow for timely decisions regarding required disclosures. In designing and evaluating the disclosure controls and procedures, management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives, and management applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures.

As required by Rule 13a-15(b) under the Exchange Act, we conducted an evaluation of the effectiveness of the design and operation of our disclosure controls and procedures as of March 31, 2018, the end of the period covered by this report. The evaluation was done under the supervision and with the participation of management, including our Chief Executive Officer and our Chief Financial Officer. Based upon this evaluation, our Chief Executive Officer and Chief Financial Officer concluded that, because of the material weaknesses in our internal control over financial reporting that existed as of December 31, 2017 and that have not yet been remediated, as described below, our disclosure controls and procedures were not effective as of March 31, 2018.

A material weakness is a deficiency, or a combination of deficiencies, in internal control over financial reporting such that there is a reasonable possibility that a material misstatement of the registrant's annual or interim financial statements will not be prevented or detected on a timely basis. Based on the results of the independent investigation and due to the incorrect application of generally accepted accounting principles that resulted in material misstatements and a restatement of our unaudited condensed consolidated financial statements for the three and nine months ended September 30, 2016, management identified material weaknesses in our internal control over financial reporting as of December 31, 2016 which continued to exist at December 31, 2017. Specifically, we did not maintain an effective control environment as there was an insufficient complement of personnel with appropriate accounting knowledge, experience and competence, resulting in incorrect application of generally accepted accounting principles. This material weakness contributed to the following material weaknesses. We did not maintain effective controls over our financial close process. Also, we did not design and maintain effective controls over the review of supporting information to determine the completeness and accuracy of the accounting for complex transactions, specifically related to the business combination that occurred on September 9, 2016, which resulted in an incorrect application of generally accepted accounting principles that resulted in material misstatements and a restatement of our unaudited condensed consolidated financial statements for the three and nine months period ended September 30, 2016. Additionally, these material weaknesses could result in a misstatement in the financial statements that would result in a material misstatement in the annual or interim consolidated financial statements that would not be prevented or detected.

In light of the material weakness described above, and based on the criteria set forth in Internal Control —Integrated Framework (2013) issued by the Committee Sponsoring Organizations of the Treadway Commission (COSO), our management concluded that our internal control over financial reporting was not effective as of December 31, 2017.

As of the date of this report, we are re-assessing the design of our controls and modifying processes related to the accounting for significant and unusual transactions as well as enhancing monitoring and oversight controls in the application of applicable accounting guidance related to such transactions. In connection therewith, we have hired and we anticipate that we will hire additional accounting personnel with relevant skills, training and experience, and conduct further training of accounting and finance personnel.

Changes in Internal Control over Financial Reporting

Except as described above, there were no changes in our internal control over financial reporting that occurred during our last fiscal quarter that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting. Merger-related integration activities may lead us to modify certain internal controls in future periods.

Inherent Limitations on Effectiveness of Controls

Our management, including our Chief Executive Officer and Chief Financial Officer, does not expect that our disclosure controls and procedures or our internal control over financial reporting will prevent or detect all error and all fraud. A control system, no matter how well designed and operated, can provide only reasonable, not absolute, assurance that the control system's objectives will be met. The design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Further, because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that misstatements due to error or fraud will not occur or that all control issues and instances of fraud, if any, within the company have been detected. These inherent limitations include the realities that judgments in decision-making can be faulty and that breakdowns can occur because of simple error or mistake. Controls can also be circumvented by the individual acts of some persons, by collusion of two or more people, or by management override of the controls. The design of any system of controls is based in part on certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions. Projections of any evaluation of controls effectiveness to future periods are subject to risks. Over time, controls may become inadequate because of changes in conditions or deterioration in the degree of compliance with policies or procedures.

PART II. OTHER INFORMATION

Item 1. Legal Proceedings

We are subject to various legal proceedings, claims and litigation arising in the ordinary course of business. While the outcome of these matters is currently not determinable, we do not expect that the ultimate costs to resolve these matters will have a material adverse effect on our consolidated financial position or results of operations. However, litigation is subject to inherent uncertainties, and unfavorable rulings could occur. If an unfavorable ruling were to occur, there exists the possibility of a material adverse impact on the results of operations of the period in which the ruling occurs, or future periods.

Item 1A. Risk Factors

In addition to the other information set forth in this report, you should carefully consider the factors discussed in Part I, "Item 1A, Risk Factors" in our Annual Report on Form 10-K for the year ended December 31, 2017, which could materially affect our business, financial condition or future results. There have been no material changes to the risk factors described in the "Risk Factors" section in our Annual Report on Form 10-K for the year ended December 31, 2017. The risks described in our Annual Report on Form 10-K are not the only risks facing our company. Additional risks and uncertainties not currently known to us or that we currently deem to be immaterial also may materially adversely affect our business, financial condition and/or operating results.

Item 6. Exhibits

EXHIBIT INDEX

Exhibit Number	Description
10.1	Eighth Amendment to Credit and Security Agreements, dated as of March 19, 2018, by and among DASAN Zhone Solutions, Inc., ZTI Merger Subsidiary III, Inc., Premisys Communications, Inc., Zhone Technologies International, Inc., Paradyne Networks, Inc., Paradyne Corporation, Dasan Network Solutions, Inc. and Wells Fargo
10.2	Ninth Amendment to Credit and Security Agreements, dated as of March 30, 2018, by and among DASAN Zhone Solutions, Inc., ZTI Merger Subsidiary III, Inc., Premisys Communications, Inc., Zhone Technologies International, Inc., Paradyne Networks, Inc., Paradyne Corporation, Dasan Network Solutions, Inc. and Wells Fargo
10.3	Letter Agreement, dated March 27, 2018, by and among DASAN Zhone Solutions, Inc., ZTI Merger Subsidiary III, Inc., Premisys Communications, Inc., Zhone Technologies International, Inc., Paradyne Networks, Inc., Paradyne Corporation, Dasan Network Solutions, Inc. and Wells Fargo
10.4	Loan Agreement, dated as of March 27, 2018, by and between DASAN Networks, Inc. and DASAN Network Solutions, Inc.
10.5#	DASAN Zhone Solutions, Inc. Non-Employee Director Compensation Program
31.1	Certification of Chief Executive Officer Pursuant to Rule 13a-14(a)/15d-14(a)
31.2	Certification of Chief Financial Officer Pursuant to Rule 13a-14(a)/15d-14(a)
32.1	Section 1350 Certification of Chief Executive Officer and Chief Financial Officer
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 Labels Linkbase
101.PRE	XBRL Taxonomy Extension Presentation Linkbase

#	Management contract or compensatory plan or arrangement in which one or more executive officers or directors participates.

SIGNATURES

Pursuant to the retirements 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.

DASAN ZHONE SOLUTIONS, INC.

Date: May 15, 2018

By:	/s/ IL YUNG KIM
Name:	Il Yung Kim
Title:	President and Chief Executive Officer
By:	/s/ MICHAEL GOLOMB
Name:	Michael Golomb
Title:	Chief Financial Officer, Corporate Treasurer and Secretary

Exhibit 31.1

CERTIFICATION OF CHIEF EXECUTIVE OFFICER
PURSUANT TO
RULE 13a-14(a)/15d-14(a)

I, Il Yung Kim, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of DASAN Zhone Solutions, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant’s other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant’s disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant’s internal control over financial reporting that occurred during the registrant’s most recent fiscal quarter (the registrant’s fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant’s internal control over financial reporting; and

5. The registrant’s other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant’s auditors and the audit committee of the registrant’s board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant’s ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant’s internal control over financial reporting.

Date: May 15, 2018

/s/ IL YUNG KIM

Il Yung Kim
President and Chief Executive Officer

Exhibit 31.2

**CERTIFICATION OF CHIEF FINANCIAL OFFICER
PURSUANT TO
RULE 13a-14(a)/15d-14(a)**

I, Michael Golomb, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of DASAN Zhone Solutions, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: May 15, 2018

/s/ MICHAEL GOLOMB

Michael Golomb
Chief Financial Officer, Corporate Treasurer and Secretary

Exhibit 32.1

SECTION 1350 CERTIFICATION

Pursuant to 18 U.S.C. Section 1350, Il Yung Kim, President and Chief Executive Officer of DASAN Zhone Solutions, Inc. (the "Company") and Michael Golomb, Chief Financial Officer, Corporate Treasurer and Secretary, of the Company each hereby certify that, to their knowledge:

1. The Company's Quarterly Report on Form 10-Q for the quarter March 31, 2018 (the "Report") fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, and

2. The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: May 15, 2018

/s/ IL YUNG KIM

Il Yung Kim

President and Chief Executive Officer

/s/ MICHAEL GOLOMB

Michael Golomb

Chief Financial Officer, Corporate Treasurer and Secretary