

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549**

FORM 20-F

- (Mark One)
- REGISTRATION STATEMENT PURSUANT TO SECTION 12(b) OR (g) OF THE SECURITIES EXCHANGE ACT OF 1934
OR
 - ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the fiscal year ended December 31, 2019
OR
 - TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
OR
 - SHELL COMPANY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

Commission file number 001-36130

voxeljet AG

(Exact name of Registrant as specified in its charter)

Not Applicable

(Translation of Registrant's name into English)

Federal Republic of Germany

(Jurisdiction of incorporation or organization)

Paul-Lenz Straße 1a

86316 Friedberg, Germany

(Address of principal executive offices)

Rudolf Franz, Telephone: (49) 821 7483 100, Facsimile: (49) 821 7483 111,

Address: Paul-Lenz Straße 1a, 86316 Friedberg, Germany

(Name, Telephone, E-mail and/or Facsimile number and Address of Company Contact Person)

Securities registered or to be registered pursuant to Section 12(b) of the Act.

Title of each class	Trading symbol	Name of each exchange on which registered
American Depositary Shares each representing one-fifth of an ordinary share Ordinary shares, €1.00 nominal value per share*	VJET	New York Stock Exchange LLC New York Stock Exchange LLC*

* Not for trading purposes, but only in connection with the registration of American Depositary Shares pursuant to the requirements of the Securities and Exchange Commission. Securities registered or to be registered pursuant to Section 12(g) of the Act.

None
(Title of Class)

Securities registered for which there is a reporting obligation pursuant to Section 15(d) of the Act.

None
(Title of Class)

Indicate the number of outstanding shares of each of the issuer's classes of capital or common stock as of the close of the period covered by the annual report.

Ordinary shares: 4,836,000

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes No

If this report is an annual or transition report, indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934. Yes No

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 every Interactive Data File required to be submitted 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 such files). Yes No

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

Large accelerated filer Accelerated filer Non-accelerated filer Emerging growth company

If an emerging growth company that prepares its financial statements in accordance with U.S. GAAP, 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.

†The term "new or revised financial accounting standard" refers to any update issued by the Financial Accounting Standards Board to its Accounting Standards Codification after April 5, 2012.

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. Yes No

Indicate by check mark which basis of accounting the registrant has used to prepare the financial statements included in this filing:

U.S. GAAP International Financial Reporting Standards as issued by the International Accounting Standards Board Other

If "Other" has been checked in response to the previous question, indicate by check mark which financial statement item the registrant has elected to follow. Item 17 Item 18

If this is an annual report, indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes No

(APPLICABLE ONLY TO ISSUERS INVOLVED IN BANKRUPTCY PROCEEDINGS DURING THE PAST FIVE YEARS)

Indicate by check mark whether the registrant has filed all documents and reports required to be filed by Sections 12, 13 or 15(d) of the Securities Exchange Act of 1934 subsequent to the distribution of securities under a plan confirmed by a court. Yes No

TABLE OF CONTENTS

<u>PART I</u>		
<u>ITEM 1.</u>	<u>IDENTITY OF DIRECTORS, SENIOR MANAGEMENT AND ADVISERS</u>	4
<u>ITEM 2.</u>	<u>OFFER STATISTICS AND EXPECTED TIMETABLE</u>	4
<u>ITEM 3.</u>	<u>KEY INFORMATION</u>	4
<u>ITEM 4.</u>	<u>INFORMATION ON THE COMPANY</u>	32
<u>ITEM 4A.</u>	<u>UNRESOLVED STAFF COMMENTS</u>	44
<u>ITEM 5.</u>	<u>OPERATING AND FINANCIAL REVIEW AND PROSPECTS</u>	44
<u>ITEM 6.</u>	<u>DIRECTORS, SENIOR MANAGEMENT AND EMPLOYEES</u>	62
<u>ITEM 7.</u>	<u>MAJOR SHAREHOLDERS AND RELATED PARTY TRANSACTIONS</u>	72
<u>ITEM 8.</u>	<u>FINANCIAL INFORMATION</u>	73
<u>ITEM 9.</u>	<u>THE OFFER AND LISTING</u>	74
<u>ITEM 10.</u>	<u>ADDITIONAL INFORMATION</u>	75
<u>ITEM 11.</u>	<u>QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK</u>	85
<u>ITEM 12.</u>	<u>DESCRIPTION OF SECURITIES OTHER THAN EQUITY SECURITIES</u>	86
<u>PART II</u>		
<u>ITEM 13.</u>	<u>DEFAULTS, DIVIDEND ARREARAGES AND DELINQUENCIES</u>	87
<u>ITEM 14.</u>	<u>MATERIAL MODIFICATIONS TO THE RIGHTS OF SECURITY HOLDERS AND USE OF PROCEEDS</u>	88
<u>ITEM 15.</u>	<u>CONTROLS AND PROCEDURES</u>	88
<u>ITEM 16.</u>	<u>RESERVED</u>	92
<u>ITEM 16A.</u>	<u>AUDIT COMMITTEE FINANCIAL EXPERT</u>	92
<u>ITEM 16B.</u>	<u>CODE OF ETHICS</u>	92
<u>ITEM 16C.</u>	<u>PRINCIPAL ACCOUNTANT FEES AND SERVICES</u>	93
<u>ITEM 16D.</u>	<u>EXEMPTIONS FROM THE LISTING STANDARDS FOR AUDIT COMMITTEES</u>	93
<u>ITEM 16E.</u>	<u>PURCHASES OF EQUITY SECURITIES BY THE ISSUER AND AFFILIATED PURCHASERS</u>	93
<u>ITEM 16F.</u>	<u>CHANGE IN REGISTRANT'S CERTIFYING ACCOUNTANT</u>	93
<u>ITEM 16G.</u>	<u>CORPORATE GOVERNANCE</u>	96
<u>ITEM 16H.</u>	<u>MINE SAFETY DISCLOSURE</u>	97
<u>PART III</u>		
<u>ITEM 17.</u>	<u>FINANCIAL STATEMENTS</u>	97
<u>ITEM 18.</u>	<u>FINANCIAL STATEMENTS</u>	97
<u>ITEM 19.</u>	<u>EXHIBITS</u>	98

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This annual report on Form 20-F contains forward-looking statements concerning our business, operations and financial performance and condition as well as our plans, objectives and expectations for our business operations and financial performance and condition. Any statements that are not of historical facts may be deemed to be forward-looking statements. You can identify these forward-looking statements by words such as “believes,” “estimates,” “anticipates,” “expects,” “plans,” “intends,” “may,” “could,” “might,” “will,” “should,” “aims,” or other similar expressions that convey uncertainty of future events or outcomes. Forward-looking statements appear in a number of places throughout this annual report and include statements regarding our intentions, beliefs, assumptions, projections, outlook, analyses or current expectations concerning, among other things, our indebtedness and ability to continue as a going concern, results of operations, cash needs, financial condition, liquidity, prospects, growth and strategies, intellectual property position, the industry in which we operate and the trends that may affect the industry or us.

By their nature, forward-looking statements involve risks and uncertainties because they relate to events, competitive dynamics and industry change, and depend on economic circumstances that may or may not occur in the future or may occur on longer or shorter timelines than anticipated. Although we believe that we have a reasonable basis for each forward-looking statement contained in this annual report, we caution you that forward-looking statements are not guarantees of future performance and involve known and unknown risks, uncertainties and other factors that are in some cases beyond our control. All of our forward-looking statements are subject to risks and uncertainties that may cause our actual results to differ materially from our expectations.

Actual results could differ materially from our forward-looking statements due to a number of factors, including, without limitation, risks related to:

- our ability to maintain our operations as a going concern;
- matters arising from the results of our Audit Committee investigation regarding potential illegal acts, including any identified material weaknesses, recommended remediations, potential regulatory investigations and proceedings, litigation matters, and additional expenses;
- our ability to implement restructurings resulting in the achievement of the intended benefits;
- fluctuations in our revenues and operating results;
- our ability to regain and maintain compliance with the New York Stock Exchange’s (the “NYSE”) Listed Company Manual and maintain the listing of our American Depositary Shares (“ADSs”) on the NYSE;
- our ability to raise additional capital on attractive terms, or at all, to meet our growth strategy as well as to support the continuation of our operation;
- our ability to maintain sufficient internal controls over financial reporting to comply with Section 404 of the Sarbanes-Oxley Act, as applicable, and to mitigate and remediate effectively the material weaknesses in our internal control over financial reporting;
- our ability to achieve the intended benefits from and the related restructuring costs of the strategic restructuring of our workforce in the United Kingdom (or “UK”) and Germany;
- our ability to introduce new 3D printers and related print materials acceptable to the market and to improve the technology and print materials used in our current 3D printers;
- the long sales cycle for our products, which makes the timing of our production planning and our revenues difficult to predict;
- our ability to adequately increase demand for our products;

[Table of Contents](#)

- our ability to significantly increase the number of materials for use in our 3D printers fast enough to meet our business plan;
- our dependence upon sales to certain industries;
- our relationships with suppliers, especially with limited source suppliers of components of and consumables for our products;
- our ability to manage the expansion of our operations, including sales efforts, effectively, including in difficult market environments like India and China, in order to achieve our projected levels of growth;
- our ability to attract and retain key management or other key employees;
- rapid changes in government, economic and political policies and conditions, political or civil unrest or instability, terrorism, epidemics or pandemics like coronavirus and other similar outbreaks or events;
- our ability to obtain patent protection for our products or otherwise protect our intellectual property rights;
- our ability to protect our trade secrets and intellectual property;
- significant fluctuations in the price of our ADSs;
- our exemption, as a foreign private issuer, from certain requirements under United States (or “U.S.”) securities laws and NYSE corporate governance rules; and
- the other factors listed in “Item 3. Key Information—D. Risk Factors” and elsewhere in this annual report.

Any forward-looking statements that we make in this annual report speak only as of the date of such statement, and we undertake no obligation to update such statements to reflect events or circumstances after the date of this annual report or to reflect the occurrence of unanticipated events. Comparisons of results for current and any prior periods are not intended to express any future trends or indications of future performance, unless expressed as such, and should only be viewed as historical data. You should, however, review the factors and risks we describe in the reports we will file from time to time with the Securities and Exchange Commission, or SEC after the date of this annual report. See “Item 10. Additional Information—H. Documents on Display.”

You should also read carefully the factors described in “Item 3. Key Information—D. Risk Factors” section of this annual report and elsewhere to better understand the risks and uncertainties inherent in our business and underlying any forward-looking statements. As a result of these factors, we cannot assure you that the forward-looking statements in this annual report will prove to be accurate. Furthermore, if our forward-looking statements prove to be inaccurate, the inaccuracy may be material. In light of the significant uncertainties in these forward-looking statements, you should not regard these statements as a representation or warranty by us or any other person that we will achieve our objectives and plans in any specified timeframe, or at all.

In this annual report, unless the context otherwise requires, the “Company,” “voxeljet,” “we,” “us,” and “our” refer to voxeljet AG and its subsidiaries.

SERVICE OF PROCESS AND ENFORCEMENT OF CIVIL LIABILITIES

voxeljet AG is a German stock corporation (*Aktiengesellschaft* or *AG*), and its registered offices and most of its assets are located outside of the United States. In addition, most of the members of our Management Board, our Supervisory Board, and our senior management are residents of Germany and jurisdictions other than the United States. As a result, it may not be possible for you to effect service of process within the United States upon these individuals or upon voxeljet AG or to enforce judgments obtained in U.S. courts based on the civil liability provisions of the U.S. securities laws against voxeljet AG in the United States. Awards of punitive damages in actions brought in the United States or elsewhere are generally not enforceable in Germany. In addition, actions brought in a German court against voxeljet AG or the members of its Management Board and Supervisory Board, and its senior management to enforce liabilities based

[Table of Contents](#)

on U.S. federal securities laws may be subject to certain restrictions; in particular, German courts generally do not award punitive damages. Litigation in Germany is also subject to rules of procedure that differ from the U.S. rules, including with respect to the taking and admissibility of evidence, the conduct of the proceedings and the allocation of costs. Proceedings in Germany would have to be conducted in the German language, and all documents submitted to the court would, in principle, have to be translated into German. For these reasons, it may be difficult for a U.S. investor to bring an original action in a German court predicated upon the civil liability provisions of the U.S. federal securities laws against us, the members of our Management Board, Supervisory Board and senior management. In addition, even if a judgment against our Company, the non-U.S. members of our Management Board, Supervisory Board or senior management based on the civil liability provisions of the U.S. federal securities laws is obtained, a U.S. investor may not be able to enforce it in U.S. or German courts.

PART I

ITEM 1. IDENTITY OF DIRECTORS, SENIOR MANAGEMENT AND ADVISERS

Not applicable.

ITEM 2. OFFER STATISTICS AND EXPECTED TIMETABLE

Not applicable.

ITEM 3. KEY INFORMATION

A. SELECTED FINANCIAL DATA

We present below our selected historical financial and operating data as of and for each of the years in the five-year period ended December 31, 2019. The financial data have been derived from our financial statements which have been prepared in accordance with International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB) and audited in accordance with the standards of the Public Company Accounting Oversight Board (United States). The financial statements as of December 31, 2019 and 2018 and for each of the years in the three-year period ended December 31, 2019 are included elsewhere in this annual report. The selected historical consolidated financial data for fiscal 2016 and 2015 and as of December 31, 2016 and 2015 has been derived from voxeljet AG's audited consolidated financial statements, which are not included in this annual report. Our historical results are not necessarily indicative of the financial results to be expected in any future periods. You should read this information in conjunction with "Item 5. Operating and Financial Review and Prospects," and our financial statements and related notes, each included elsewhere in this annual report.

Statement of Comprehensive Loss Data:

	Year Ended December 31,					
	2019	2019	2018⁽ⁱ⁾	2017⁽ⁱ⁾⁽ⁱⁱⁱ⁾	2016	2015
	(\$ in thousands, except share and per share data)⁽ⁱ⁾	(€ in thousands, except share and per share data)				
Revenues	\$ 27,542	€ 24,602	€ 26,009	€ 23,178	€ 22,338	€ 24,064
Cost of sales	19,508	17,426	16,864	(13,853)	15,435	17,147
Gross profit	8,034	7,176	9,145	9,325	6,903	6,917
Selling expenses	7,969	7,118	7,332	6,474	5,312	6,922
Administrative expenses	7,783	6,952	5,587	5,129	4,563	5,178
Research and development expenses	8,074	7,212	6,334	5,528	5,683	5,470
Other operating expenses	1,058	945	751	1,844	3,881	888
Other operating income	(2,399)	(2,143)	(1,297)	(1,001)	(1,417)	(2,130)
Operating loss	(14,451)	(12,908)	(9,562)	(8,649)	(11,119)	(9,411)
Finance expense	1,632	1,458	1,143	190	230	277
Finance income	(161)	(144)	(1,952)	(365)	(38)	(158)
Financial result	1,471	1,314	(809)	(175)	192	119
Loss before income taxes	(15,922)	(14,222)	(8,753)	(8,474)	(11,311)	(9,530)
Income tax expenses	10	9	11	80	2	64
Net loss	\$ (15,932)	€ (14,231)	€ (8,764)	€ (8,554)	€ (11,313)	€ (9,594)
Other comprehensive (income) loss that may be reclassified subsequently to profit or loss	\$ 451	€ 403	€ 179	€ (505)	€ (1,111)	€ 237
Total comprehensive Loss	\$ (16,383)	€ (14,634)	€ (8,943)	€ (8,049)	€ (10,202)	€ (9,831)
Loss attributable to:						
Owner of the Company	\$ (15,636)	€ (13,967)	€ (8,728)	€ (8,538)	€ (11,287)	€ (9,594)
Non-controlling interests	\$ (296)	(264)	(36)	(16)	(26)	--
	\$ (15,932)	€ (14,231)	€ (8,764)	€ (8,554)	€ (11,313)	€ (9,594)
Total comprehensive loss attributable to:						
Owner of the Company	\$ (16,087)	€ (14,370)	€ (8,907)	€ (8,033)	€ (10,176)	€ (9,831)
Non-controlling interests	\$ (296)	(264)	(36)	(16)	(26)	--
	\$ (16,383)	€ (14,634)	€ (8,943)	€ (8,049)	€ (10,202)	€ (9,831)
Loss per share	\$ (3.29)	€ (2.94)	€ (2.21)	€ (2.30)	€ (3.04)	€ (2.58)
Weighted average number of ordinary shares outstanding	4,836,000	4,836,000	3,940,636	3,720,000	3,720,000	3,720,000

Statement of Financial Position Data:

	Year Ended December 31,					
	2019	2019	2018⁽ⁱ⁾	2017⁽ⁱ⁾⁽ⁱⁱ⁾⁽ⁱⁱⁱ⁾	2016	2015
	(\$ in thousands)^(A)	(€ in thousands)				
Cash and cash equivalents	\$ 4,907	€ 4,368	€ 7,402	€ 7,569	€ 7,849	€ 2,086
Inventories	13,996	12,459	10,064	9,259	11,213	7,841
Fixed assets	30,717	27,343	27,675	27,949	23,521	21,383
Current financial assets	8,322	7,408	12,905	14,044	12,579	31,746
Total assets	69,993	62,305	69,352	67,002	62,139	70,120
Total liabilities	32,549	28,974	22,877	23,113	10,603	8,651
Equity	37,444	33,331	46,475	43,889	51,536	61,469

Other Data (unaudited):

	2019	2019	2018⁽ⁱ⁾	2017⁽ⁱ⁾⁽ⁱⁱ⁾⁽ⁱⁱⁱ⁾	2016	2015
	(\$ in thousands, except 3D printers sold and per share data)^(A)	(€ in thousands, except 3D printers sold and per share data)				
EBITDA ⁽²⁾	\$ (9,736)	€ (8,697)	€ (6,056)	€ (5,486)	€ (8,577)	€ (6,429)
Net loss per ADS ⁽³⁾	\$ (0.66)	€ (0.59)	€ (0.44)	€ (0.46)	€ (0.61)	€ (0.52)
3D printers sold ⁽⁴⁾	19	19	19	15	18	18

The following table reconciles net loss to EBITDA for the periods presented:

	Year Ended December 31,					
	2019	2019	2018⁽ⁱ⁾	2017⁽ⁱ⁾⁽ⁱⁱ⁾⁽ⁱⁱⁱ⁾	2016	2015
	(\$ in thousand)^(A)	(€ in thousands)				
Net loss	\$ (15,932)	€ (14,231)	€ (8,764)	€ (8,554)	€ (11,313)	€ (9,594)
Income tax expenses	10	9	11	80	2	64
Financial result	1,471	1,314	(809)	(175)	192	119
EBIT	(14,451)	(12,908)	(9,562)	(8,649)	(11,119)	(9,411)
Depreciation and amortization	4,714	4,211	3,506	3,163	2,542	2,982
EBITDA	\$ (9,736)	€ (8,697)	€ (6,056)	€ (5,486)	€ (8,577)	€ (6,429)

Notes:

⁽ⁱ⁾ The Company has initially applied IFRS 16 as of January 1, 2019, using the modified retrospective approach. Under this approach, comparative information is not restated and the cumulative effect of initially applying IFRS 16 is recognized in retained earnings at the date of initial application. For further information, see Item 18. Financial Statements, Note 3 “Summary of significant accounting policies” to the consolidated financial statements.

⁽ⁱⁱ⁾ Comparative figures for the year ended December 31, 2017 were restated for immaterial errors. For further information, see Form 20-F filed with the SEC on March 28, 2019, Part III, Item 18. Financial Statements, Note 6 “Correction of errors” to the consolidated financial statements.

⁽ⁱⁱⁱ⁾ The Company has initially applied IFRS 15 and IFRS 9 as of January 1, 2018. Under the transition methods chosen, comparative information has not been restated. For further information, see Form 20-F filed with the SEC on March 28, 2019, Part III, Item 18. Financial Statements, Note 3 “Summary of significant accounting policies” to the consolidated financial statements.

(A) Amounts in this column are not audited and have been converted from Euros to U.S. dollars solely for the convenience of the reader at an exchange rate of \$ 1.1195 per Euro, the average exchange rate from January 1 until December 31, 2019.

[Table of Contents](#)

- (1) Amounts in this column are not audited and have been converted from Euros to U.S. dollars solely for the convenience of the reader. Balance sheet positions and income statement positions are converted at the exchange rate on December 31, 2019 of \$ 1.1234 and the average exchange rate from January 1 until December 31, 2019 of \$ 1.1195 per Euro, respectively.
- (2) We define EBITDA (earnings before interest, taxes, depreciation and amortization) as profit (loss) plus income tax expenses (benefit), financial result and depreciation and amortization. Disclosure in this annual report of EBITDA, which is a non-IFRS financial measure, is intended as a supplemental measure of our performance that is not required by, or presented in accordance with, IFRS. EBITDA should not be considered as an alternative to profit (loss) or any other performance measure derived in accordance with IFRS. Our presentation of EBITDA should not be construed to imply that our future results will be unaffected by unusual or non-recurring items. However, senior management believes EBITDA is useful to investors and other users of our financial statements in evaluating operating performance because it provides them with an additional tool to compare business performance across companies and across periods.
- (3) Each ADS represents one-fifth of an ordinary share.
- (4) Includes refurbished 3D printers but does not include test machines or 3D printers involved in sale and leaseback transactions.

B. CAPITALIZATION AND INDEBTEDNESS

Not applicable.

C. REASONS FOR THE OFFER AND USE OF PROCEEDS

Not applicable.

D. RISK FACTORS

Risks Related to Our Business and Industry

If we cannot meet the continued listing requirements of the New York Stock Exchange, our ADSs may be subject to delisting from the New York Stock Exchange, which would have a material adverse effect on our business, financial condition, prospects and liquidity and value of our ADSs.

Our ADSs are currently listed on the NYSE. On April 20, 2020, we received a notice (the “Notice”) from the NYSE stating that we were not in compliance with 802.01C of the NYSE’s Listed Company Manual, which requires that we maintain a minimum average closing price of at least \$1.00 per share during a consecutive 30 trading-day period (the “\$1.00 Price Standard”). As of April 17, 2020, the average closing price of our ADSs was less than \$1.00 per share over a consecutive 30 trading-day period. While we intend to regain compliance with the \$1.00 Price Standard by the end of the six-month cure period, there is no assurance we will be able to accomplish this. Regaining compliance with the \$1.00 Price Standard may include revising the ratio of our ADSs to ordinary shares. Pursuant to the terms of our Depositary Agreement, such a change would not require approval of our ADS holders.

On August 23, 2019, we received a notice from the NYSE stating that we were not in compliance with Section 802.01B of the NYSE’s Listed Company Manual due to the fact that our average global market capitalization over a consecutive 30 trading-day period was less than \$50 million and, at the same time, our shareholders’ equity was less than \$50 million (the “\$50 Million Market Capitalization Standard”). Our ADSs are permitted to continue to trade on the NYSE under the symbol “VJET”, but will have an added designation of “.BC-FC” to indicate the status of the non-compliance with continued listing standards.

We submitted a compliance plan to the NYSE on November 19, 2019 disclosing our plans to regain compliance with the \$50 Million Market Capitalization Standard by February 23, 2021. While the NYSE has accepted our compliance plan on January 24, 2020, we are subject to periodic review by the NYSE on a quarterly basis to provide an

[Table of Contents](#)

update of the current quarter's progress versus the plan submitted. If we are not in compliance with the \$50 Million Market Capitalization Standard by the end of the plan period, or if we do not make progress consistent with the plan during the plan period, the NYSE may initiate delisting proceedings and our ADSs may be delisted. While we intend to regain compliance with the \$50 Million Market Capitalization Standard by the end of the cure period, there is no assurance we will be able to accomplish this.

Because the SEC declared effective on April 21, 2020 a COVID-19-triggered NYSE proposal to toll compliance with NYSE's \$50 Million Market Capitalization Standard and \$1.00 Price Standard through June 30, 2020, the Company's cure period for both the \$50 Million Market Capitalization Standard and the \$1.00 Price Standard will recommence on July 1, 2020.

In addition, under Section 802.01B of the NYSE's Listed Company Manual, if our average global market capitalization over a consecutive 30 trading-day period is less than \$15 million (the "\$15 Million Market Capitalization Standard"), the NYSE will promptly initiate suspension and delisting procedures; we will not have any opportunity to regain compliance and our ADSs will be delisted. In light of market-wide declines caused by the COVID-19 (as defined below) pandemic, on March 20, 2020, the SEC granted the NYSE's proposed suspension of the enforcement of the \$15 Million Market Capitalization Standard until June 30, 2020. However, there is no assurance that the SEC will extend the suspension period beyond June 30, 2020 even if the market-wide declines continue. Accordingly, if we are below the \$15 Million Market Capitalization Standard after June 30, 2020 and the SEC has not suspended application of the rule, the NYSE will commence suspension and delisting procedures in respect of our ADSs.

A delisting of our ADSs could negatively impact us by, among other things, reducing the liquidity and market price of our ADSs and reducing the number of investors willing to hold or acquire our ADSs. A suspension or delisting could also adversely affect our relationships with our business partners and suppliers and customers' and potential customers' decisions to purchase our products and services, and would have a material, adverse impact on our business, operating results and financial condition. In addition, a suspension or delisting would impair our ability to raise additional capital through equity or debt financing. Moreover, delisting from the NYSE might negatively impact our reputation and, as a consequence, our business.

Should the delisting occur and we are unable to list on another public exchange our ADSs could be traded on the over-the-counter bulletin board, or in the so-called "pink sheets." In the event of such trading, it is highly likely that there would be: significantly less liquidity in the trading of our ADSs; decreases in institutional and other investor demand for our ADSs, coverage by securities analysts, market making activity and information available concerning trading prices and volume; and fewer broker-dealers willing to execute trades in our ADSs. The occurrence of any of these events could result in a further decline in the market price of our ADSs.

We have incurred losses to date and anticipate continuing to incur losses in the future, and there are material uncertainties which cast significant doubt regarding our ability to continue as a going concern.

Our consolidated financial statements as of and for the year ended December 31, 2019 have been prepared on the basis that we will continue as a going concern, which contemplates the realization of assets and satisfaction of liabilities in the normal course of business. We have incurred significant losses since our IPO and we expect that we will continue to incur losses as we aim to successfully execute our business plan and will be dependent on additional public or private financings, collaborations or licensing arrangements with strategic partners, or additional credit lines or other debt financing sources to fund continuing operations. Based on our cash balances and recurring losses since inception, there are material uncertainties that may cast significant doubt upon our ability to continue as a going concern.

We expect that we will continue to incur losses and negative cash flows from operations for at least the next 12 months following the issuance of the financial statements. As of December 31, 2019, we had an accumulated deficit of € 60.4 million and had cash and cash equivalents, short-term financial assets and restricted cash of total € 11.8 million. We have significant outstanding debt and contractual obligations related to interest payments and leases. As of December 31, 2019, our debt totaled € 17.5 million, of which € 11.3 million is classified as current. Our debt service obligations over the next twelve months are significant, including € 1.0 million of anticipated interest payments. Furthermore, our debt agreement with the European Investment Bank (the "EIB") contains financial covenants, the breach of which could trigger the acceleration of our loan repayment obligations, which would put us at risk of default. In addition, as of December 31, 2019, we were in non-compliance with the financial covenants related to loan agreements with

[Table of Contents](#)

Kreissparkasse Augsburg, Germany and consequently pledged € 2.0 million in favor of Kreissparkasse. The circumstance that those € 2.0 million have been pledged and therefore are restricted since then, has been considered within management's assessment of going concern.

As of December 31, 2019, we were in breach of the Total Net Financial Debt to EBITDA financial covenant under the Finance Contract with the EIB, which requires that we maintain certain minimum ratios. In March 2020, we received a waiver for the covenant breaches in 2019 and a grace period ending March 31, 2021, during which (i) voxeljet can rectify such breaches and (ii) the EIB shall not demand immediate repayment. In return, in March 2020 we registered a first rank land charge amounting to € 10.0 million on our land and facility located in Friedberg (Germany) Paul-Lenz-Straße, 1a as collateral in favor of the EIB.

We expect to incur additional costs and expenses related to the continued development and expansion of our business, including the maintenance of operation of our manufacturing facilities, contract manufacturing and research and development operations. There can be no assurance that we will ever achieve or sustain profitability on a quarterly or annual basis.

Our operating plans for 2020 contemplate a significant reduction in our net operating cash outflows as compared to the year ended December 31, 2019 resulting from (i) revenue growth from sales of existing and new products with positive gross margins, (ii) reduced operating expenses through the restructuring of our subsidiary voxeljet UK as well as the initiated restructuring of the German operation, which will be completed within fiscal year 2020. In addition, we may need to obtain additional funding from equity or debt financings, which may require us to agree to burdensome covenants, grant further security interests in our assets, enter into collaboration and licensing arrangements that require us to relinquish commercial rights, or grant licenses on terms that are not favorable. No assurance can be given at this time as to whether we will be able to achieve our expense reduction or fundraising objectives, regardless of the terms. If we are unable to raise additional financing, or if other expected sources of funding are delayed or not received, our ability to continue as a going concern would be jeopardized and we may be forced to delay, scale back or eliminate some of our general and administrative, research and development, or production activities or other operations and reduce investment in new product and commercial development efforts in an effort to provide sufficient funds to continue our operations. If any of these events occurs, our ability to achieve our development and commercialization goals would be adversely affected. In addition, if we are unable to continue as a going concern, we may be unable to meet our obligations under our existing debt facilities, which could result in an acceleration of our obligation to repay all amounts outstanding under those facilities, and we may be forced to liquidate our assets. In such a scenario, the value we receive for our assets in liquidation or dissolution could be significantly lower than the value reflected in our financial statements. Please also refer to risk factor "We face risks related to health epidemics and other widespread outbreaks of contagious disease, such as coronavirus, which could significantly disrupt our operations and impact our operating results and/or cash flows."

Our consolidated financial statements assume the Company is a going concern and therefore do not include any adjustments that might result from the outcome of this uncertainty, which could have a material adverse effect on our financial condition and cause investors to suffer the loss of all or a substantial portion of their investment.

Matters relating to or arising from our Audit Committee investigation, including potential regulatory investigations and proceedings, litigation matters, and additional expenses, may adversely affect our business and results of operations.

As previously disclosed in our public filings with the SEC, the Audit Committee completed an internal investigation (the "Audit Committee Investigation"). The Company has self-reported to the Enforcement Division of the SEC on these matters and will fully cooperate in any review by the SEC, although we are unable at this time to predict what action, if any, it may take.

The Audit Committee Investigation concluded in April 2020. The Audit Committee did not find fraud or intentional misconduct by the Company's management or accounting personnel. However, the Audit Committee did note certain weaknesses and a degree of informality with respect to certain processes pertaining to aspects of the review and tracking of financial reporting and disclosure. The Audit Committee proposed certain recommendations, including implementing additional training with respect to the Company's reporting and auditing obligations and requirements and developing and documenting an enhanced risk assessment process and internal

controls system in corresponding areas. For more information on the Audit Committee Investigation, see “Item 5. Operating and Financial Review and Prospects—A. Audit Committee Investigation.”

We may devote significant time and attention, and incur significant expenses, in connection with remediation of the deficiencies in our risk management and controls identified by the Audit Committee Investigation. For more information on our material weaknesses, see “—Material weaknesses in our internal control over financial reporting have been identified, and if we fail to implement and maintain effective internal control over financial reporting, we may be unable to accurately report our results of operations, meet our reporting obligations or prevent fraud.” and “Item 15. Controls and Procedures.”

Any resulting SEC actions in connection with the Audit Committee Investigation cannot be predicted. If the SEC commences an investigative process, and/or initiates an enforcement proceeding, we could be required to pay civil penalties, which could be substantial, and/or be subject to other remedies. We can provide no assurances as to the outcome of any governmental investigation.

We have incurred, and will continue to incur, significant expenses related to legal and other professional services in connection with the Audit Committee Investigation, which may continue to adversely affect our business and financial condition. In addition, the outcome of any regulatory proceedings, litigation or government enforcement actions that may result from these matters is difficult to predict, and the cost to defend, settle, or otherwise resolve these matters may be significant. Regulatory agencies or authorities, or other parties in these matters may seek very large or indeterminate amounts. An unfavorable resolution of litigations, proceedings or actions could have a material adverse effect on our business, financial condition, and results of operations and cash flows and also could result in a significant burden on management time and resources. Any future investigations or additional lawsuits may also adversely affect our business, financial condition, results of operations, and cash flows.

Our indebtedness could adversely affect our financial condition.

We have a total debt of € 17.5 million outstanding as of December 31, 2019 out of which € 10.0 million is borrowed from the EIB. We are obliged to pay a Performance Participation Interest (“PPI”) to EIB based on the market price of our shares at the maturity of the Warrant Agreement. Payment of PPI to EIB may adversely affect our financial condition and have a significant negative impact on our cash flows. We have breached our Total Net Financial Debt to EBITDA ratio financial covenant under the Finance Contract with the EIB, as of December 31, 2019. However, in March 2020, we received a waiver for the covenant as of June 30, 2019 and December 31, 2019 and a grace period, ending March 31, 2021, within which the EIB cannot demand immediate repayment and we can rectify the breach. In return, we registered a first rank land charge on our land and facility located in Friedberg (Germany) Paul-Lenz-Straße, 1a as collateral in favor of the EIB in March 2020. While we have obtained a waiver and a grace period of our financial covenant breaches in 2019, our ability to meet the financial covenants or requirements in our debt arrangements going forward may be affected by events beyond our control, and we cannot assure you that we will satisfy such covenants and requirements. A breach of these covenants or our inability to comply with the restrictions could result in an event of default under our debt arrangements which, in turn, could result in an event of default under the terms of our other indebtedness. If this were to happen, we cannot assure you that our assets would be sufficient to repay in full the payments due under those arrangements or our other indebtedness or that we could find alternative financing to replace that indebtedness.

Our revenues and operating results may fluctuate.

Our revenues and operating results may fluctuate from quarter-to-quarter and year-to-year and are likely to continue to vary due to a number of factors, many of which are not within our control. A significant portion of our 3D printer orders are typically received during the second and fourth quarters of the fiscal year as a result of the timing of capital expenditures of our customers. Our 3D printers typically are shipped between three and nine months after an order is received. Thus, revenues and operating results for any future period are not predictable with any significant degree of certainty. We also typically experience weaker demand for our 3D printers in the first and third quarters. For these reasons, comparing our operating results on a period-to-period basis may not be meaningful. Until our business grows more significantly, the timing of individual printer sales, because of the cost of our largest printers, can have

[Table of Contents](#)

meaningful effects on our quarterly results. You should not rely on our past results as an indication of our future performance. Please also refer to risk factor “We face risks related to health epidemics and other widespread outbreaks of contagious disease, such as coronavirus, which could significantly disrupt our operations and impact our operating results and/or cash flows.”.

Fluctuations in our operating results and financial condition may occur due to a number of factors, including, but not limited to, those listed below and those identified throughout this annual report:

- the degree of market acceptance of our products;
- the mix of machines and products that we sell during any period;
- our long sales cycle including our ability to adapt production to demand;
- the entry of new competitors into our market;
- generally weaker demand for 3D printers in the first and third quarters;
- weaker demand for products from our Services segment due to the slow-down of the automotive industry in Europe
- development of new competitive systems or processes by others;
- changes in our pricing policies or those of our competitors, including our responses to price competition, impacting our ability to realize work in progress at expected gross margins;
- delays between our expenditures to develop and market new or enhanced 3D printers and products and the generation of sales from those products;
- changes in the amount we spend in our marketing and other efforts;
- delays between our expenditures to develop, acquire or license new technologies and processes, and the generation of sales related thereto;
- changes in the cost of satisfying our warranty obligations and servicing our installed base of products;
- our level of research and development activities and their associated costs and rates of success;
- changes in the size and complexity of our organization, including our operations outside of Europe;
- increased expenses in connection with improving our internal control over financial reporting;
- interruptions to or other problems with our website and interactive user interface, information technology systems, manufacturing processes or other operations;
- general economic and industry conditions that affect end-user demand and end-user levels of product design and manufacturing;
- changes in accounting rules and tax laws; and
- changes in interest rates and currency exchange rates that affect returns on our cash balances and short-term investments.

Our margins and EBIT may fluctuate.

Margins and EBIT in both our Systems and Services segments may fluctuate from quarter-to-quarter and year-to-year and are likely to continue to vary due to a number of factors, many of which are beyond our control, including fluctuations in foreign exchange rates, increased competition and increased expenses. To pursue our growth strategy, we have expanded by establishing operations in different countries. While the subsidiary in China is in the start-up phase, we may not be able to achieve our desired gross margin and EBIT targets for this subsidiary, which may lead to a weaker margin and EBIT contribution from these subsidiaries to us. At our German operation, gross margin and EBIT could also fluctuate significantly, for instance due to changes in demand and other economic factors.

We need to raise additional capital from time to time in order to meet our growth strategy as well as to support the continuation of our operation and may be unable to do so on attractive terms, or at all.

We intend to continue to make investments to support the growth of our business and may require additional funds to respond to business challenges, including the need to implement our growth strategy, increase market share in our current markets or expand into other markets, or broaden our technology, intellectual property or service capabilities. Accordingly, we require additional investments of capital from time to time, and our existing sources of cash and any funds generated from operations may not provide us with sufficient capital. For various reasons, including material uncertainties that cast significant doubt about our ability to continue as a going concern, any noncompliance with existing or future lending arrangements, additional financing, including raising capital through government or other grant funding, or issuing equity and lease financing for sale and leaseback transactions, may not be available when needed, or may not be available on terms favorable to us. If we fail to obtain adequate capital on a timely basis or if capital cannot be obtained on terms satisfactory to us, we may not be able to achieve our planned rate of growth, which will adversely affect our results of operations.

Material weaknesses in our internal control over financial reporting have been identified, and if we fail to implement and maintain effective internal control over financial reporting, we may be unable to accurately report our results of operations, meet our reporting obligations or prevent fraud.

The Sarbanes-Oxley Act requires, among other things, that we maintain effective internal control over financial reporting and disclosure controls and procedures. As of December 31, 2019, we did not maintain an effective control environment attributable to certain identified material weaknesses. We describe these material weaknesses in Item 15. Controls and Procedures. A material weakness is a deficiency, or combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of the entity's annual or interim financial statements will not be prevented or detected and corrected on a timely basis.

Management has disclosed material weaknesses in each of its Forms 20-F over a period of seven years, from fiscal year 2013 through the current fiscal year 2019.

To remediate the material weaknesses, we will continue to develop and implement our remediation plan as described in "Item 15. Controls and Procedures". Our remediation efforts are not yet complete. There can be no assurance as to when the remediation plan will be fully implemented or whether the remediation efforts will be successful.

Until our remediation plans are fully implemented, our management will continue to devote time and attention to these efforts. The existence of these or other material weaknesses in our internal control over financial reporting could require us to restate our financial statements, cause us to fail to meet our reporting obligations, and cause stockholders to lose confidence in our reported financial information, all of which could materially and adversely affect our business and stock price.

Our strategic restructurings may not achieve intended benefits and the related restructuring cost could have a material adverse effect on our business and results of operations.

In the third quarter of 2019, we started a restructuring for our subsidiary voxeljet UK, which includes the shut down of the service center in the UK accompanied by a reduction in headcount and disposal of certain assets.

[Table of Contents](#)

Furthermore, we initiated a voluntary reduction in workforce program for our German operations in the first quarter of 2020, which was announced in November 2019. As required under German law, we consulted and negotiated in December 2019 with our German employees' workers' council in connection with the restructuring plan and began rolling out a voluntary termination program, which offers employees certain compensation for leaving the Company through a voluntary termination agreement. On April 16, 2020, the voluntary program expired with the result that the desired reduction in headcount has been completely achieved through the voluntary program, and therefore the cost saving targets have been fully implemented.

The Company's success is dependent on the skills of our key personnel. Our restructuring plans involving workforce reduction may lead to an unintended loss of experienced employees or know-how. The loss of any member of our key personnel and actual or threatened work slowdowns or stoppages could lead to operational delays or cost increases. If these incidents occur or if we are unable to attract, retain and maintain productive relations with our employees and key professionals, our operating results and financial condition may be adversely affected. There is also a risk that our restructuring plan will not capture all of the intended benefits or may not result in the expected cost savings. Further, the restructuring may yield unintended consequences such as attrition beyond our targeted workforce reduction. These risks may impact our business, financial condition, results of operations and cash flows.

We may not be able to introduce new 3D printers and related print materials acceptable to the market or to improve the technology and print materials used in our current 3D printers to meet customer demands.

Our revenues are derived from the sale of new or used and refurbished 3D printers and from the sale of products manufactured using additive manufacturing. Our market is subject to innovation and technological change. A variety of technologies compete against one another in our market, which is, in part, driven by technological advances and end-user requirements and preferences, as well as the emergence of new standards and practices. Our ability to compete in the industrial additive manufacturing market depends, in large part, on our success in enhancing and developing new 3D printers, enhancing and adding to our technology and developing and qualifying new materials in which we can print. Recently we developed the VX1300 X, which is characterized by a very fast layer time. Currently we are developing the VX1000 HSS which will upscale the HSS technology to one of our larger scale platforms. Presently the HSS technology is available on the VX200 HSS system. We believe that to remain competitive we must continuously enhance and expand the functionality and features of our products and technologies. However, we may not be able to:

- enhance our existing products and technologies;
- continue to leverage advances in industrial printhead technology;
- develop new products and technologies that address the increasingly sophisticated and varied needs of prospective end-users, particularly with respect to the physical properties of print materials and other consumables;
- respond to technological advances and emerging industry standards and practices on a cost-effective and timely basis;
- develop products that are cost effective or that otherwise gain market acceptance;
- adequately protect our intellectual property as we develop new products and technologies; or
- ensure the availability of cash resources to fund research and development.

Even if we successfully enhance our existing 3D printers or create new 3D printers, it is likely that new 3D printers and technologies that we develop will eventually supplant our existing 3D printers or that our competitors will create 3D printers that will replace our 3D printers. As a result, any of our products may be rendered obsolete or uneconomical by our or others' technological advances.

The long sales cycle for our products makes the timing of our revenues difficult to predict.

Generally, our 3D printers have a long sales cycle. Because our 3D printers are complex and typically involve significant capital investments by prospective purchasers, we and our sales agents generally need to invest a significant

amount of time educating prospective purchasers about the benefits of our products. As a result, before purchasing our products, potential purchasers may spend a substantial amount of time performing internal assessments before making a purchase. This may cause us to devote significant effort in advance of a potential sale without any guarantee of receiving any related revenues. Delays in sales could cause significant variability in our revenues and operating results for any particular period. In addition to that, delays in sales could lead to an increase in work in progress resulting in an allowance for slow-moving inventories.

Demand for our products may not increase adequately.

The marketplace for industrial manufacturing is dominated by conventional manufacturing methods that do not involve additive manufacturing technology. We may not be able to develop effective strategies to raise awareness among potential customers of the benefits of our additive manufacturing technology. If additive manufacturing technology does not gain market acceptance as an alternative for industrial manufacturing, or if the marketplace adopts additive manufacturing based on a technology other than our technology, we may not be able to increase or sustain the level of sales of our products and machines and our results of operations would be adversely affected as a result. If we are not able to manage the conversion from work in progress to sales, it could lead to an undesirable increase of inventory resulting in allowance for slow-moving inventory.

We may not be able to significantly increase the number of materials for use in our 3D printers quickly enough to meet our business plan, and, if we are successful, we may attract more competitors into our markets, some of which may be much larger than we are. Furthermore, we may not be able to develop our 3D printers to serve in a mass production environment.

Our business plan is dependent in part upon our ability to steadily increase the number of qualified materials in which our 3D printers can print, since this will increase our addressable market. However, qualifying new materials is a complicated engineering task, and there is no way to predict whether, or when, any given material will be qualified. If we cannot hire a sufficient number of skilled people to work on qualifying new materials for printing or if we lack the resources necessary to create a steady flow of new materials, we will not be able to meet our business goals and a competitor may emerge that is better at qualifying new materials, either of which would have an adverse effect on our business results.

If, however, we succeed in qualifying a growing number of materials for use in our 3D printers as well as developing our 3D printers to serve in a mass production environment, that should increase our addressable market, both as to customers and products for customers. However, as we create a larger addressable market, our market may become more attractive to other 3D printing companies or large companies that are not 3D printing companies but which may see an economic opportunity in the markets we have created. Similarly, if our focus on selling large 3D printers and 3D printed products to industrial companies proves successful, an increase in the number of competitors in that particular market is likely to adversely affect our business and financial results.

We are highly dependent upon sales to certain industries.

Our revenues of machines and products are relatively concentrated in companies in the automotive, foundry, aerospace and art and architecture industries and those industries' respective suppliers. To the extent any of these industries experiences a downturn and we are unable to penetrate and expand into other industries, our results of operations may be adversely affected. Additionally, if any of these industries or their respective suppliers or other providers of manufacturing services develop new technologies or alternatives to manufacture the products that are currently manufactured using our 3D printers, it may adversely affect our results of operations. Recently, we have seen a decrease in demand from the automotive industry in Europe, which has had a negative impact on our revenues.

If our relationships with suppliers, especially with limited source suppliers of components of and consumables for our products, were to terminate or our manufacturing arrangements were to be disrupted, our business could be adversely affected.

We purchase components and certain sub-assemblies for our systems and consumables that are used in our print materials from third-party suppliers. While there are several potential suppliers of most of the components and sub-assemblies for our systems, and for most of the consumables for our print materials, we currently choose to use only

[Table of Contents](#)

a limited number of suppliers for several of these components and materials. Our reliance on a limited number of vendors involves a number of risks, including:

- potential shortages of some key components;
- product performance shortfalls, if traceable to particular product components, since the supplier of the faulty component cannot readily be replaced;
- discontinuation of a product on which we rely;
- potential insolvency of these vendors; and
- reduced control over delivery schedules, manufacturing capabilities, quality and costs.

In addition, we require any new supplier to become “qualified” pursuant to our internal procedures. The qualification process involves evaluations of varying durations, which may cause production delays if we were required to qualify a new supplier unexpectedly. We generally assemble our systems based on our internal forecasts and the availability of consumables, assemblies, components and finished goods that are supplied to us by third parties, which are subject to various lead times. If certain suppliers were to decide to discontinue production of an assembly, component or consumable that we use, the unanticipated change in the availability of supplies, or unanticipated supply limitations, could cause delays in or loss of sales, increased production or related costs and, consequently, reduced margins, and damage to our reputation. If we are unable to find a suitable supplier for a particular component, consumable or compound, we could be required to modify our existing products to accommodate substitute components, consumables or compounds. In addition, because we use a limited number of suppliers, increases in the prices charged by our suppliers may have an adverse effect on our results of operations, as we may be unable to find a supplier who can supply us at a lower price. As a result, the loss of a limited source supplier could adversely affect our relationships with our customers and our results of operations and financial condition.

We may not be able to manage the expansion of our operations effectively in order to achieve our projected levels of growth.

We have expanded our operations significantly in recent periods, including both our German and U.S. operations, and our business plan calls for further expansion over the next several years, including Asia and North America. After the restructuring of our UK operation, we are more focused in addressing the automotive and aerospace industry. Our expansion in Asia is proceeding through our subsidiaries in India and China. The legal, market and cultural environment in both India and China represent challenges for our management. We anticipate that further development of our infrastructure and an increase in the number of our employees will be required to achieve our planned broadening of our product offerings and client base, improvements in our 3D printers and materials used in our 3D printers, and our planned international growth. In particular, we must increase our marketing and services staff to support new marketing and service activities and to meet the needs of both new and existing customers. Our ability to successfully increase our marketing efforts is not guaranteed, and if we are not able to successfully increase our marketing efforts, we may not be able to grow our business as intended. Our future success will depend in part upon the ability of our management to manage our growth effectively. If our management is unsuccessful in meeting these challenges, we may not be able to achieve our anticipated level of growth, which would adversely affect our results of operations.

Our operations could suffer if we are unable to attract and retain key management or other skilled employees.

Our success depends upon the continued service and performance of our senior management and other key personnel. Our senior management team is critical to the management of our business and operations, as well as to the development of our strategy. The loss of the services of any members of our senior management team could delay or prevent the successful implementation of our growth strategy, or the commercialization of new applications for our 3D printers or other products, or could otherwise adversely affect our ability to manage our Company effectively and carry out our business plan. Members of our senior management team may resign at any time. High demand exists for senior management and other key personnel in the additive manufacturing industry, and there can be no assurance that we will be able to retain such personnel. We do not carry key-man insurance on any member of our senior management team.

Our growth and success will also depend on our ability to attract, retain and train additional highly-qualified scientific, technical, sales, managerial and finance personnel, including qualified personnel with experience and knowledge of IFRS. We have experienced and expect to continue to experience intense competition for qualified personnel. While we intend to continue to provide competitive compensation packages to attract and retain key personnel, some of our competitors for these employees have greater resources and more experience, making it difficult for us to compete successfully for key personnel. If we cannot attract and retain sufficiently qualified technical employees for our research and development and manufacturing operations, we may be unable to develop and commercialize new products or new applications for existing products. Furthermore, possible shortages of skilled personnel, including engineers, in the regions surrounding our European facilities as well as our facilities in China and India could require us to pay more to hire and retain skilled personnel, thereby increasing our costs.

Declines in the prices of our products and services, or in our volume of sales, together with our relatively inflexible cost structure, may adversely affect our financial results.

Our business is subject to price competition. Such price competition may adversely affect our ability to maintain the same degree of profitability, especially during periods of decreased demand. Decreased demand also adversely impacts the volume of our systems sales. If our business is not able to offset price reductions resulting from these pressures, or decreased volume of sales due to contractions in the market, by improved operating efficiencies and reduced expenditures, then our operating results will be adversely affected.

Certain of our operating costs are fixed and cannot readily be reduced, which diminishes the positive impact of our restructuring programs on our operating results. To the extent the market for our products slows, or the 3D printing market contracts, we may be faced with excess manufacturing capacity and excess related costs that cannot readily be reduced, which will adversely impact our results of operations.

Customers may decide to order parts rather than to purchase new or used and refurbished 3D printers. This may result in a significant loss of revenues in the Systems segment.

Our Systems segment revenues largely depend on our ability to sell new or used and refurbished 3D printers to customers. There may be various reasons why customers may choose to order parts from us rather than to purchase the full 3D printer equipment, such as increased convenience, lower maintenance costs, etc. If there is an increasing trend for our customers to place parts orders in lieu of equipment purchase orders and we are unable to reverse that trend, we may experience significant losses in revenues in the Systems segment, which in turn could adversely affect our business and financial results.

We need certain commercial success of the financed research and development project.

We entered into an investment loan commitment of a total of € 25.0 million with the EIB. This loan commitment is guaranteed by the European Union (or “EU”) under the European Fund for Strategic Investments and is limited to 50% of the total cost of a research and development project. The first loan tranche A of € 10.0 million was already disbursed, and further € 15.0 million disbursement of tranches B and C is dependent on achieving certain sales and EBITDA performance targets. However those sales and EBITDA targets have not been met and default has occurred, with an event of default delayed via waiver. We are currently in negotiations with the EIB over (i) an amendment to the Leverage Covenant under the Finance Contract with the EIB, the provision with which we are in non-compliance and (ii) the potential drawing down of tranche B, which may not be successful, and we cannot assure these negotiations will be successful. The scheduled repayment of any disbursed loan tranches including interest will depend on the success of the financed research and development project.

We face significant competition in many aspects of our business, which could cause our revenues and gross profit margins to decline. Competition could also cause us to reduce sales prices or to incur additional marketing or production costs, which could result in decreased revenue, increased costs and reduced margins.

We compete for customers with a wide variety of producers of equipment for models, prototypes, other 3D objects and end-use parts as well as producers of print materials and services for this equipment. Some of our existing and potential competitors are researching, designing, developing and marketing other types of competitive equipment, print materials and services. Many of these competitors have financial, marketing, manufacturing, distribution and other resources that are substantially greater than ours.

We also expect that future competition may arise from the development of allied or related techniques for equipment and print materials that are not encompassed by our patents, from the issuance of patents to other companies that may inhibit our ability to develop certain products, from our entry into new geographic markets and industries and from improvements to existing print materials and equipment technologies. In addition, a number of companies have announced beginning production of 3D printers, which will further enhance the competition we face.

We intend to continue to follow a strategy of continuing product development to enhance our position to the extent practicable. We cannot assure you that we will be able to maintain our current position in the field or continue to compete successfully against current and future sources of competition. If we do not keep pace with technological change and introduce new products, our revenues and demand for our products may decrease.

If we are not able to convert our work in progress into sales, it could lead to an undesirable increase of inventory and consequently to an allowance for slow-moving inventory.

Our operations outside of Germany subject us to various risks, and our failure to manage these risks could adversely affect our results of operations.

Our business is subject to certain risks associated with doing business globally. Our sales outside of Germany represented 82%, 75%, and 75% of our total sales in 2019, 2018, and 2017, respectively. We currently have subsidiaries in China, India, the UK and the United States. One of our growth strategies is to further pursue opportunities for our business in several areas around the world, both inside and outside of Germany and Europe, any or all of which could be adversely affected by the risks set forth below. Accordingly, we face significant operational risks as a result of doing business internationally, such as:

- fluctuations in foreign currency exchange rates;
- potentially longer sales and payment cycles;
- potentially greater difficulties in collecting accounts receivable;
- potentially adverse tax consequences;
- challenges in providing solutions across a significant distance, in different languages and among different cultures;
- different, complex and changing laws governing intellectual property rights, sometimes affording reduced protection of intellectual property rights in certain countries;
- difficulties in staffing and managing foreign operations, particularly in new geographic locations;
- restrictions imposed by local labor practices and laws on our business and operations;
- rapid changes in government, economic and political policies and conditions, political or civil unrest or instability, terrorism, epidemics or pandemics like coronavirus and other similar outbreaks or events;
- operating in countries with a higher incidence of corruption and fraudulent business practices;
- seasonal reductions in business activity in certain parts of the world, particularly during the summer months in Europe;
- costs and difficulties of customizing products for foreign countries;
- compliance with a wide variety of complex foreign laws, treaties and regulations;
- transportation delays;

[Table of Contents](#)

- tariffs, trade barriers and other regulatory or contractual limitations on our ability to sell or develop our products in certain foreign markets; and
- becoming subject to the laws, regulations and court systems of multiple jurisdictions.

Our failure to manage the market and operational risks associated with our international operations effectively could limit the future growth of our business and adversely affect our results of operations.

Our international operations pose currency risks, which may adversely affect our operating results and net income.

Our operating results may be affected by volatility in currency exchange rates and our ability to effectively manage our currency transaction risks. Currency exchange rate fluctuations have had an impact on our results because voxeljet AG provided intercompany loans to its subsidiaries in foreign currency. As we realize our strategy to expand internationally, our exposure to currency risks will increase. We do not manage our foreign currency exposure in a manner that would eliminate the effects of changes in foreign exchange rates. Therefore, changes in exchange rates between these foreign currencies and the Euro will affect our revenues, cost of goods sold, and operating margins, and could result in exchange losses in any given reporting period.

We incur currency transaction risks whenever we enter into either a purchase or a sale transaction using a different currency from the currency in which we report revenues. In such cases we may suffer an exchange loss because we do not currently engage in currency swaps or other currency hedging strategies to address this risk.

Given the volatility of exchange rates, we can give no assurance that we will be able to effectively manage our currency transaction risks or that any volatility in currency exchange rates will not have an adverse effect on our results of operations.

We may engage in future acquisitions that could disrupt our business, cause dilution to our shareholders and harm our financial condition and operating results.

While we currently have no specific plans to acquire any other businesses, we may, in the future, engage in joint ventures with or make acquisitions of, or investments in, companies that we believe have products or capabilities that are a strategic or commercial fit with our current business or otherwise offer opportunities for our Company. In connection with these acquisitions or investments, we may:

- issue ADSs or other forms of equity that would dilute our existing shareholders' percentage of ownership;
- incur debt and assume liabilities; and
- incur amortization expenses related to intangible assets or incur large and immediate write-offs.

We may not be able to complete future acquisitions on favorable terms, if at all. If we do complete an additional acquisition, we cannot assure you that it will ultimately strengthen our competitive position or that it will be viewed positively by customers, financial markets or investors. Furthermore, future acquisitions could pose numerous additional risks to our operations, including:

- problems integrating the purchased business, products or technologies;
- challenges in achieving strategic objectives, cost savings and other anticipated benefits;
- increases to our expenses;
- the assumption of significant liabilities that exceed the limitations of any applicable indemnification provisions or the financial resources of any indemnifying party;
- inability to maintain relationships with key customers, vendors and other business partners of the acquired businesses;

- diversion of management’s attention from their day-to-day responsibilities;
- difficulty in maintaining controls, procedures and policies during the transition and integration;
- entrance into marketplaces where we have no or limited prior experience and where competitors have stronger marketplace positions; and
- potential loss of key employees, particularly those of the acquired entity.

Global economic, political and social conditions have adversely impacted our sales and may continue to do so.

The recent declines in the global economy, difficulties in the financial services sector and credit markets, continuing geopolitical uncertainties and other macroeconomic factors all affect spending behavior of potential end-users of our products. The economic uncertainty in Europe, the United States, India, China and other countries may cause end-users to further delay or reduce technology purchases. In particular, a substantial portion of our sales are made to customers in countries in Europe, which has experienced a significant economic crisis beginning in 2007.

For example, the U.K. formally exited the EU on January 31, 2020 and has entered a transition period to negotiate future relation terms with the EU. The lack of clarity about Brexit and future U.K. laws and regulations creates uncertainty for us, as the outcome of these negotiations may affect our business and operations. For example, the imposition of tariffs following the Brexit may have a material adverse effect on our financial position or results of operations. Additionally, there also is a risk that other countries may decide to leave the EU. The uncertainty surrounding Brexit not only potentially affects our business in the U.K. and the EU, but may have a material adverse effect on global economic conditions and the stability of global financial markets, which in turn could have a material adverse effect on our business, financial condition, and results of operations. In extreme cases, we could experience interruptions in production due to the processing of customs formalities or reduced customer spending in the wake of weaker economic performance. If global economic conditions remain volatile for a prolonged period or if European economies experience further disruptions, our results of operations could be adversely affected.

We face risks related to health epidemics and other widespread outbreaks of contagious disease, such as coronavirus, which could significantly disrupt our operations and impact our operating results and/or cash flows.

We face various risks related to health epidemics, pandemics and similar outbreaks, including the global outbreak of a new strain of coronavirus (“COVID-19”). In recent months, the continued spread of COVID-19 has led to disruption and volatility in the global economy and capital markets, which increases the cost of capital and adversely impacts access to capital.

The continued spread of COVID-19 has and may continue to disrupt our supply chain. While we have been able to mitigate any significant disruption, any significant delay, or limit in the ability of customers to perform could impact investment performance and cause other unpredictable events. We currently anticipate customer payment delays for 3D printers sold in the fourth quarter 2019 which could negatively impact our results of operations, however we do not expect defaults. In addition, we expect adverse impacts from the COVID-19 pandemic, including decline in revenues for the Services segment and service and maintenance business of the Systems segment mainly during the second quarter of 2020. Also, we expect some delays in installation of 3D printers at customers’ facilities, which could lead to postponed revenue recognition for those transactions. Furthermore, if significant portions of our workforce are unable to work effectively, including because of illness, quarantines, government actions, facility closures, remote working or other restrictions in connection with the COVID-19 pandemic, our operations will likely be negatively impacted. Pursuant to government closure orders intended to contain or slow the spread of COVID-19, we may be required to close certain of our facilities in the regions voxeljet operates that perform work that is deemed non-essential. One or more additional facilities could become subject to similar orders, which could further disrupt our operations if the work performed at such facilities cannot be conducted remotely, potentially necessitating the furloughing of some of our employees or a permanent reduction in our workforce.

Our sales, installation and service of 3D printing machines in China and other countries have been and may continue to be disrupted and the future spread of COVID-19 has disrupted our commercial efforts in other countries. If the COVID-19 crisis continues for a prolonged duration, we or our customers may be unable to perform fully on our

contracts, which will likely result in increases in costs and reduction in revenue. These cost increases may not be fully recoverable or adequately covered by insurance. If we experience difficulty in generating sufficient cash flow to meet our obligations and sustain our operations, which raises material uncertainties that cast significant doubt about our ability to continue as a going concern, we may have difficulty accessing government and state aid.

Our operations in China through our subsidiary, voxeljet China Co. Ltd., have been and may continue to be adversely affected due to the delays in collection of receivables, loss of business and delays in production and fulfilling current or future orders. For example, the planned start of the production of the VX2000 at our Chinese subsidiary at the beginning of 2020 has been delayed due to COVID-19. We continue to work with our stakeholders (including customers, employees, suppliers and local communities) to address responsibly this global pandemic. The long-term effects of COVID-19 to the global economy and to us are difficult to assess or predict, and may include a further decline in the market prices of our ADSs, risks to employee health and safety, risks for the deployment of our products and services (including by limiting our customer support, among others effects resulting from government measures) and reduced sales in geographic locations impacted. Any prolonged restrictive measures put in place in order to control COVID-19 or other adverse public health development in any of our targeted markets may have a material and adverse effect on our business operations, financial position, results of operations and/or cash flows. These material uncertainties may also cast significant doubt upon our management's assumptions regarding our ability to continue as a going concern.

Failure to comply with the U.S. Foreign Corrupt Practices Act or other applicable anti-corruption legislation could result in fines, criminal penalties and an adverse effect on our business.

We operate in a number of countries throughout the world, including countries known to have a reputation for corruption. We are committed to doing business in accordance with applicable anti-corruption laws. We are subject, however, to the risk that our officers, directors, employees, agents and collaborators may take action determined to be in violation of such anti-corruption laws, including the U.S. Foreign Corrupt Practices Act of 1977, the U.K. Bribery Act 2010 and the European Union Anti-Corruption Act, as well as trade sanctions administered by the Office of Foreign Assets Control and the U.S. Department of Commerce. Any such violation could result in substantial fines, sanctions, civil and/or criminal penalties or curtailment of operations in certain jurisdictions, and might adversely affect our results of operations. In addition, actual or alleged violations could damage our reputation and ability to do business.

We rely on our information technology systems to manage numerous aspects of our business and customer and supplier relationships, and a disruption of these systems could adversely affect our results of operations.

We rely on our information technology, or IT, systems to manage numerous aspects of our business and provide analytical information to management. Our IT systems allow us to efficiently purchase products from our suppliers, provide procurement and logistic services, ship products to our customers on a timely basis, maintain cost-effective operations and provide service to our customers. Our IT systems are an essential component of our business and growth strategies, and a disruption to our IT systems could significantly limit our ability to manage and operate our business efficiently. In 2019, we had effective general information technology general controls (GITCs) over our Enterprise Resource Planning system that supports the Company's financial reporting processes. We are required to further automate our processes and reduce the dependence on manual controls, specifically our process of Consolidation of Financial Statements. In late 2019, we launched a project to implement an automated consolidation process using our existing Enterprise Resource Planning system. Although we assume this will not be the case, we could fail with the technical realization. Further, our computer systems are subject to damage and interruption from power outages, computer and telecommunications failures, computer viruses, cyber-attack or other security breaches, catastrophic events such as fires, floods, earthquakes, tornadoes, hurricanes, acts of war or terrorism, and usage errors by our employees. If our computer systems are damaged or cease to function properly, or if we do not replace or upgrade certain systems, we may incur substantial costs to repair or replace them and may experience an interruption of our normal business activities or loss of critical data. Any such disruption could adversely affect our reputation, brand and financial condition.

Regulation in the areas of privacy, data protection and information security could increase our costs and affect or limit our business opportunities and how we collect and/or use personal information.

As privacy, data protection and information security laws, including data localization laws, are interpreted and applied, compliance costs may increase, particularly in the context of ensuring that adequate data protection and data

[Table of Contents](#)

transfer mechanisms are in place. In recent years, there has been increasing regulatory enforcement and litigation activity in the areas of privacy, data protection and information security in the U.S., Germany, and in various other countries in which we operate.

In addition, state and federal legislators and/or regulators in the U.S., Germany, and other countries in which we operate are increasingly adopting or revising privacy, data protection and information security laws that potentially could have significant impact on our current and planned privacy, data protection and information security-related practices, our collection, use, sharing, retention and safeguarding of consumer and/or employee information, and some of our current or planned business activities. New legislation or regulation could increase our costs of compliance and business operations and could reduce revenues from certain business initiatives. Moreover, the application of existing or new laws to existing technology and practices can be uncertain and may lead to additional compliance risk and cost.

Our European activities are subject to the European Union General Data Protection Regulation, or GDPR, which has created additional compliance requirements for us. GDPR broadens the scope of personal privacy laws to protect the rights of EU citizens and requires organizations to report on data breaches within 72 hours and be bound by stringent rules for obtaining the consent of individuals on how their data can be used. GDPR became enforceable on May 25, 2018, and non-compliance exposes entities such as our company to significant fines or other regulatory claims.

Compliance with current or future privacy, data protection and information security laws relating to consumer and/or employee data could result in higher compliance and technology costs and could restrict our ability to provide certain products and services, which could materially and adversely affect our profitability. Our failure to comply with privacy, data protection and information security laws could result in potentially significant regulatory and/or governmental investigations and/or actions, litigation, fines, sanctions, ongoing regulatory monitoring, customer attrition, decreases in the use or acceptance of our products and services and damage to our reputation and our brand.

Defects in new products or in enhancements to our existing products that give rise to product returns or warranty or other claims could result in material expenses, diversion of management time and attention, and damage to our reputation.

Our 3D printing systems may contain undetected defects or errors when first introduced or as enhancements are released that, despite testing, are not discovered until after a system has been used. This could result in delayed market acceptance of those systems or claims from sales agents, end-users or others, which may result in litigation, increased end-user service and support costs and warranty claims, damage to our reputation and business, or significant costs to correct the defect or error. We may from time to time become subject to warranty or product liability claims related to product quality issues that could lead us to incur significant expenses.

We could face liability if our 3D printers are used by our customers to print dangerous objects.

Customers may use our 3D printers to print parts that could be used in a harmful way or could otherwise be dangerous. For example, there have been news reports that 3D printers were used to print guns or other weapons. We have little, if any, control over what objects our customers print using our 3D printers, and it may be difficult, if not impossible, for us to monitor and prevent customers from printing weapons with our 3D printers. While we have never printed weapons in any of our service centers, there can be no assurance that we will not be held liable if someone were injured or killed by a weapon printed by a customer using one of our 3D printers.

A loss of a significant number of our sales agents would impair our ability to sell our products and services and could reduce our revenues and adversely impact our operating results.

We expect a significant portion of our sales of our products to be made with the assistance of our network of sales agents. We rely heavily on these sales agents to facilitate sales of our products to end-users in their respective geographic regions. Furthermore, we rely on sales agents to service our products. These sales agents are generally not precluded from selling our competitors' products in addition to ours. In addition, they may not be effective in selling our products or servicing our end-users. Further, if a significant number of these sales agents were to terminate their relationships with us or otherwise fail or refuse to facilitate sales of our products, we may not be able to find replacements that are as qualified or as successful. If these sales agents do not perform as anticipated or if we are unable

to find qualified and successful replacements, our sales will suffer, which would have a material adverse effect on our revenues and operating results.

Workplace accidents or environmental damage could result in substantial remedial obligations and damage to our reputation.

Accidents or other incidents that occur at our facilities or involve our personnel or operations could result in claims for damages against us. In addition, in the event we are found to be financially responsible, as a result of environmental or other laws or by court order, for environmental damages alleged to have been caused by us or occurring on our premises, we could be required to pay substantial monetary damages or undertake expensive remedial obligations. The amount of any costs, including fines or damages payments that we might incur under such circumstances could substantially exceed any insurance we have to cover such losses. Any of these events, alone or in combination, could have a material adverse effect on our business, financial condition and results of operations and could adversely affect our reputation.

Our operations are subject to environmental laws and other government regulations which could result in liabilities in the future.

We are subject to domestic and foreign environmental laws and regulations governing our operations, including, but not limited to, emissions into the air and water and the use, handling, disposal and remediation of hazardous substances. A certain risk of environmental liability is inherent in our production activities. Under certain environmental laws, we could be held solely or jointly and severally responsible, regardless of fault, for the remediation of any hazardous substance contamination at our facilities and at facilities where our products are used and the respective consequences arising out of human exposure to such substances or other environmental damage. We may not have been and may not be at all times in complete compliance with environmental laws, regulations and permits, and the nature of our operations exposes us to the risk of liabilities or claims with respect to environmental and worker health and safety matters. If we violate or fail to comply with environmental laws, regulations and permits, we could be subject to penalties, fines, restrictions on operations or other sanctions, and our operations could be interrupted.

The cost of complying with current and future environmental, health and safety laws applicable to our operations, or the liabilities arising from past releases of, or exposure to, hazardous substances, may result in future expenditures. Any of these developments, alone or in combination, could have a material adverse effect on our business, financial condition and results of operations.

We may not have adequate insurance for potential liabilities, including liabilities arising from litigation.

In the ordinary course of business, we have been, and in the future may be, subject to various product and non-product related claims, lawsuits and administrative proceedings seeking damages or other remedies arising out of our commercial operations, including litigation related to defects in our products. We maintain insurance to cover our potential exposure for most claims and losses. However, our insurance coverage is subject to various exclusions, self-retentions and deductibles, may be inadequate or unavailable to protect us fully, and may be cancelled or otherwise terminated by the insurer. Furthermore, we face the following additional risks related to our insurance coverage:

- we may not be able to continue to obtain insurance coverage on commercially reasonable terms, or at all;
- we may be faced with types of liabilities that are not covered under our insurance policies, such as environmental contamination or terrorist attacks, and that exceed any amounts that we may have reserved for such liabilities;
- the amount of any liabilities that we may face may exceed our policy limits; and
- we may incur losses resulting from the interruption of our business that may not be fully covered under our insurance policies.

Even a partially uninsured claim of significant size, if successful, could have a material adverse effect on our business, financial condition, results of operations and liquidity. However, even if we successfully defend ourselves against any such claim, we could be forced to spend a substantial amount of money in litigation expenses, our

management could be required to spend valuable time defending these claims and our reputation could suffer, any of which could adversely affect our results of operations.

If our manufacturing facility or any of our on-demand parts service centers are disrupted, sales of our products may be affected, which could result in loss of revenues and unforeseen costs.

We manufacture our machines at our facility in Germany. We currently operate on-demand parts service centers located in Germany, the United States, and China and plan to operate in other locations in the future. In the third quarter of 2019, we decided to consolidate 3D printing to serve all customers in Europe from the German service center and restructure the voxeljet UK entity. In this course, the UK service center was closed down in the fourth quarter of 2019, and consequently the lease of the Milton Keynes facility has been terminated early and will end in May 2020. voxeljet UK will expand its sales team and focus on selling 3D printed parts and 3D printers. If the operations of our production facilities are materially disrupted, whether by natural disasters, epidemics or pandemics like COVID-19, demonstrations, acts of terror, or otherwise, we would be unable to fulfill customer orders for the period of the disruption, we would not be able to recognize revenues on orders, we could suffer damage to our reputation, and we might need to modify our standard sales terms to secure the commitment of new customers during the period of the disruption and perhaps longer. Depending on the cause of the disruption, we could incur significant costs to remedy the disruption and resume product shipments. Such a disruption could have an adverse effect on our results of operations.

We may have exposure to greater than anticipated tax liabilities which could adversely affect our operating results.

Our future income taxes could be adversely affected by changes in tax laws, regulations, accounting principles or interpretations thereof, in jurisdictions around the world. In addition, there is a risk that amounts paid or received in transactions between us and one of our international subsidiaries could be deemed for transfer pricing purposes to be lower or higher than we previously recognized or expected to recognize, or that distributions to us from one of our international subsidiaries could be subject to withholding tax. Our determination of our tax liability is always subject to review by applicable tax authorities. Any negative outcome of such a review could have an adverse effect on our operating results and financial condition. In addition, the determination of our worldwide provision for income taxes and other tax liabilities requires significant judgment, and there are many transactions and calculations where the ultimate tax determination is uncertain. Although we believe our estimates are reasonable, the ultimate tax outcome may differ from the amounts recorded in our financial statements and could adversely affect our operating results.

Risks Related to Our Intellectual Property

If we are unable to obtain patent protection for our products or otherwise protect our intellectual property rights, our business could suffer.

We rely on a combination of patents, trademarks, trade secrets and confidentiality agreements and other contractual arrangements with our employees, end-users and others to maintain our competitive position. Our success depends, in part, on our ability to obtain patent protection for or maintain as trade secrets our proprietary products, technologies and inventions and to maintain the confidentiality of our trade secrets and know-how, operate without infringing upon the proprietary rights of others and prevent others from infringing upon our business proprietary rights.

Despite our efforts to protect our proprietary rights, it is possible that competitors or other unauthorized third parties may obtain, copy, use or disclose our technologies, inventions, processes or improvements. We cannot assure you that any of our existing or future patents or other intellectual property rights will be enforceable, will not be challenged, invalidated or circumvented, or will otherwise provide us with meaningful protection or any competitive advantage. In addition, our pending patent applications may not be granted, and we may not be able to obtain foreign patents or elect to file applications corresponding to our U.S. and EU patents. The laws of certain countries outside the United States and EU may not provide the same level of patent protection as in the United States and the EU, so even if we assert our patents or obtain additional patents in countries outside of the United States and the EU, effective enforcement of such patents may not be available. If our patents do not adequately protect our technology, our competitors may be able to offer additive manufacturing systems or other products similar to ours. Our competitors may also be able to develop similar technology independently or design around our patents, and we may not be able to detect the unauthorized use of our proprietary technology or take appropriate steps to prevent such use. Any of the foregoing events would lead to increased competition and lower revenues or gross margins, which could adversely affect our operating results.

We may not be able to protect our trade secrets and intellectual property.

While some of our technology is licensed under patents belonging to others or is covered by process patents which are owned or applied for by us, much of our key technology is not protected by patents. Furthermore, patents are jurisdictional in nature and therefore only protect us in certain markets, rather than globally. In particular, in fast-growing markets such as China and India, our technology is not protected by patents. We have devoted substantial resources to the development of our technology, trade secrets, know-how and other unregistered proprietary rights. While we enter into confidentiality and invention assignment agreements intended to protect such rights, such agreements can be difficult and costly to enforce or may not provide adequate remedies if violated. Such agreements may be breached and confidential information may be willfully or unintentionally disclosed, or our competitors or other parties may learn of the information in some other way. Since we cannot legally prevent one or more other companies from developing similar or identical technology to our unpatented technology, it is likely that, over time, one or more other companies may be able to replicate our technology, thereby reducing our technological advantages. If we do not protect our technology or are unable to develop new technology that can be protected by patents or as trade secrets, we may face increased competition from other companies, which may adversely affect our results of operations.

We have license rights and exclusivity of certain patents and intellectual property and cannot adequately estimate the effects of their expiration upon the entrance or advancement of competitors into the additive manufacturing industrial market.

We have exclusive and non-exclusive license rights to certain patents that we utilize in the industrial market. Some of these patents have already expired, and others will expire within the next one to three years. We cannot adequately estimate the effect that the expiration of these patents will have upon the entrance or advancement of other additive manufacturing manufacturers into the industrial market. See “Item 4. Information on the Company—B. Business Overview—Intellectual Property.”

We may be subject to claims alleging patent infringement.

Our products and technology, including the technology that we license from others, may infringe the intellectual property rights of third parties. Patent applications in the United States and most other countries are confidential for a period of time until they are published, and the publication of discoveries in scientific or patent literature typically lags actual discoveries by several months or more. As a result, the nature of claims contained in unpublished patent filings around the world is unknown to us, and we cannot be certain that we were the first to conceive inventions covered by our patents or patent applications or that we were the first to file patent applications covering such inventions. Furthermore, it is not possible to know in which countries patent holders may choose to extend their filings under the Patent Cooperation Treaty or other mechanisms. In addition, we may be subject to intellectual property infringement claims from individuals, vendors and other companies, including those that are in the business of asserting patents, but are not commercializing products in the field of 3D printing. Any claims that our products or processes infringe the intellectual property rights of others, regardless of the merit or resolution of such claims, could cause us to incur significant costs in responding to, defending and resolving such claims, and may prohibit or otherwise impair our ability to commercialize new or existing products. Any infringement by us or our licensors of the intellectual property rights of third parties may have a material adverse effect on our business, financial condition and results of operations.

Third-party claims of intellectual property infringement successfully asserted against us may require us to redesign infringing technology or enter into costly settlement or license agreements on terms that are unfavorable to us, prevent us from manufacturing or licensing certain of our products, subject us to injunctions restricting our sale of products and use of infringing technology, cause severe disruptions to our operations or the markets in which we compete, impose costly damage awards or require indemnification of our sales agents and end-users. In addition, as a consequence of such claims, we may incur significant costs in acquiring the necessary third-party intellectual property rights for use in our products or developing non-infringing substitute technology. Any of the foregoing developments could seriously harm our business.

We may incur substantial costs enforcing or acquiring intellectual property rights and defending against third-party claims as a result of litigation or other proceedings.

In connection with the enforcement of our intellectual property rights, opposing third parties from obtaining patent rights or disputes related to the validity or alleged infringement of our or third-party intellectual property rights,

including patent rights, we have been and may in the future be subject or party to claims, negotiations or complex, protracted litigation. Intellectual property disputes and litigation, regardless of merit, can be costly and disruptive to our business operations by diverting attention and energies of management and key technical personnel, and by increasing our costs of doing business. We may not prevail in any such dispute or litigation, and an adverse decision in any legal action involving intellectual property rights, including any such action commenced by us, could limit the scope of our intellectual property rights and the value of the related technology. While we strive to avoid infringing the intellectual property rights of third parties, we cannot provide any assurances that we will be able to avoid any infringement claims.

Obtaining and maintaining our patent protection depends on compliance with various procedural, documentary, fee payment and other requirements imposed by governmental patent agencies, and our patent protection could be reduced or eliminated for non-compliance with these requirements.

Periodic maintenance fees on any issued patent are due to be paid to the U.S. Patent and Trademark Office, or USPTO, and foreign patent agencies in several stages over the lifetime of the patent. The USPTO and various foreign governmental patent agencies require compliance with a number of procedural, documentary, fee payment and other similar provisions during the patent application process. While an inadvertent lapse can in many cases be cured by payment of a late fee or by other means in accordance with the applicable rules, there are situations in which noncompliance can result in abandonment or lapse of the patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction. Non-compliance events that could result in abandonment or lapse of a patent or patent application include, but are not limited to, failure to respond to official actions within prescribed time limits, non-payment of fees and failure to properly legalize and submit formal documents. If we or our exclusive licensors fail to maintain the patents and patent applications covering our products and processes, our competitive position would be adversely affected.

We may be subject to claims that our employees have wrongfully used or disclosed alleged trade secrets of their former employers.

Certain of our past and present employees were previously employed at other additive manufacturing companies, including our competitors or potential competitors. Some of these employees executed proprietary rights, non-disclosure and non-competition agreements in connection with such previous employment. Although we try to ensure that our employees do not use the proprietary information or know-how of others in their work for us, we may be subject to claims that we or these employees have used or disclosed intellectual property, including trade secrets or other proprietary information, of any such employee's former employer. We are not aware of any threatened or pending claims related to these matters, but in the future litigation may be necessary to defend against such claims. If we fail in defending any such claims, in addition to paying monetary damages, we may lose valuable personnel or intellectual property rights. Even if we are successful in defending against such claims, litigation could result in substantial costs and be a distraction to management. As we expand our operations into the United States and elsewhere, we may face similar claims with regard to our future employees in these countries.

Certain of our employees and patents are subject to German law.

The majority of our employees work in Germany and are subject to German employment law. Ideas, developments, discoveries and inventions made by such employees and consultants are subject to the provisions of the German Act on Employees' Inventions (*Gesetz über Arbeitnehmererfindungen*), which regulates the ownership of, and compensation for, inventions made by employees. We face the risk that disputes can occur between us and our employees or ex-employees pertaining to alleged non-adherence to the provisions of this act that may be costly to defend and take up our management's time and efforts whether we prevail or fail in such dispute. In addition, under the German Act on Employees' Inventions, certain employees retained rights to patents they invented or co-invented prior to 2009. Although most of these employees have subsequently assigned their interest in these patents to us, there is a risk that the compensation we provided to them may be deemed to be insufficient and we may be required under German law to increase the compensation due to such employees for the use of the patents. In those cases where employees have not assigned their interests to us, we may need to pay compensation for the use of those patents. If we are required to pay additional compensation or face other disputes under the German Act on Employees' Inventions, our results of operations could be adversely affected.

If we fail to comply with our obligations under our intellectual property-related agreements or if we receive an adverse court decision in a lawsuit regarding these agreements, we could lose rights that are important to our business or be subject to restrictions on the conduct of our business.

We have license and co-ownership agreements with respect to certain intellectual property that is important to our business with both Z Corp and The ExOne Company, or ExOne, respectively, that impose restrictions on our use of certain intellectual property. We are party to other intellectual property-related agreements that also are important to our business. Disputes may arise between the counterparties to these agreements and us that could result in termination of these agreements, costly litigation or arbitration that diverts management's attention and company resources, regulatory review or restrictions on the conduct of our business. If we fail to comply with our obligations under our intellectual property-related agreements or receive an adverse court decision in a lawsuit regarding these agreements, the counterparties may have the right to terminate these agreements or sue us for damages or equitable remedies, including injunctive relief. Termination of these agreements, the reduction or elimination of our rights under these agreements, or the imposition of restrictions under these agreements may result in our having to negotiate new or reinstated licenses with less favorable terms, or to cease commercialization of licensed technology and products. This could materially adversely affect our business. In March 2018, ExOne GmbH, a subsidiary of ExOne, notified us of their intent not to pay their annual license fees under an existing intellectual property-related agreement and asserted their rights to claim damages pursuant to an alleged material breach of the agreement. While we dispute these claims, the matter could result in one or more of the risks discussed herein.

Certain technologies and patents have been developed with partners and we may face restrictions on this jointly-developed intellectual property.

We have entered into cooperation agreements with a number of industrial and commercial partners, as well as university partners. We have, in some cases individually and in other cases along with our partners, filed for patent protection for a number of technologies developed under these agreements and may in the future file for further intellectual property protection and/or seek to commercialize such technologies. Under some of these agreements, certain intellectual property developed by us and the relevant partner may be subject to joint ownership by us and the partner and our commercial use of such intellectual property may be restricted, or may require written consent from, or a separate agreement with, the partner. In other cases, we may not have any rights to use intellectual property solely developed and owned by the partner. If we cannot obtain commercial use rights for such jointly-owned intellectual property or partner-owned intellectual property, our future product development and commercialization plans may be adversely affected.

Risks related to our ADSs

The price of our ADSs may fluctuate significantly.

The stock market generally, including our ADSs, has experienced extreme price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of listed companies. Over the past few years, the market price of our ADSs has experienced a significant decline from which it has not fully recovered and may not fully recover. Broad market and industry factors may negatively affect the market price of our ADSs, regardless of our actual operating performance. The market price and liquidity of the market for our ADSs may fluctuate and may be significantly affected by numerous factors, some of which are beyond our control. These factors include:

- significant volatility in the market price and trading volume of securities of companies in our sector, which is not necessarily related to the operating performance of these companies;
- material weakness in our internal controls;
- the mix of products that we sell, and related services that we provide, during any period; delays between our expenditures to develop and market new products and the generation of sales from those products and the related risk of obsolete inventory;
- changes in the amount that we spend to develop, acquire or license new products, technologies or businesses;

[Table of Contents](#)

- changes in our expenditures to promote our products and services;
- changes in the cost of satisfying our warranty obligations and servicing our installed base of 3D printers;
- success or failure of research and development projects of us or our competitors;
- announcements of acquisitions by us or one of our competitors;
- the general tendency towards volatility in the market prices of shares of companies that rely on technology and innovation;
- changes in regulatory policies or tax guidelines;
- changes or perceived changes in earnings or variations in operating results;
- any shortfall in revenues or net income from levels expected by investors or securities analysts; and
- general economic trends and other external factors.

For a discussion of the price of our ADSs and market capitalization, risk of delisting from the NYSE, and NYSE compliance plan, see “—Risks Related to Our Business and Industry—” “If we cannot meet the continued listing requirements of the New York Stock Exchange, our ADSs may be subject to delisting from the New York Stock Exchange, which would have a material adverse effect on our business, financial condition, prospects and liquidity and value of our ADSs.”

Substantial future sales of our ordinary shares or ADSs in the public market, or the perception that these sales could occur, could cause the price of the ADSs to decline.

Future sales of a substantial number of our shares or ADSs, or the perception that such sales will occur, could cause a decline in the market price of the ADSs. We have filed a registration statement on Form F-3 with the SEC utilizing a "shelf" registration process, and such shelf registration statement was declared effective on August 28, 2017. Under this shelf registration process, subject to any applicable U.S. securities law rules and regulations, we may offer from time to time up to an aggregate of \$75,000,000 of our ordinary shares, debt securities, warrants and rights to subscribe for ordinary shares, in one or more offerings. Pursuant to such shelf registration statement, in October 2018, we issued 972,000 ordinary shares, equivalent to 4,860,000 ADSs, in an underwritten public offering (the “October 2018 Issuance”). In November 2018, we issued additional 144,000 ordinary shares, equivalent to 720,000 ADSs, upon the exercise of the over-allotment option exercised by the underwriter (the “November 2018 Issuance” and together with the October 2018 Issuance, the “Issuance”).

To the extent that we raise additional funds through the issuance and sale of equity or other securities that are convertible into or exchangeable for, or that represent the right to receive, ordinary shares or substantially similar securities, the terms may include liquidation or other preferences that adversely affect shareholder rights and the existing shareholders’ ownership interests will be diluted if the statutory shareholders’ subscription right is not exercised by the shareholders or is excluded by the general shareholders’ meeting or the Management Board.

Under the German Stock Corporation Act, every shareholder is entitled to subscription rights for new ordinary shares to be issued or for other new securities that are convertible into or exchangeable for, or that represent the right to receive, ordinary shares or substantially similar securities.

However, our shareholders at the general shareholders’ meeting can resolve to exclude such statutory subscription rights with an affirmative vote of a majority of at least three-quarters of the share capital represented at the meeting. An exclusion of subscription rights also requires a report from the Management Board to the effect that the interests of our Company in excluding the subscription rights outweigh the interests of the shareholders to be entitled to a subscription. An exclusion of subscription rights may be permissible without such justification if our Company is increasing the capital in return for cash contributions, the amount of the capital increase does not exceed 10 percent of the existing share capital of our Company, and the issue price of the new shares is not significantly lower than the trading price for shares in our Company of the same class and having the same features already listed at the time of the final determination of the issue

price. The trading price may also be determined by the market price of an ADS listed on the NYSE, multiplied by the number of ADSs which represent a share.

Shareholders at the general shareholders' meeting may also authorize the Management Board to exclude the statutory shareholders' subscription right for new ordinary shares to be issued or for other new securities that are convertible into or exchangeable for, or that represent the right to receive, ordinary shares or substantially similar securities.

After the Issuance, the Management Board is utilizing the authorized share capital pursuant to Section 5 of the articles of association of our Company – which authorizes the Management Board, with the consent of the supervisory board, to increase our Company's registered share capital in one or more tranches by up to an additional EUR 2,418,000 by issuing up to 2,418,000 new shares (equivalent to 12,090,000 ADSs) against contributions in cash or in kind. The Management Board is authorized to exclude the statutory shareholders' subscription rights with the consent of the supervisory board (i) to exclude fractional amounts resulting from the subscription ratio from the statutory shareholders' subscription right, (ii) in case of capital increases in kind, in particular, but without limitation, to acquire companies, divisions of companies or interests in companies or (iii) in case of capital increases in cash provided that the issue price of the new shares is not substantially lower than the trading price for shares in our Company of the same class and having the same conditions already listed at the time of the final determination of the issue price (the trading price shall also be understood to mean the price of an ADS listed on the NYSE multiplied by the number of ADSs representing one share) and further provided that the amount of the share capital represented by the shares issued in this context under the exclusion of the statutory shareholders' subscription right does not exceed 10 percent of the share capital both at the time when such authorization came into effect and when it is utilized.

In addition, shareholders at the general shareholders' meeting may from time to time cancel, amend or grant new authorizations to the Management Board to exclude the statutory shareholders' subscription rights, also for capital increases in cash for the purpose of issuing shares that are to be placed on the U.S. capital market or with institutional investors from any jurisdiction by means of ADSs, and in the same context also to cover an over-allotment option granted to the issuing banks.

Our principal shareholders and management own a significant percentage of our ordinary shares and will be able to exert significant influence over matters subject to shareholder approval.

Members of our Management Board currently beneficially own 18.2% of our ordinary shares (including ordinary shares represented by ADSs). These shareholders have significant influence over the outcome of all matters requiring shareholder approval. For example, these shareholders may be able to influence the outcome of elections of members of our Supervisory Board, amendments of our organizational documents, or approval of any merger, sale of assets, or other major corporate transactions. This may prevent or discourage unsolicited acquisition proposals or offers for our ordinary shares or ADSs that you may feel are in your best interest as one of our shareholders. The interests of this group of shareholders may not always coincide with your interests or the interests of other shareholders, and they may act in a manner that advances their best interests and not necessarily those of other shareholders, including seeking a premium value for their ordinary shares, which might affect the prevailing market price for our ADSs.

Holders of our ADSs may not have the same voting rights as the holders of our ordinary shares and may not receive voting materials in time to be able to exercise your right to vote.

Except as described in this annual report and the deposit agreement relating to our ADSs, holders of the ADSs will not be able to exercise voting rights attaching to the ordinary shares evidenced by the ADSs on an individual basis. Under the terms of the deposit agreement, holders of the ADSs appoint the depository or its nominee as their representative to exercise the voting rights attaching to the ordinary shares represented by the ADSs. You may not receive voting materials in time to instruct the depository to vote, and it is possible that you, or persons who hold their ADSs through brokers, dealers or other third parties, will not have the opportunity to exercise a right to vote.

You may not receive distributions on our ordinary shares represented by the ADSs or any value for them.

Under the terms of the deposit agreement relating to our ADSs, the depository for the ADSs has agreed to pay to you the cash dividends, if any, or other distributions it or the custodian receives on our ordinary shares or other deposited securities after deducting its fees and expenses. You will receive these distributions in proportion to the

[Table of Contents](#)

number of our ordinary shares your ADSs represent. However, in accordance with the limitations set forth in the deposit agreement, it may be unlawful or impractical to make a distribution available to holders of ADSs. In addition, with respect to distributions of rights to subscribe for additional ordinary shares or ADSs, such distributions will only be made if we request such rights be made available to holders of the ADSs. We have no obligation to take any other action to permit the distribution of the ADSs, ordinary shares, rights or anything else to holders of the ADSs. This means that you may not receive the distributions we make on our ordinary shares or any value from them. These restrictions may have a material adverse effect on the value of your ADSs.

We have no present intention to pay dividends on our ordinary shares in the foreseeable future and, consequently, your only opportunity to achieve a return on your investment during that time is if the price of our ADSs appreciates.

We have no present intention to pay dividends on our ordinary shares in the foreseeable future. Any recommendation by our Management and Supervisory Boards to pay dividends will depend on many factors, including our financial condition, results of operations, legal requirements and other factors. Accordingly, if the price of our ADSs declines in the foreseeable future, you will incur a loss on your investment, without the likelihood that this loss will be offset in part or at all by potential future cash dividends.

As a foreign private issuer, we are exempt from a number of rules under the U.S. securities laws and are permitted to file less information with the SEC than U.S. companies. This may limit the information available to holders of ADSs.

We are a “foreign private issuer,” as defined in the SEC rules and regulations, and, consequently, we are not subject to all of the disclosure requirements applicable to companies organized within the United States. For example, we are exempt from certain rules under the Securities Exchange Act of 1934, as amended, or the Exchange Act, that regulate disclosure obligations and procedural requirements related to the solicitation of proxies, consents or authorizations applicable to a security registered under the Exchange Act. In addition, members of our Management Board and Supervisory Board and our principal shareholders are exempt from the reporting and “short-swing” profit recovery provisions of Section 16 of the Exchange Act and related rules with respect to their purchases and sales of our securities. Moreover, we are not required to file periodic reports and financial statements with the SEC as frequently or as promptly as U.S. public companies. Accordingly, there may be less publicly-available information concerning our Company than there is for U.S. public companies.

As a foreign private issuer, we are required to file an annual report on Form 20-F within four months of the close of each year ended December 31 and furnish reports on Form 6-K relating to certain material events promptly after we publicly announce these events. In addition, under the NYSE’s Listed Company Manual, we must submit to the SEC a Form 6-K that includes interim earnings reports on a semi-annual basis. Although we intend to issue quarterly financial information, because of the above exemptions for foreign private issuers, we are not required to do so and may not provide quarterly information if we are not able to do so. For example, because of delays described in our previously filed reports, we will not issue quarterly financial information for the first quarter ended March 31, 2020 and instead expect to provide financial results for the six-months ended June 30, 2020 in August 2020. Therefore, holders of our ADSs may not be afforded the same protections or information generally available to investors holding shares in public companies organized in the United States.

As a foreign private issuer, we are not subject to certain New York Stock Exchange corporate governance rules applicable to U.S. listed companies.

We rely on provisions in the NYSE’s Listed Company Manual that permit us to follow our home country corporate governance practices with regard to certain aspects of corporate governance. This allows us to follow German corporate law and the German Corporate Governance Code, which differ in significant respects from the corporate governance requirements applicable to U.S. companies listed on the NYSE.

In accordance with our NYSE listing, our Audit Committee is required to comply with or satisfy an exemption from the provisions of Section 301 of the Sarbanes-Oxley Act and Rule 10A-3 of the Exchange Act, both of which are also applicable to listed U.S. companies. Because we are a foreign private issuer, however, we generally are permitted to follow home country practice in lieu of the corporate governance standards provided in the NYSE’s Listed Company Manual. In particular, we are not required to comply with the requirements that the members of our Audit Committee satisfy financial literacy standards, that a majority of the members of our Supervisory Board must be independent, that our Audit Committee and Compensation and Nominating Committee adopt written charters and that we adopt and

disclose corporate governance guidelines. If some investors find the ADSs less attractive as a result of these differences, there may be a less active trading market for the ADSs and the price of the ADSs may be more volatile. See “Item 16.G Corporate Governance.”

We may lose our foreign private issuer status in the future, which could result in significant additional costs and expenses.

As a foreign private issuer, we are not required to comply with all the periodic disclosure and current reporting requirements of the Exchange Act and related rules and regulations. The determination of foreign private issuer status is made annually on the last business day of an issuer’s most recently completed second fiscal quarter. Accordingly, we will next make a determination with respect to our foreign private issuer status on June 30, 2020. There is a risk that we will lose our foreign private issuer status in the future.

We would lose our foreign private issuer status if, for example, more than 50% of our assets are located in the United States and we continue to fail to meet additional requirements necessary to maintain our foreign private issuer status. As of December 31, 2019, approximately 13% of our assets were located in the United States, although this may increase as we expand our operations in the United States. The regulatory and compliance costs to us under U.S. securities laws as a U.S. domestic issuer may be significantly greater than the costs we incur as a foreign private issuer. If we are not a foreign private issuer, we will be required to file periodic reports and registration statements on U.S. domestic issuer forms with the SEC, which are more detailed and extensive in certain respects than the forms available to a foreign private issuer. We would be required under current SEC rules to prepare our financial statements in accordance with U.S. GAAP and modify certain of our policies to comply with corporate governance practices associated with U.S. domestic issuers. Such conversion and modifications would involve additional costs. In addition, we may lose our ability to rely upon exemptions from certain corporate governance requirements on the NYSE that are available to foreign private issuers such as the ones described above and exemptions from procedural requirements related to the solicitation of proxies.

We incur significant increased costs as a result of operating as a company whose ADSs are publicly traded in the United States, and our management is required to devote substantial time to new compliance initiatives.

As a company whose ADSs commenced trading in the United States in October 2013, we incur significant legal, accounting, insurance and other expenses that we did not incur before going public. In addition, the Sarbanes-Oxley Act, the Dodd-Frank Wall Street Reform and Consumer Protection Act and related rules implemented by the SEC and the NYSE have imposed various requirements on public companies, including requiring establishment and maintenance of effective disclosure and financial controls. Our management and other personnel must devote a substantial amount of time to these compliance initiatives. Moreover, these rules and regulations increase our legal and financial compliance costs and make some activities more time-consuming and costly. For example, these rules and regulations have made it more difficult and more expensive for us to obtain director and officer liability insurance, and we may be required to incur substantial costs to maintain the same or similar coverage. These laws and regulations could also make it more difficult and expensive for us to attract and retain qualified persons to serve on our Supervisory Board or its committees or on our Management Board. Furthermore, if we are unable to satisfy our obligations as a public company, we could be subject to delisting of the ADSs, fines, sanctions and other regulatory action and potentially civil litigation.

U.S. investors may have difficulty enforcing civil liabilities against our Company or members of our Management and Supervisory Boards.

The members of our Management and Supervisory Boards are non-residents of the United States, and all or a substantial portion of the assets of such persons are located outside the United States. As a result, it may not be possible, or may be very difficult, to serve process on such persons or us in the United States or to enforce judgments obtained in U.S. courts against them or us based on civil liability provisions of the securities laws of the United States. In addition, awards of punitive damages in actions brought in the United States or elsewhere may be unenforceable in Germany. An award for monetary damages under the U.S. securities laws would be considered punitive if it does not seek to compensate the claimant for loss or damage suffered and is intended to punish the defendant. The enforceability of any judgment in Germany will depend on the particular facts of the case as well as the laws and treaties in effect at the time. Litigation in Germany is also subject to rules of procedure that differ from the U.S. rules, including with respect to the taking and admissibility of evidence, the conduct of the proceedings and the allocation of costs. Proceedings in Germany

would have to be conducted in the German language, and all documents submitted to the court would, in principle, have to be translated into German. For these reasons, it may be difficult for a U.S. investor to bring an original action in a German court predicated upon the civil liability provisions of the U.S. federal securities laws against us and the members of our Management and Supervisory Boards. The United States and Germany do not currently have a treaty providing for recognition and enforcement of judgments (other than arbitration awards) in civil and commercial matters, though recognition and enforcement of foreign judgments in Germany is possible in accordance with applicable German laws.

You may be subject to limitations on the transfer of your ADSs.

Your ADSs are transferable on the books of the depository. However, the depository may close its books at any time or from time to time when it deems doing so expedient in connection with the performance of its duties. The depository may close its books from time to time for a number of reasons, including in connection with corporate events such as a rights offering, during which time the depository needs to maintain an exact number of ADS holders on its books for a specified period. The depository may also close its books in emergencies, and on weekends and public holidays. The depository may refuse to deliver, transfer or register transfers of our ADSs generally when our share register or the books of the depository are closed, or at any time if we or the depository thinks that it is advisable to do so because of any requirement of law or of any government or governmental body, or under any provision of the deposit agreement, or for any other reason in accordance with the terms of the deposit agreement. As a result, you may be unable to transfer your ADSs when you wish to.

If securities or industry analysts do not publish research or reports about our business, or if they or anyone else gives negative recommendations regarding our ADSs, the market price for our ADSs and trading volume could decline.

The trading market for our ADSs will be influenced by research or reports that industry or securities analysts publish about our business. If one or more analysts who cover us downgrade our ADSs, the market price for our ADSs would likely decline. If other individuals, including short sellers, disseminate negative information regarding our business or our ADSs, the market price for our ADSs may also decline. If one or more of these analysts cease to cover us or fail to regularly publish reports on us, we could lose visibility in the financial markets, which, in turn, could cause the market price or trading volume for our ADSs to decline.

Your rights as a shareholder in a German corporation may differ from your rights as a shareholder in a U.S. corporation.

We are organized as a stock corporation (*Aktiengesellschaft*) under the laws of Germany. You should be aware that the rights of shareholders under German law differ in important respects from those of shareholders in a U.S. corporation. These differences include, in particular:

- Under German law, certain important resolutions, including, for example, capital decreases, measures under the German Transformation Act (*Umwandlungsgesetz*), such as mergers, conversions and spin-offs, the issuance of convertible bonds or bonds with warrants attached and the dissolution of the German stock corporation apart from insolvency and certain other proceedings, require the vote of a 75% majority of the capital present or represented at the relevant shareholders' meeting. Therefore, the holder or holders of a blocking minority of 25% or, depending on the attendance level at the shareholders' meeting, the holder or holders of a smaller percentage of the shares in a German stock corporation may be able to block any such votes, possibly to our detriment or the detriment of our other shareholders.
- As a general rule under German law, a shareholder has no direct recourse against the members of the management board or supervisory board of a German stock corporation in the event that it is alleged that they have breached their duty of loyalty or duty of care to the German stock corporation. Apart from insolvency or other special circumstances, only the German stock corporation itself has the right to claim damages from members of either board. A German stock corporation may waive or settle these damages claims only if at least three years have passed and the shareholders approve the waiver or settlement at the shareholders' meeting with a simple majority of the votes cast, provided that a minority holding, in the aggregate, 10% or more of the German stock corporation's share capital does not have its opposition formally noted in the minutes maintained by a German civil law notary.

For more information, we have provided summaries of relevant German corporation law and of our articles of association under “Item 6. Directors, Senior Management and Employees—C. Board Practices” and “Item 10. Additional Information—B. Memorandum and Articles of Association.”

Exchange rate fluctuations may reduce the amount of U.S. dollars you receive in respect of any dividends or other distributions we may pay in the future in connection with your ADSs.

Under German law, the determination of whether we have been sufficiently profitable to pay dividends is made on the basis of our unconsolidated annual financial statements prepared under the German Commercial Code (*Handelsgesetzbuch*) in accordance with accounting principles generally accepted in Germany. Exchange rate fluctuations may affect the amount in U.S. dollars that our shareholders receive upon the payment of cash dividends or other distributions we declare and pay in Euros, if any. Such fluctuations could adversely affect the value of our ADSs and, in turn, the U.S. dollar proceeds that holders receive from the sale of our ADSs.

In the event we are or become treated as a passive foreign investment company, or PFIC, for U.S. federal income tax purposes, U.S. holders of our ADSs could be subject to adverse U.S. federal income tax consequences.

In the event we were treated as a PFIC, U.S. holders (as defined in “Item 10. Additional Information—E. Taxation—U.S. Taxation of ADSs”) of our ADSs could be subject to adverse U.S. federal income tax consequences. These consequences include the following: (i) if our ADSs are “marketable stock” for purposes of the PFIC rules and a U.S. holder makes a mark-to-market election with respect to its ADSs, the U.S. holder will be required to include annually in its U.S. federal taxable income an amount reflecting any year-end increase in the value of its ADSs, (ii) if a U.S. holder does not make a mark-to-market election, it may incur significant additional U.S. federal income taxes on income resulting from distributions on, or any gain from the disposition of, our ADSs, as such income generally would be allocated over the U.S. holder’s holding period for its ADSs and subject to tax at the highest rates of U.S. federal income taxation in effect for such years, with an interest charge then imposed on the resulting taxes in respect of such income, and (iii) dividends paid by us would not be eligible for reduced individual rates of U.S. federal income tax. We do not intend to furnish holders with the information necessary to make a “qualified electing fund” election in lieu of a mark-to-market election. In addition, U.S. holders that own an interest in a PFIC are required to file additional U.S. federal tax information returns.

A U.S. holder may in certain circumstances mitigate adverse tax consequences of the PFIC rules by filing an election to treat the PFIC as a qualified electing fund, or a QEF. However, in the event that we are or become a PFIC, we do not intend to comply with the reporting requirements necessary to permit U.S. holders to elect to treat us as a QEF. See “Item 10. Additional Information—E. Taxation—Additional United States Federal Income Tax Consequences—PFIC Rules.”

ITEM 4. INFORMATION ON THE COMPANY

A. HISTORY AND DEVELOPMENT OF THE COMPANY

voxeljet AG is a stock corporation organized under the laws of Germany. The legal predecessor of our Company was founded as Generis GmbH on May 5, 1999. On January 7, 2004, Generis GmbH changed its name to Voxeljet Technology GmbH.

On July 2, 2013, the shareholders of Voxeljet Technology GmbH incorporated VXLT 2013 AG, which was registered in the commercial register of the local court (*Amtsgericht*) of Augsburg, Germany on July 11, 2013 under number HRB 27999.

Voxeljet Technology GmbH was subsequently merged by way of merger through assumption into VXLT 2013 AG on July 29, 2013 effective as of September 12, 2013 upon registration of the merger in the commercial register of the surviving entity, VXLT 2013 AG. The merger had retroactive effect as of January 1, 2013. As part of the merger, VXLT 2013 AG changed its name to voxeljet AG effective upon the registration of the merger in the commercial register. By way of merger through assumption, upon effectiveness, voxeljet AG, as the surviving entity, took over all assets and liabilities of Voxeljet Technology GmbH by universal assumption and accession under German mandatory law, and Voxeljet Technology GmbH ceased to exist.

[Table of Contents](#)

On October 23, 2013, we sold 5,600,000 ADSs in our initial public offering at a price of \$13.00 per ADS, thereby raising \$72.8 million (before underwriting discounts and costs). The ADSs we sold in the initial public offering represented new shares issued in a capital increase resolved by our shareholders for purposes of the initial public offering on October 11, 2013.

On April 16, 2014, we completed a follow-on offering of 3,000,000 ADSs at a public offering price of \$15.00 per ADS. Net proceeds from the follow-on offering to the Company were approximately \$41.4 million. On April 24, 2014, the underwriters in the follow-on offering purchased 450,000 ADSs from certain of the Company's shareholders (the "Selling Shareholders") pursuant to the over-allotment option they were granted in the follow-on offering. The Company did not receive any proceeds from the sale of ADSs by the Selling Shareholders.

On October 17, 2018, we issued 972,000 ordinary shares, equivalent to 4,860,000 ADSs, at an offering price of \$2.57 per ADS (the "Public Offering Price"). The Company received net proceeds of approximately \$10.6 million. Members of our Management Board, who are also significant shareholders, purchased an aggregate number of 233,462 ADSs in this offering at the Public Offering Price. On November 8, 2018, we closed the over-allotment option in which we issued additional 144,000 ordinary shares, equivalent to 720,000 ADSs. The Company received net proceeds of approximately \$1.6 million.

Our website is www.voxeljet.de. This website address is included in this annual report as an inactive textual reference only. The information and other content appearing on our website are not part of this annual report. Our principal executive offices are located at Paul-Lenz-Straße 1a, 86316 Friedberg, Germany, and our telephone number is +49 821 7483 100. Our agent for service of process in the United States is Corporation Service Company, located at 1090 Vermont Avenue N.W., Washington, D.C. 20005, telephone number (800) 927-9800.

Capital Expenditures

Our capital expenditures amounted to €1.1 million, €3.8 million and €3.6 million, for the years ended December 31, 2019, 2018, and 2017, respectively. In 2019 the capital expenditures mainly comprised the final payment for the new office building and production facility located in Friedberg, Germany, which were completed in October 2017, as well as upgrades of our ERP-System. In 2018 the capital expenditures mainly comprised 3D printers to be used in our Services segment. In 2017, our principal capital expenditures were for the construction of a new office building and production facility located in Friedberg, Germany for approximately € 1.9 million. For further information about the property we purchased in Friedberg, Germany, see "—D. Property, Plants and Equipment."

B. BUSINESS OVERVIEW

Our Company

We are a leading provider of high-speed, large-format 3D printers and on-demand parts services to industrial and commercial customers. Our 3D printers employ a powder binding, additive manufacturing technology to produce parts using various material sets, which consist of particulate materials and proprietary chemical binding agents. We offer our customers the highest volumetric output rate in the industry due to the combination of our large build boxes and print speeds. We provide our 3D printers and on-demand parts services to industrial and commercial customers serving the automotive, aerospace, art and architecture, engineering and consumer product end markets.

We currently offer eight different 3D printer platforms, with build boxes that range from 300 × 200 × 150 millimeters to 4,000 × 2,000 × 1,000 millimeters and various print speeds, which produce volumetric output rates ranging from 0.4 liters per hour to 156.0 liters per hour. All of our platforms support our commercialized material sets, sand and plastics, along with their respective proprietary chemical binding agents. We develop our material sets according to the needs of our industrial and commercial customers, and we are currently in varying stages of developing new material sets, including shell molding and chromite sands, PMMA-based plastics, ceramics, silicon carbide, tungsten carbide and cement.

Our business is divided into two principal segments: Systems and Services.

In our Systems segment, we focus on the sale, production and development of 3D printers. In addition, we sell refurbished 3D printers which were produced for and used in our Services segment and provide printers to customers

[Table of Contents](#)

under operating lease agreements. We also provide consumables, including particulate materials and proprietary chemical binding agents, maintenance contracts and spare parts to our customers.

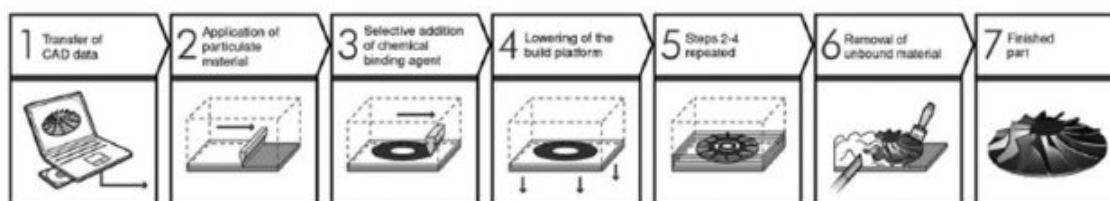
In our Services segment, we print on-demand parts for our customers. We operate service centers in Germany, the United States and China. At our service centers, we create parts, molds, cores and models based on designs produced using 3D computer-aided design, or CAD, software. Furthermore, there are customers who order casted parts directly from us. In those cases, we provide molds or models to external suppliers who then cast the parts for our customers. We believe our service center in Germany is one of the largest additive manufacturing service centers in Europe.

We sold our first 3D printer in 2002 and commenced our on-demand parts services business in 2003. As of December 31, 2019, we had an installed base of 188 printers worldwide, and we operated service centers in Germany, the United States and China. Our service centers in Germany and the United States each have approximately 43,000 square feet of production space. Our service center in China has approximately 26,000 square feet and approximately 15,000 square feet of production space, respectively.

Our Additive Manufacturing Technology

Our printers build or print parts from digital designs produced using 3D CAD software by successively depositing thin layers of particulate materials. A printhead passes over each layer and deposits our proprietary chemical binding agent in the selected areas where the finished product will be created.

The following is a graphical depiction illustrating our manufacturing process:



Our 3D Printers

We currently produce eight 3D printer platforms. Our 3D printers consist of a build box that includes a machine platform and a controller. Our 3D printers differ based on build box size and print speeds, but all utilize our technology and can support each of our existing material sets and each of our material sets that are currently in development. As of December 31, 2019, we had an installed base of 188 printers worldwide, which includes (i) printers in our service centers and (ii) printers which are no longer commercially available, but which we believe our customers continue to use.

The following table is a comparison of our 3D printer platforms:

Platform	VX4000	VX2000	VX1300 X	VX1000
Build Box (millimeters)	4,000 X 2,000 X 1,000	2,000 X 1,000 X 1,000	1,300 X 600 X 500	1,000 X 600 X 500
External Dimensions (millimeters)	20,000 X 7,800 X 4,000	5,000 X 3,000 X 2,300	2,600 X 4,250 X 5,250	3,000 X 2,800 X 2,150
Print Resolution (dots per inch)	200	200, 600	200	200, 600
Layer Thickness (micrometers)	120 - 300	100 - 400	100 - 500	100 - 300
Volumetric Output Rate (liters per hour)	123	47	156	23
Date of Introduction	2011	2013	2019	2011

[Table of Contents](#)

Platform	VXC800	VX500	VX200	VX200 HSS
Build Box (millimeters)	850 X 500 X 8	500 X 400 X 300	300 X 200 X 150	320 X 170 X 200
External Dimensions (millimeters)	5,000 X 2,800 X 2,500	1,800 X 1,800 X 1,700	2,100 X 1,500 X 1,400	1700 X 900 X 1500
Print Resolution (dots per inch)	200	200, 600	200, 600	360
Layer Thickness (micrometers)	120 - 300	80 - 150	150	80 - 100
Volumetric Output Rate (liters per hour)	18	3	0.7	0.39 - 0.49
Date of Introduction	2012	2007	2012	2017

Materials

Our commercialized material sets are comprised of sand and plastic particulate materials and their respective proprietary chemical binding agents. We believe these material sets are well suited for our commercial and industrial customers because these materials either (i) are commonly used in their existing manufacturing processes or (ii) match or exceed desired performance characteristics of existing materials being utilized in their manufacturing processes. Our sand material set offerings include four types of sands: (i) silica, (ii) kerphalite, (iii) zirconium oxide and (iv) chromite, with furan, inorganic, shell molding and phenol resins as proprietary chemical binding agents. Our plastics material set offering is based on Poly(methyl methacrylate), or PMMA, and Polypor B and C as the proprietary chemical binding agents.

We are currently in varying stages of development of new material sets which include the following particulate materials:

- different types of sands;
- different types of ceramics;
- silicon carbide and other hard metals;
- cement;
- polyamide;
- thermoplastic polyurethane

On-demand Parts Services

At our service centers, we create parts, molds, cores and models for a variety of industrial and commercial customers based on designs produced using 3D CAD software. We receive orders directly from customers and indirectly through our sales agents.

Our service centers in Germany and the United States each have approximately 43,000 square feet of production space. On March 1, 2019, our Chinese service center moved into a new facility with more than 78,000 square feet of production space, storage and office space. In the third quarter of 2019, we decided to consolidate 3D printing to serve all customers in Europe from the German service center and restructure the voxeljet UK entity. In this course, the UK service center was closed down in the fourth quarter of 2019, and consequently the lease of the Milton Keynes facility has been terminated early and will end in May 2020. voxeljet UK will expand its sales team and will focus on selling 3D printed parts and 3D printers.

We help our customers move from the design stage to the production stage by assisting them in evaluating the optimal design and material sets for their production needs. After printing parts, we employ a thorough cleaning, finishing, quality control review and packaging and shipping process to ensure the customer receives high-quality and immediately-usable parts. Based on our capacity utilization, the lead time required for us to print a part for a customer ranges from three to 21 days and is typically five business days. Due to the size of the printers' build boxes utilized in our German service center, specifically the VX4000 printer, we are able to print more parts simultaneously on one printer than anyone else in the industry, resulting in cost-effective and quick turnaround times for our customers' print jobs and increased revenue and profitability for us.

Our technicians also train customers on operating, maintaining and troubleshooting our 3D printers through hands-on experience at our German service center. Additionally, our technicians provide field support to our customers as needed. After the warranty period, we offer maintenance contracts to our customers. Those contracts include scheduled service visits where we maintain and clean the 3D printers as well as on demand visits and troubleshooting, in case of sudden problems.

Our Customers

We are in the market for industrial part production utilizing additive manufacturing and are one of the few providers of additive manufacturing solutions to industrial and commercial customers, including the foundry, automotive, heavy equipment, power fluid handling, aerospace and consumer product industries. Our mission is to re-define additive mass production. We believe we have a reputation for providing high-quality systems and services in the marketplace with strong relationships with a number of leading multinational customers. Out of our broad customer portfolio we deal with customers including Daimler AG, BMW AG, Ford Motor Company, Volkswagen AG, Porsche SE, Evonik Industries AG as well as with other key users of additive manufacturing, and technical universities such as the ETH Zürich, and the Vaal University of Technology. Purchasers of our printers also include original equipment manufacturers, government agencies and independent service bureaus that provide rapid prototyping and manufacturing services to their customers. Many of our customers have been customers for over a decade. We also collaborate on research and development projects with a number of our automotive and technical university customers, including Daimler AG, BMW AG, Ford Motor Company, Volkswagen AG and the Technical University of Munich. As our customers integrate additive manufacturing into their production processes, they typically continue to utilize our on-demand parts service center for a variety of reasons, including for incremental capacity and for parts printed from different material sets.

We conduct a significant portion of our business with a limited number of customers. Our top five customers represented 21%, 20% and 19% of total revenues for the years ended December 31, 2019, 2018, and 2017, respectively. These customers primarily purchased 3D printers, while one of the top five customers primarily ordered printed parts. In the year ended December 31, 2019, there were no customers who accounted for more than 10% of our revenues. Sales of on-demand parts and consumables tend to be from repeat customers that may utilize the capability of our on-demand parts service centers for one month or longer. Sales of 3D printers are low volume and generate significant revenues, but the same customers do not necessarily buy printers in each period. Timing of customer purchases is dependent on the customer's capital budgeting cycle, which may vary from period to period. The nature of the revenues from 3D printers does not leave us dependent upon a single or a limited number of customers. Rather, the timing of the sales can have a material effect on our period-to-period financial results.

Sales and Marketing

We sell our 3D printers and related consumables both through our direct sales force and with the assistance of our network of more than 20 third-party sales agents globally. Our sales organization, including our dedicated sales, service and application engineers, is responsible for worldwide sales of our 3D printers and on-demand parts services, as well as for the management and coordination of our growing sales agent network. Our direct sales force focuses primarily on customers in Europe, North America and Asia Pacific, while our sales agents are responsible for facilitating sales in other areas of the world where we do not operate directly. We have entered into partnership agreements with each of our sales agents, which grant the sales agent the right to market our products in a specified territory on either an exclusive or non-exclusive basis, depending on the sales agent; however, all sales contracts for our products are entered into between us and our customers. Certain of these sales agents also provide maintenance services to customers in their specified territories. Our application engineers provide professional services through pre-sales support and assist existing customers so that they can take advantage of our latest consumables and techniques to improve part quality and machine productivity. This group also leverages our customer contacts to help identify new application opportunities that utilize our proprietary processes. As of December 31, 2019, our worldwide sales staff for systems and parts consisted of 45 employees. We also expect that our subsidiaries in Europe, North America and Asia Pacific will improve market access through local market development and allow the targeting of specific customers.

Educating our customers and raising awareness in our target markets about the many uses and benefits of our 3D printing technology is an important part of our sales process. We believe that customers who experience the efficiency gains, decreased lead times, increased design flexibility and reduced costs of 3D printing as compared to subtractive manufacturing are more likely to purchase our 3D printers and/or utilize our on-demand parts services. We

encourage potential purchasers of our 3D printers to first utilize our on-demand parts services so that they can experience firsthand the benefits of our 3D printing technology. We currently market our brand and our services at industry conferences, trade shows, and across various forms of digital and traditional media and plan to increasingly expand our marketing efforts in North America in conjunction with our geographic expansion to that region.

Services and Warranty

Our fully-trained service technicians perform installations of our 3D printers. For the first year following the purchase of one of our 3D printers, we provide complimentary service and support under the statutory warranty. We also offer service contracts under which our customers can purchase maintenance and services beyond the one-year term of the warranty. These service contracts contain varying degrees of support services and are priced accordingly. Finally, we sell spare parts which we maintain in stock to assist in providing service expeditiously to our customers. Historically, we have not experienced a high level of warranty claims.

Manufacturing and Suppliers

Manufacturing

We assemble our 3D printers at our facility in Friedberg, Germany using components sourced from distributors of standard electrical or mechanical parts, as well as from manufacturers which design custom parts tailored to the proprietary designs of our machines. We periodically review the quality and performance of our distributors and manufacturers. Upon completion of the assembly of our 3D printers, we perform tests to ensure that the printer is functioning properly before the system is shipped and again after the system is installed at the customer's site. Starting in fiscal year 2020, we are going to assemble some of our 3D printers at our facility in China.

To provide customers with assurance regarding the quality and consistency of our systems, we obtained ISO 9001:2008 certification for our facility in Germany in 2010. ISO 9001:2008 provides a structure for a quality management system that strives for customer satisfaction, consistent quality and efficiency. In addition, there are internal benefits such as improved customer satisfaction, interdepartmental communications, work processes and customer-and-supplier partnerships. The ISO 9000 family of standards relates to quality management systems and is designed to help organizations ensure that they meet the needs of customers and other stakeholders.

Inventory and Suppliers

We maintain an inventory of certain parts to facilitate the timely assembly of products required by our production plan. While most components used in our 3D printers are available from multiple suppliers, certain of these components are only available from limited sources. We consider our limited-source suppliers, including the suppliers of our printheads, to be reliable; however, the loss of one of these suppliers could result in a delay in our operations. This type of delay could require us to find and re-qualify components supplied by one or more new vendors. Although we consider our relationships with our suppliers to be good, we continue to develop risk management plans for these critical suppliers. Regarding inventory we defined targets for raw materials as well as for work in progress. The strategy includes meeting customer expectation and demand for spare parts, wear parts as well as 3D printers with an attractive lead time.

Research and Development

We have an ongoing research and development program to develop new 3D printers and material sets and to improve and expand the capabilities of our existing 3D printers and related material sets. As of December 31, 2019, we had various active research and development projects in different stages of completion. All research and development costs are charged to expense as incurred, as the criteria set forth in IAS 38 for capitalizing such costs have not yet been met. Our development efforts are augmented by development arrangements with research institutions, customers and suppliers of material and hardware, among others.

In addition to our internally-developed technology platforms and the related software, we have licensed the rights to intellectual property developed by third parties through licensing agreements that may obligate us to pay a license fee or royalty, typically based upon a dollar amount per unit or a percentage of the revenues generated by such products.

Our research and development expenses were € 7.2 million, € 6.3 million, and € 5.5 million for the years ended December 31, 2019, 2018, and 2017, respectively.

A significant portion of our research and development expenditures has been focused upon developing proprietary systems, processes and materials, including:

- the qualification of new print materials, including phenolic resins and inorganic binders, PMMA-based and other plastics, ceramics, silicon carbide and cement;
- the development of new or enhanced proprietary chemical binding agents;
- the development of new or enhanced binding mechanisms;
- the mechanics of spreading powders in a build box;
- the transfer of digital data through a series of software links to drive a printhead; and
- synchronizing all of the above to print ever-increasing volumes of material per unit time.

We also regularly apply for research and development grants and subsidies under European and German grant rules for small and medium enterprises. The majority of these grants and subsidies are non-refundable. We have received grants and subsidies from different authorities, including the German Federal Ministry of Economics and Technology (*Bundesministerium für Wirtschaft und Technologie*), the Bavarian Research Foundation (*Bayerische Forschungsstiftung*) and the German Federal Foundation Environment (*Deutsche Bundesstiftung Umwelt*).

We expect to continue to invest significantly in research and development in the future.

Intellectual Property

We consider our proprietary technology to be important to the development, manufacture, and sale of our products and seek to protect such technology through a combination of patents, trademarks, and trade secrets. We also have in place confidentiality agreements and other contractual arrangements with our employees, consultants, customers and others.

Patents. As of December 31, 2019, we owned or co-owned 65 issued U.S. patents and 35 pending U.S. patent applications. In addition, we own or co-own patent rights in Europe, Asia, Brazil and Canada. In total, as of December 31, 2019 our patent portfolio consisted of over 423 patents and patent applications. Our currently issued patents will expire at different times in the future, with the earliest expiring in 2020 and the latest expiring in 2035. Our currently pending applications will generally remain in effect for 20 years from the date of the initial applications.

These patent assets are complemented by our marketing, business development and applications know-how and our ongoing research and development efforts. Nevertheless, there can be no assurance that our patents, licenses or other intellectual property rights will afford us a meaningful competitive advantage in the fast-paced and innovative field in which we operate.

Trade Secrets. As is true in our industry generally, the development of our products, processes and materials has involved a considerable amount of experience, manufacturing and processing know-how and research and development techniques. We protect our proprietary processes and technologies with a blend of patent protection and trade secret protection. As part of our overall intellectual property strategy, we protect our non-patented proprietary knowledge as trade secrets through confidentiality controls and through the use of nondisclosure and confidentiality agreements.

Licenses. We are a party to various licenses and other arrangements that allow us to practice and improve our technology under a range of patents, patent applications and other intellectual property, including license agreements with ExOne, 3D Systems (Z Corp), Bego Medical GmbH, or Bego, and Evonik IP GmbH each described in more detail below.

[Table of Contents](#)

In 2003, we entered into an agreement with Extrude Hone GmbH (now doing business as ExOne) related to patents and technologies using certain binders, methods and equipment for 3-D printing processes, including sand-based 3-D printing. Under the terms of this agreement, ExOne purchased an ownership share in certain patents and related technologies from us. Further, we granted ExOne certain rights to exploit these technologies and ExOne entered into an ongoing obligation to pay royalties to us. The parties also agreed to share revenues generated from any licenses granted by ExOne. The agreement states that we are permitted to use machines and provide services relating to these technologies, but not to make or sell machines utilizing these technologies without ExOne's consent, although ExOne has an obligation to consent if the machines do not compete with products engineered, manufactured or sold by ExOne or its affiliates. If we intend to sell any of the intellectual property that is the subject of this agreement, ExOne has the option to acquire it at fair market value. Similarly, ExOne has a right of first refusal regarding the purchase of any developments and improvements we make to such intellectual property and a set of six patents (including one U.S. patent) related to wax technologies, as well as the right to negotiate to receive a license to such developments and improvements. We later signed an amendment with ExOne specifically allowing us to use the subject patents for our 3D printers working with plastics in exchange for the payment of a license fee. The obligation of both parties to pay royalties under this agreement extends until the expiration of the last issued patent included in the list of transferred patent assets.

While the agreement states that our rights are limited regarding use of certain binders and sand-based casting methods in 3D printers with ExOne, we believe these limitations will not materially impact the growth of our business, as we are able to continue certain activities in compliance with the agreement and we have developed processes which do not rely upon the subject patent portfolio, associated agreements and related technologies. If needed, we will take steps to protect our ability to continue such activities including by challenging the validity or enforceability of certain provisions of the agreement. In March 2018, ExOne GmbH, a subsidiary of ExOne, notified us of their intent not to pay their annual license fees under this agreement and asserted their rights to claim damages pursuant to an alleged material breach of the agreement. We are vigorously disputing these claims, however, the outcome of this matter is uncertain.

In 2004, we entered into a non-exclusive license and sublicense agreement with Z Corp (acquired by 3D Systems in 2012), which allows us to make, use and sell 3D printing equipment for the fabrication of plastic parts utilizing organic powder binders under certain Z Corp and Massachusetts Institute of Technology patents. In return for these rights, we agreed to pay an initial license fee and ongoing tiered royalties. We later amended this agreement, expanding our permitted use of the licensed binder-jetting technology to include inorganic powder, ceramics, and concrete printing in a process that does not require post processing other than oven baking parts or liquid infiltration, but restricting us to monochromatic color configurations. The agreement extends until the expiration of the licensed patents; however, the parties may terminate the agreement under certain conditions.

In 2012, we entered into a cross licensing agreement with Bego pursuant to which each party granted to the other certain exclusive rights regarding each parties' patents and applications directed to continuous additive manufacturing. We granted to Bego an exclusive license to market patent covered products in the field of laser sintering and other related technologies, while Bego granted to us an exclusive license to market patent covered products in the field of binder-jetting technology (other than for dental applications). We also agreed to pay to Bego a royalty and to pay a participation fee to Bego in the event that we grant any sublicenses to the technology (which, to date, we have not done). This agreement automatically terminates upon the expiration of the last patent subject to the agreement.

In March 2015, we entered into a non-exclusive technology license agreement with Evonik IP GmbH, in which voxeljet acquired a license for a 3D printing process using polymeric materials that we believe offers distinct speed and cost benefits. This powder bed fusion process allows for production of parts with thermoplastic properties. In return for these rights, we agreed to pay an upfront payment and ongoing royalties for each royalty period, subject to the payment of a fixed minimum annual royalty if higher. The agreement shall remain in force until the expiration of the last to expire patent of the licensed patents; however, either party may terminate the agreement under certain conditions.

In addition to the foregoing licenses, we have also licensed additional patents that we believe can be used to expand our material set offerings.

Trademarks. We have secured word and figurative trademarks for voxeljet in Europe and have international (IR) applications covering the United States, Russia, Mexico and a number of countries in Asia.

Competition

Our principal competitors consist of other developers of 3D printing systems and providers of 3D printing services. These companies use a variety of additive manufacturing technologies, including:

- fused deposition modeling;
- binder jetting;
- inkjet;
- selective laser sintering; and
- stereolithography.

Some of the companies that have developed and use one or more additive manufacturing technologies to compete with us include: ExOne, 3D Systems Corporation, Stratasys, Ltd., EOS GmbH and HP Inc.

These technologies, which compete for market share in the additive manufacturing industry, possess various competitive advantages and disadvantages relative to one another within key categories, including resolution, accuracy, surface quality, variety and properties of the materials they use and produce, capacity, speed, color, transparency and the ability to print multiple materials. Due to these multiple categories, we believe end-users usually make technology purchasing decisions based on the characteristics that they value most for a particular application. The competitive environment that has developed is therefore intense and dynamic, as market players often position their technologies to capture multiple vertical markets.

Despite the challenging competitive landscape, we believe that we have several competitive advantages, including the size of our build platforms, our printing speeds, the volumetric output rate of our 3D printers and the variety of qualified material sets that we offer to commercial and industrial customers.

We also compete with established subtractive manufacturers in the industrial products market. However, we believe that we are well positioned to expand our share of the industrial products market as additive manufacturing gains recognition and increases its cost effectiveness. As our technologies improve and our unit cost of production decreases, we expect to be able to better compete with subtractive manufacturing on a wide range of products, thereby expanding our addressable market.

Seasonality

Historically, our results of operations have been subject to seasonal factors. Purchases of our 3D printers often follow a seasonal pattern owing to the capital budgeting cycles of our customers. Generally, 3D printer sales are higher in our second and fourth fiscal quarters than in our first and third fiscal quarters. Sales in our Services segment generally are not affected by seasonality. See “Item 3. Key Information—D. Risk Factors—Risks Related to Our Business and Industry—Our revenues and operating results may fluctuate.”

Regulatory/Environmental Matters

We are subject to environmental, health and safety regulations in Germany, as well as in the countries where our products and materials are used or sold.

Germany

Legal Requirements for Manufacturing Sites

Emissions Control Law. We do require a permit granted under the Federal Emissions Control Act (*Bundes-Immissionsschutzgesetz*, or *BImSchG*), as we use resins (*Harze*) to create models for customers. Therefore, the permit was granted for the buildings “Halle 1” “and Halle 2” to us in December 2013 by the District Administration (Landratsamt) of Aichach-Friedberg. The permit was granted under the condition (*Auflage*), that the amount of resins

processed by us does not exceed 25 kilograms per hour. For the building “Halle 3”, the permit was granted in July 2016 by the District Administration (Landratsamt) of Aichach- Friedberg. The permit was granted under the condition (*Auflage*), that the amount of resins processed by us does not exceed 10 kilograms per hour. Facilities that are subject to BImSchG are required to comply with the current state of the art (*Stand der Technik*) in emissions reduction and safety technology. We are therefore supervised by the Landesamt für Umweltschutz (LfU) and as well by the District Administration (*Landratsamt*) of Aichach-Friedberg and have regularly give full reports about the emissions in our facilities.

Production, Possession and Handling of Waste and Dangerous Goods. Our business activities result in the generation, possession and handling of waste, including hazardous waste. Under the German Act on Recycling (*Kreislaufwirtschaftsgesetz*, or KrWG), the generation, possession and handling of waste is subject to several obligations, depending, among other things, on the waste concerned. As the producer (*Erzeuger*) and possessor (*Besitzer*) of waste, we are generally responsible for the proper handling of this waste.

Section 50 of the KrWG requires producers, possessors, collectors and transporters of waste and disposal firms to verify to the competent authority proper disposal of hazardous waste (*gefährliche Abfälle*). Whether a certain substance qualifies as hazardous waste is determined according to the German Ordinance on the European Waste List (*Verordnung über das Europäische Abfallverzeichnis*).

We further comply with the International Maritime Dangerous Goods Code, which is accepted as an international guideline for the safe transportation or shipment of dangerous goods or hazardous materials by water.

We also comply with the Regulation (EC) No. 1907/2006 of the European Parliament and of the Council of December 18, 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

We have trained and educated an employee to serve as our risk prevention officer (*Gefahrgutbeauftragter*). The risk prevention officer ensures that we comply with specific regulations and provisions when dangerous goods are shipped. In addition, we have two “Authorized Persons” (*Beauftragte Personen*), who are equally responsible for the risk prevention, and who are advised by the risk prevention officer. All of these persons (risk prevention officer and the authorized persons) do regularly take part in external trainings.

Legal Requirements Related to Products

Product Safety. Our products are used in a wide range of industries. As some of our products may be used directly by customers, we are subject to the German Product Safety Act (*Produktsicherheitsgesetz*, or ProdSG). The ProdSG is mainly based on Directive 2001/95/EC of the European Parliament and the Council of December 3, 2001 on general product safety (GPSD). Through the ProdSG and its predecessors, the GPSD was transformed into German law. With the ProdSG of November 8, 2011 and the ninth regulation to the ProdSG as amended (*Neunte Verordnung zum Produktsicherheitsgesetz (Maschinenverordnung)*), the German legislature also transformed, among other European Directives, the Directive 2006/42/EC of the European Parliament and of the Council of May 17, 2006 on machinery into German law. The ProdSG applies whenever products are made available on the market, exhibited or used for the first time in the context of a commercial activity, but only in the absence of other legal provisions that provide for corresponding or more far-reaching provisions.

Under the ProdSG, a product may be made available on the market only if it complies with specific regulations for such product, or, in the absence of such specific regulations, if its intended or foreseeable use does not put the health and safety of persons at risk. In essence, under the ProdSG manufacturers may only place "safe" products on the market.

In addition to compliance with this safety requirement, if products are made available to consumers, manufacturers must provide consumers with the necessary information to enable them to assess the risks inherent in such product where such risks are not immediately obvious without adequate warnings. In the event of potential product issues, manufacturers might be under an obligation to take precautions against such risks (for example, withdraw products from the market, inform consumers, recall products which have already been supplied to consumers, etc.). If manufacturers or distributors of consumer products discover that a product is potentially dangerous or unsafe, they must generally notify the competent authorities and, if necessary, cooperate with them. Unsafe products may also be listed in an EU-wide publicly-accessible database such as RAPEX or ICSMS.

Occupational Health and Safety Requirements. Where the working environment may pose threats to employees, occupational health and safety laws are applicable. German law on occupational safety is heavily influenced by the requirements of EU law. The central rules on occupational safety in Germany are contained in the Act on Occupational Safety (*Arbeitsschutzgesetz*, or ArbSchG), which requires employers to provide for their employees' safety. This general obligation is put into effect through several ordinances (*Rechtsverordnungen*) under the ArbSchG, which are defined in technical guidelines. One central element is the Workplaces Ordinance (*Arbeitsstättenverordnung*), which contains various regulations on workplace conditions relating to, for example, ventilation, temperature and illumination.

In addition, we are under surveillance of the employers' liability insurance association (Berufsgenossenschaft). All companies in Germany are obliged to be member of the Berufsgenossenschaft, who is monitoring the companies regarding compliance with the Health and Safety Requirements and who in general covers liability for accidents at work and occupational diseases.

Potential Liability for Products and Environmental Losses

Our business activities are such that product liability and liability for environmental damage are possible. Under general rules of the German Civil Code (*Bürgerliches Gesetzbuch*, or BGB), fault-based compensation (*Schadensersatz*) is to be paid for breach of contract or unlawful infringements of legally protected rights. This obligation does not only apply to our own acts but may potentially extend to behavior of individuals that work or undertake tasks for us under Sections 278, and 831 of BGB.

In addition, we may be strictly liable (*i.e.*, liable regardless of our fault), as a Producer under the Product Liability Act (*Produkthaftungsgesetz*, or ProdHaftG), for damages caused by a defective product. "Producer" generally means any participant in the production process, the importer of the defective product, any person putting a name, trademark or other distinguishing feature on the product, and any person supplying a product whose actual producer cannot be identified. A product is "defective" when it does not provide the safety which a person is entitled to expect when taking all circumstances into account, including among other things, the presentation of the product, the use to which it could reasonably be expected that the product would be put and the time when the product was put into circulation.

Additionally, in case of damage to persons or property caused by our facility, we may be strictly liable under the Act on Liability for Environmental Damage (*Umwelthaftungsgesetz*). In case of environmental damages to species, natural habitats, water or soil we may be liable under the Environmental Damage Act (*Umweltschadensgesetz*). The Environmental Damage Act only applies if German Federal or State Legislation does not specify the prevention and restoration of environmental damage or does not comply with this Act in its requirements.

Worldwide

Our operations and the activities of our employees, contractors and agents around the world are subject to the laws and regulations of numerous countries, including the United States. These laws and regulations include data privacy requirements, labor relations laws, tax laws, anti-competition regulations, prohibitions on payments to governmental officials, federal and state environmental regulations, import and trade restrictions and export requirements. Violations of these laws and regulations could result in fines, criminal sanctions against our officers, our employees, or us and may result in prohibitions on the conduct of our business. Any such violations could also result in prohibitions on our ability to offer our products and services in one or more countries and could materially damage our reputation, our ability to attract and retain employees, our business and our operating results.

Our operations (particularly in those countries with developing economies) are also subject to risks of violations of laws prohibiting improper payments and bribery, including the European Union Anti-Corruption Act, U.K. Bribery Act, U.S. Foreign Corrupt Practices Act and similar regulations in other jurisdictions. Although we have implemented policies and procedures designed to ensure compliance with these laws, our employees, contractors, and agents may take actions in violation of such policies. Any such violations, even if prohibited by our policies, could subject us to civil or criminal penalties or otherwise have an adverse effect on our business and reputation.

Legal Proceedings

From time to time, we may be subject to various claims or legal, arbitration or administrative proceedings that arise in the ordinary course of our business. We are currently not a party to any legal, arbitration or administrative proceedings which, in the opinion of our management, may have or have had in the recent past, significant effects on our business, financial condition or results of operations, including governmental proceedings pending or known to be contemplated.

Insurance

We maintain comprehensive business liability insurance coverage (*Betriebshaftpflichtversicherung* “*Compact-Firmenversicherung*”) for our business operations. In addition, we have obtained directors and officers liability insurance, which covers expenses, capped at a certain amount, that our Management and Supervisory Board members and our executive managers may incur in connection with their conduct as members of our Management and Supervisory Boards or executive managers. We also maintain insurance policies on our 3D printers, a group insurance policy for our employees covering occupational accidents, car insurance policies and a legal expenses insurance policy. We consider the insurance coverage we have to be adequate in light of the risks we face.

Geographic Information

Our revenues by geographic region for the year ended December 31, 2019 were EMEA 46%, Asia Pacific 26% and Americas 29%, as compared to EMEA 56%, Asia Pacific 21% and Americas 23% for the same period in 2018. In 2017, our revenues by geographic region were EMEA 64%, Asia Pacific 11% and Americas 25%. See “Item 5. Operating and Financial Review and Prospects—A. Operating Results.”

C. ORGANIZATIONAL STRUCTURE

Our corporate structure includes voxeljet AG (formerly Voxeljet Technology GmbH) and the three wholly-owned subsidiaries voxeljet America Inc. (*voxeljet America*), voxeljet UK Ltd. (*voxeljet UK*) and voxeljet India Pvt. Ltd (*voxeljet India*). Additionally it includes voxeljet China Co., Ltd. (*voxeljet China*) where we held a shareholding of 70.00% interest.

voxeljet China was established on April 11, 2016 and is located in the city of Suzhou, near Shanghai. Within the contribution of a lease contract on March 1, 2019 which includes 36 months free of rent, which has been negotiated by our joint venture partner Suzhou Meimai Fast Manufacturing Technology Co., Ltd, (“Meimai”), Meimai has increased their shareholding from 4.175% to 30.0% as it has been agreed within the joint venture contract. Therefore our shareholding in voxeljet China Co., Ltd. decreased to 70.00% on March 1, 2019.

On February 5, 2014, our subsidiary, voxeljet America Inc. was incorporated in Delaware. voxeljet America Inc. is headquartered near Detroit, Michigan and conducts our North American operations. We began printing on-demand parts at the facility in the first quarter of 2015.

On October 1, 2014, we completed the acquisition of all outstanding shares of Propshop (Model Makers) Limited (“Propshop”) which became voxeljet UK Ltd, headquartered in Milton Keynes.

On November 30, 2015, we established our subsidiary voxeljet India Pvt. Ltd to pursue opportunities in the industrial 3D printing market in India. voxeljet India is headquartered and registered in the city of Pune, a large automotive and manufacturing center near Mumbai. Since the fourth quarter of 2019 the office is located in the city of Mumbai.

D. PROPERTY, PLANTS AND EQUIPMENT

At December 31, 2019, we owned/leased the following five properties worldwide:

Location	Primary Usage:	Area (Sq. Feet)
EMEA		
Friedberg, Germany	Headquarters, production space, office space	135,380
Milton Keynes, UK	Production space, office space	10,021
Asia Pacific		
Mumbai, India	Office space	20
Suzhou, China	Production space, office space	78,000
Americas		
Canton, Michigan, USA	Production space, office space	50,000

We believe that our existing facilities are adequate for our current and foreseeable requirements. The facilities in Friedberg, Germany are owned by voxeljet, while the facilities in the UK, India, China and the U.S. are leased. On March 1, 2019, our Chinese subsidiary moved into a new building which provides us with more than 78,000 square feet of production space, storage as well as office space. Our service center in the United Kingdom has been closed down in the fourth quarter of 2019 in the course of a restructuring and consequently the lease of the Milton Keynes facility has been terminated early and will end in May 2020. In March 2020 we registered a first rank land charge amounting to € 10.0 million on our land and facility located in Friedberg (Germany) Paul-Lenz-Straße, 1a as collateral in favor of the EIB, in connection with the signing of a waiver with the EIB.

ITEM 4A. UNRESOLVED STAFF COMMENTS

None.

ITEM 5. OPERATING AND FINANCIAL REVIEW AND PROSPECTS

You should read the following discussion and analysis of our financial condition and results of operations in conjunction with the section entitled “Item 3. Key Information—A. Selected Financial Data” and our audited financial statements and the related notes thereto included elsewhere in this annual report. In addition to historical financial information, the following discussion contains forward-looking statements that reflect our plans, estimates and opinions. Our actual results could differ materially from those discussed in these forward-looking statements. Factors that could cause or contribute to these differences or cause our actual results or the timing of selected events to differ materially from those anticipated in these forward-looking statements include those set forth under “Item 3. Key Information—D. Risk Factors,” “Special Note Regarding Forward Looking Statements” and elsewhere in this annual report.

A. AUDIT COMMITTEE INVESTIGATION

As previously disclosed in our public filings with the SEC, on March 12, 2020, our Audit Committee was informed by KPMG, the Company’s independent registered public accounting firm, that KPMG concluded that its reviews of both the second and third quarter 2019 interim financial statements were not complete because additional information regarding a breach of the Leverage Covenant in the Finance Contract was not made available to KPMG until first quarter 2020. As a result, the interim financial statements for the second and third quarter 2019 previously filed on Form 6-K on August 15, 2019 and November 14, 2019 (the “Prior Form 6-K Filings”), respectively, could no longer be relied upon.

KPMG informed the Audit Committee that the breach of the Leverage Covenant in the Finance Contract at June 30, 2019 would trigger additional disclosure requirements per International Accounting Standards (IAS) 34 for the Company’s second and third quarter 2019 interim financial statements, including a potential reclassification of the Loan from long term to short term indebtedness and disclosure within the interim financial statements of the breach including risks and uncertainties of the business which are not currently disclosed within the Prior Form 6-K Filings. KPMG determined that if more information regarding the breach of the Leverage Covenant in the Finance Contract was made available during the performance of their review procedures for the second and third quarter 2019, additional procedures

would have been performed by KPMG to complete their review of the second and third quarter 2019 interim financial statements included in the Prior Form 6-K Filings.

KPMG also expressed the view that the breach of the Leverage Covenant should have been considered by the Company in its going concern assessments and related disclosures for the second and third quarter 2019 interim financial statements, respectively.

KPMG informed the Audit Committee that it was made aware of additional information in March 2020 including meeting minutes in relation to meetings, which occurred during the second and third quarter 2019 that had not been provided to KPMG during the time of KPMG's reviews and before their year-end audit. KPMG raised a question about whether management made misrepresentations to KPMG when management did not provide the signed records of these meetings to KPMG during the relevant quarterly reviews before the filing of the Prior Form 6-K Filings. KPMG also has raised a question about the extent to which information relevant to these matters was appropriately and timely shared with KPMG by the Company and whether any misrepresentation or illegal act occurred.

The Audit Committee discussed these matters with KPMG, and, as previously disclosed, determined to conduct the Audit Committee Investigation and self-reported on these matters to the Enforcement Division of the SEC.

The Audit Committee Investigation concluded in April 2020. The Audit Committee did not find fraud or intentional misconduct by the Company's management or accounting personnel. However, the Audit Committee did conclude that KPMG was not sufficiently informed of the status of the EIB loan or the Company's months of discussions and negotiations with EIB in connection therewith. In addition, the Audit Committee did note certain weaknesses and a degree of informality with respect to certain processes pertaining to aspects of the review and tracking of financial reporting and disclosure. The Audit Committee proposed certain recommendations, including implementing additional training with respect to the Company's reporting and auditing obligations and requirements and developing and documenting an enhanced risk assessment process and internal controls system in corresponding areas.

Following the completion of the Audit Committee Investigation, management and the Audit Committee are working together to develop a remediation plan for implementation in fiscal year 2020. See "Item 15. Controls and Procedures" for a discussion of material weaknesses in internal control over financial reporting, identified during the current fiscal year.

In connection with the matters subject to the Audit Committee investigation, the Company does not anticipate a restatement or adjustment of any audited or unaudited, filed or previously announced, financial statements except as included in this Form 20-F.

B. OPERATING RESULTS

Overview

We are a leading provider of high-speed, large-format 3D printers and on-demand parts services to industrial and commercial customers. Our 3D printers employ a powder binding, additive manufacturing technology to produce parts using various material sets, which consist of particulate materials and proprietary chemical binding agents. We offer our customers the highest volumetric output rate in the industry due to the combination of our large build boxes and print speeds. We provide our 3D printers and on-demand parts services to industrial and commercial customers serving the automotive, aerospace, art and architecture, engineering and consumer product end markets.

We currently offer eight different 3D printer platforms, with build boxes that range from 300 × 200 × 150 millimeters to 4,000 X 2,000 X 1,000 millimeters and various print speeds, which produce volumetric output rates ranging from 0.4 liters per hour to 156.0 liters per hour. All of our platforms support our commercialized material sets, sand and plastics, along with their respective proprietary chemical binding agents. We develop our material sets according to the needs of our industrial and commercial customers, and we are currently in varying stages of developing new material sets, including shell molding and chromite sands, PMMA-based plastics, ceramics, silicon carbide, tungsten carbide, wood powder and cement.

We believe that our innovations in 3D printers will continue to increase customer adoption of our additive manufacturing technology in industrial and commercial applications.

[Table of Contents](#)

Our business is divided into two segments: Systems and Services.

In our Systems segment, we focus on the development, production and sale of 3D printers. In addition, we sell refurbished 3D printers which were produced for and used in our Services segment. Before these 3D printers are sold, they are fully refurbished and a new printhead is installed. We also provide consumables, including particulate materials and proprietary chemical binding agents, maintenance contracts, extended warranty contracts and spare parts to our customers.

In our Services segment, we print on-demand custom parts for our customers. At our service centers, we create parts, molds, cores and models based on designs produced using 3D computer-aided design, or CAD, software.

We sold our first 3D printer in 2002 and commenced our on-demand parts services business in 2003. As of December 31, 2019, we had an installed base of 188 printers worldwide, and we operated service centers in Germany, the United States and China. Our service center in the United Kingdom has been closed down in the fourth quarter of 2019 in the course of a restructuring and consequently the lease of the Milton Keynes facility has been terminated early and will end in May 2020. voxeljet UK will expand its sales team and will focus on selling 3D printed parts and 3D printers.

Our revenues were € 24.6 million, € 26.0 million, and € 23.2 million for the years ended December 31, 2019, 2018, and 2017, respectively.

Our net loss increased by € 5.4 million to a net loss of € 14.2 million in 2019 compared to a loss of € 8.8 million in 2018. In 2018 our net loss increased by € 0.2 million to a net loss of € 8.8 million compared to a loss of € 8.6 million in 2017.

Seasonality

Historically, our results of operations have been subject to seasonal factors. Purchases of our 3D printers often follow a seasonal pattern owing to the capital budgeting cycles of our customers. Generally, 3D printer sales are higher in our second and fourth fiscal quarters than in our first and third fiscal quarters. Sales in our Services segment generally are not affected by seasonality. See “Item 3. Key Information—D. Risk Factors—Risks Related to Our Business and Industry—Our revenues and operating results may fluctuate.”

Currency

As of December 31, 2019, we had operations in Germany, the United Kingdom, the United States, China and India. As a result, our revenue and earnings have exposure to a number of currencies, primarily the Euro, the U.S. dollar, the British Pound Sterling and the Chinese renminbi. As our presentation currency is the Euro, and the functional currencies of the businesses located outside of the Europe are their local currencies, the results of the businesses located outside of Europe must be translated each period to Euros. The financial statements of foreign subsidiaries are translated using the concept of the functional currency in accordance with IAS 21. The assets and liabilities of foreign subsidiaries are translated at the spot rate at the end of the period, while their income statement items are translated at average exchange rates for the respective periods. All resulting exchange differences are recognized in other comprehensive income. Gains and losses on foreign currency transactions primarily due to intercompany loans given to our subsidiaries are shown within other operating income and other operating expenses, respectively, in the consolidated statement of comprehensive loss. This calculation may differ from similarly titled measures used by other companies and, accordingly, the changes excluding the effect of foreign currency translation are not meant to substitute for changes in recorded amounts presented in conformity with IFRS nor should such amounts be considered in isolation.

We do not manage our foreign currency exposure in a manner that would eliminate the effects of changes in foreign exchange rates. Therefore, changes in exchange rates between these foreign currencies and the Euro will affect our revenues, cost of goods sold, and operating margins, and could result in exchange losses in any given reporting period.

Growth Strategy

Our business strategy focuses on (i) growing our Services segment in order to print more parts for our existing customers and gain new customers in Europe, Asia Pacific and Americas and (ii) using our knowledge and market position to increase sales of our 3D printers in the Systems segment. Our growth strategy is also dependent in part on continuing our investment in research and development activities, which should enable us to meet the needs of our target customers through the development of new material sets and 3D printers with faster print speeds. Expanding our business to realize our growth strategy may require additional investments of capital from time to time, and our existing sources of cash and any funds generated from operations may not provide us with sufficient capital. For various reasons additional financing may not be available when required or may not be available on terms favorable to us. If we fail to obtain adequate cash sources on a timely basis or if funds cannot be obtained at reasonable costs, we may not be able to achieve our planned rate of growth, which will adversely affect our results of operations.

We intend to develop our customer base internationally, so that our revenues are not dependent on sales to any one region. We also seek to grow both our Systems and Services segments so that we are not overly reliant on either segment. We believe that this strategy will help to offset some of the variability in the Systems segment, which can be more susceptible to macroeconomic trends.

Outlook

We believe that interest in additive manufacturing is increasing as a result of increased commercialization of 3D printers and recent media attention worldwide. We occupy a defined space in the additive manufacturing market because of the size of our machines and their ability to print industrial products from qualified industrial materials. While our 3D printers may differ from those of many other additive manufacturing companies, we expect an increase in additive manufacturing to generally have a positive effect on the public's awareness of our industry.

Furthermore, we believe that additive manufacturing provides several advantages over traditional design and manufacturing processes, including:

- elimination of design constraints;
- reduced cost of complexity;
- mass customization;
- reduced time to market; and
- cost effective short run production.

There are a number of available additive manufacturing technologies, including powder binding, inkjet, fused deposition modeling, stereolithography and selective laser sintering. These technologies differ on the basis of accuracy, surface quality, variety and properties of consumables, capacity, speed, color variety, transparency and the ability to print multiple materials, among other factors. Our 3D printers employ a powder binding technology to produce parts using various material sets. Powder binding is a process in which layers of powder are bonded by a liquid agent that is deposited through a printhead. We believe this process has the fastest build speeds and the lowest materials cost relative to other additive manufacturing technologies.

Assuming that there is no prolonged or recurring incidence of the COVID-19 crisis, we believe that our investments in additional capacity in continental Europe and service centers in the United States and China should position us to generate growth in our Services segment in the future.

We also expect to spend significant time and resources mitigating the impact of COVID-19, remediating material weaknesses in our internal controls over financial reporting, negotiating with the EIB over the amendment of financial covenants and the potential drawing down of tranche B as well as cooperating with any review by our regulators, and working with the NYSE to regain compliance with the NYSE listing rules.

Key Measures of Our Business

We use several financial and operating metrics to measure our business. We use these metrics to assess the progress of our business, make decisions on where to allocate capital, time and technology investments, and assess the longer-term performance of our marketplace. The key metrics are as follows:

Revenues

Our revenues are generated primarily by sales of our new or used and refurbished 3D printers, consumables and custom 3D printed parts produced at our service centers. We operate in two segments: Systems and Services. The Systems segment derives its revenues from the sale of new or used and refurbished 3D printers and products and services related to our 3D printers, including consumables, which include particulate materials and proprietary chemical binding agents, maintenance contracts and spare parts. Systems revenue also includes revenues associated with the leasing of 3D printers to customers; however, revenues related to the leasing of 3D printers is not material. Within the Systems segment, we also report revenues from tailoring and development services. The Services segment derives its revenues from the on-demand printing of parts at our service centers.

Our revenues are influenced by:

- global macroeconomic conditions;
- the adoption rate of our 3D printers and material sets;
- our ability to develop new products and technologies that address the increasingly sophisticated and varied needs of prospective end-users, particularly with respect to the physical properties of print materials and other consumables;
- the capital expenditure budgets of our potential customers;
- the amount of design and manufacturing activity; and
- the adoption of additive manufacturing technology in various industries.

Sales of our 3D printers, particularly our higher-priced systems, typically involve long sales cycles, are subject to seasonality and can be difficult to forecast. Because each of our printers can represent a significant amount of revenues, a delay in a purchasing decision, our production schedule or the shipment of a printer can have a material impact on our periodic reporting of revenues.

From time to time, refurbished 3D printers which have been operating at the Company's service centers are routinely sold to customers. Before these 3D printers are sold, they are generally fully refurbished, a process which includes the installation of a new printhead. On average, these refurbished printers have been operating within the service center for 1.5 to 2.5 years prior to their sale. The proceeds from the sale of such refurbished 3D printers are recognized as Systems revenues.

Gross Profit

Our gross profit and gross profit margin for our Systems and Services segments are mainly influenced by materials, labor and energy costs. In particular, the gross profit margin in our Systems segment on sales of our 3D printers also depend on the type and status of the sold products. Sales of refurbished printers manufactured by us typically generates lower gross profits compared to sales of new 3D printers.

EBITDA

Our EBITDA (earnings before interest, taxes, depreciation and amortization) is mainly influenced by the gross profit from our Systems segment and Services segment as well as from the operating expenses from the functions research and development, administration and sales and marketing. In addition, other operating expense and other operating income including gains and losses from foreign exchange transactions and have an impact on EBITDA. The

[Table of Contents](#)

gross profit from our Systems segment is mainly driven by materials, labor and energy costs. The gross margin drivers for our Services segment relate to revenues, materials, labor and energy costs as well as facility costs. Costs for the non-productive functions is influenced primarily by labor. Research and development expenses are partially driven by materials. One of the main drivers of expenses for the administrative function is legal fees as well as accounting and auditing fees while sales and marketing expenses are also influenced by commissions for sales agents.

Critical Accounting Policies and Significant Estimates

Please refer to “Note 5. Critical accounting judgment and key sources of estimation and uncertainty in item 18.”

Statements of Comprehensive Loss Data

Year Ended December 31, 2019 compared to Year Ended December 31, 2018

The following table sets forth certain statements of comprehensive loss data both on an actual basis and as a percentage of revenues for the periods indicated:

	Year Ended December 31,				Period-over-period change (€ in thousands)
	2019		2018 ⁽ⁱ⁾		
	Amount (€ in thousands)	Percentage of revenues	Amount (€ in thousands)	Percentage of revenues	
Revenues	€ 24,602	100%	€ 26,009	100%	€ (1,407)
Cost of sales	17,426	70.8	16,864	64.8	562
Gross profit	7,176	29.2	9,145	35.2	(1,969)
Selling expenses	7,118	28.9	7,332	28.2	(214)
Administrative expenses	6,952	28.3	5,587	21.5	1,365
Research and development expenses	7,212	29.3	6,334	24.4	878
Other operating expenses	945	3.8	751	2.9	194
Other operating (income)	(2,143)	8.7	(1,297)	5.0	(846)
Operating loss	(12,908)	52.5	(9,562)	36.8	(3,346)
Finance expense	1,458	5.9	1,143	4.4	315
Finance (income)	(144)	0.6	(1,952)	7.5	1,808
Financial result	1,314	5.3	(809)	(3.1)	2,123
Net loss before income taxes	(14,222)	57.8	(8,753)	33.7	(5,469)
Income taxes	(9)	0.0	(11)	0.0	2
Net Loss	€ (14,231)	57.8%	€ (8,764)	33.7%	€ (5,467)

⁽ⁱ⁾ The Company has initially applied IFRS 16 as of January 1, 2019, using the modified retrospective approach. Under this approach, comparative information is not restated and the cumulative effect of initially applying IFRS 16 is recognized in retained earnings at the date of initial application. For further information, see Part III, Item 18. Financial Statements, Note 3 “Summary of significant accounting policies” to the consolidated financial statements.

Summary

Our revenues decreased by € 1.4 million, or 5%, to € 24.6 million in 2019 from € 26.0 million in 2018. This was due to the decrease in revenues from our Services segment amounting to € 2.6 million, partially offset by an increase in Systems revenues of € 1.2 million year-over-year.

Our gross profit decreased by € 1.9 million from € 9.1 million in 2018 to € 7.2 million in 2019. This was due to a significant decrease in gross profit of the Services segment of € 2.5 million mainly related to the decline in revenues. In contrast, the gross profit of the Systems segment increased by € 0.6 million. In our Services segment, we received significant lower gross profit contribution from the German operation due to a material decline in Services revenues. Within the Services segment, our subsidiaries voxeljet America, voxeljet UK and voxeljet China also contributed lower gross profits. voxeljet UK and voxeljet China generated negative gross profit. The negative gross profit from voxeljet UK was mainly related to restructuring charges amounting to € 0.3 million in 2019. In the third quarter of 2019, we decided to consolidate 3D printing process to serve all customers in Europe from the German service center and

[Table of Contents](#)

restructure the voxeljet UK entity. The restructuring included reduction in headcount and disposal of certain assets. The lease of the Milton Keynes facility will be terminated early and will end in 2020. Our consolidated gross profit margin was 29% in 2019 compared to 35% in 2018.

Our operating loss increased by € 3.3 million to a loss of € 12.9 million in 2019 from a loss of € 9.6 million in 2018. This was mainly due the significant decrease in gross profit of € 1.9 million in combination with higher operating expenses related to research and development and administration with an increase of € 0.9 million and € 1.4 million, respectively, while selling expenses slightly decreased from € 7.3 million to € 7.1 million. The net impact of the year over year changes in other operating expenses and other operating income was € 0.7 million. Operating loss was impacted by the restructuring of voxeljet UK with an overall impact of € 0.6 million, thereof € 0.3 million in cost of sales and the remainder in administrative expenses, respectively.

In addition, management announced a restructuring program for the German operation in November 2019 and commenced negotiations with the workers' council in December 2019. This program includes the reduction of headcount mainly in the Systems segment in order to adjust the capacity to the current and forecasted demand based on our order backlog, hotleads and opportunities. The program further considers minor adjustments of headcount within the segment Services, as well as the functions research and development, sales and marketing and administration. In the first step, the program includes a voluntary program, which offers employees certain compensation for leaving the Company through a cancellation agreement, based on the employee's salary, seniority, special protections and number of children. If an employee makes the decision to leave the Company within one week after the Company has offered the cancellation agreement, the employee receives a special incentive. The voluntary program has started on February 17, 2020 and has a duration of two months. As soon as the voluntary program ends, we will assess whether the desired headcount reduction has been realized and the pursued cost savings have been implemented. If not, we will execute further redundancies and there will be a social compensation plan. The voluntary program has been agreed with the workers' council in a company agreement. On April 16, 2020, the voluntary program expired with the result that the desired reduction in headcount has been completely achieved through the voluntary program, and therefore the cost saving targets have been fully implemented. As a result, currently no compulsory redundancies are required. The impacts on fiscal year 2019 profit and loss of the recognition of the restructuring provision amounts to kEUR 453 in total and relates to kEUR 242 for the segment Systems, kEUR 45 for administration, kEUR 77 for sales and marketing, kEUR 29 for research and development and kEUR 60 for the segment Services. We expect major cost savings for fiscal year 2021 amounting to between € 1.2 million and € 1.4 million, while the net savings for fiscal year 2020 are expected to be minor.

Revenues by Segment

The table below sets forth the change in revenues by segment from 2018 to 2019:

	Year Ended December 31,		period-over-period change
	2019	2018	
	(€ in thousands)		
Systems	€ 13,454	€ 12,248	€ 1,206
Services	11,148	13,761	(2,613)
Total Revenues	€ 24,602	€ 26,009	€ (1,407)

Revenues from the Systems segment for 2019 were € 13.5 million, representing a 10.7% increase over revenues of € 12.2 million in 2018. The Company sold thirteen new and six used and refurbished 3D printers during the year ended December 31, 2019 compared to fourteen new and five used and refurbished 3D printers in the prior year period. In 2019 we sold a higher number of larger-scale printers which generate higher revenue. Systems revenues also include all Systems-related revenues from consumables, spare parts and maintenance. Revenues from those Systems-related business significantly increased, reflecting the higher installed base of 3D printers in the market and the associated growth in aftersales activities.

Revenues from the Services segment for 2019 were € 11.1 million, which represents a decrease of € 2.7 million or 19.6% over revenues of € 13.8 million in 2018. This decrease was mainly due to a significant decrease in revenue contribution from the German operation, reflecting the slowdown of the economy in Western Europe mainly related to the automotive industry. Revenue contribution from our subsidiary voxeljet America was almost flat, while voxeljet UK

[Table of Contents](#)

contributed slightly lower revenues. The overall decline in the consolidated revenues was partially offset by an increase in revenue contributions from voxeljet China. This increase from our Chinese service center was mainly related to a growing market penetration in the Asian sales region, which is accompanied by a larger customer base.

Revenues by Geographic Region

The table below sets forth the change in revenues by geographic region from 2018 to 2019:

	Year Ended December 31, 2019		Year Ended December 31, 2018	
	Revenues	Percentage	Revenues	Percentage
	(€ in thousands)		(€ in thousands)	
EMEA	11,265	45.8%	14,673	56.4%
Asia Pacific	6,302	25.6	5,450	21.0
Americas	7,035	28.6	5,886	22.6
Total	24,602	100.0%	26,009	100.0%

We generated more than 45% of our revenues in the EMEA region for the year ended December 31, 2019 with a declining relative proportion of our revenues as compared to the year ended December 31, 2018. The portion of revenues in the Asia Pacific region increased due to higher printer sales, but also due to increased sales from our Services segment. The growing revenues related to system sales but also related to 3D printed parts within the Asia Pacific region reflects the growing interest in the market in our products as well as the opportunities generated by our voxeljet China subsidiary. Revenue in the region Americas increased year over year mainly due to higher sales from Systems-related revenues.

Gross Profit and Gross Profit Margin

Total gross profit for 2019 significantly decreased, which was related to the Services segments, partially offset by the Systems segment. Also, total gross profit margin significantly decreased in both segments, Systems and Services. Overall, our gross profit margin decreased from 35% in 2018 to 29% in 2019.

The table below sets forth gross profit and gross profit margin for our Systems and Services segments for the presented periods:

	Year Ended December 31, 2019		Year Ended December 31, 2018⁽ⁱ⁾		Period-over-period change
	Amount	Gross margin as percentage of relevant segment revenues	Amount	Gross margin as percentage of relevant segment revenues	
	(€ in thousands)		(€ in thousands)		(€ in thousands)
Systems	€ 4,284	31.8%	€ 3,708	30.3%	€ 576
Services	2,892	25.9	5,437	39.5	(2,545)
Total	€ 7,176	29.2%	€ 9,145	35.2%	€ (1,969)

⁽ⁱ⁾ The Company has initially applied IFRS 16 as of January 1, 2019, using the modified retrospective approach. Under this approach, comparative information is not restated and the cumulative effect of initially applying IFRS 16 is recognized in retained earnings at the date of initial application. For further information, see Part III, Item 18. Financial Statements, Note 3 “Summary of significant accounting policies” to the consolidated financial statements.

Gross profit for our Systems segment increased to € 4.3 million in 2019 from € 3.7 million in 2018, while the gross profit margin was almost flat, with a 1.5% increase to 31.8% in 2019 from 30.3% in 2018. This was mainly due to higher gross profit and gross profit margin from 3D printer sales, which was influenced by a more favorable product mix. We sold more larger-scale platforms, which usually provide higher gross profits and gross profit margins. Gross profit margin from system-related goods and services, including consumables, spare parts and maintenance, significantly decreased in spite of increased revenues. This was mainly related to the restructuring charges recorded in the fourth quarter of 2019 related to the restructuring program at the German operation resulting in a negative impact of € 0.2 million and also weaker gross profit contribution from maintenance contracts which fluctuate over time.

Gross profit for our Services segment in 2019 amounted to € 2.9 million, and therefore significantly decreased by € 2.5 million compared to 2018. The gross profit margin decreased from 39.5% in 2018 to 25.9% in 2019. This was mainly related to weaker gross profit and gross profit margin contributions from our service centers in Germany, the UK and the U.S. Gross profit and gross profit margin from the German service center was impacted by the significant decrease in revenues accompanied by a lower utilization due to the slowdown of the economy in Western Europe mainly related to the automotive industry. The contributions from voxeljet UK were impacted by restructuring charges of € 0.3 million. In addition, gross profit and gross profit margin from voxeljet America significantly decreased due to higher depreciation expenses related to a VX4000 system, which was capitalized in the third quarter of 2018 as well as higher personnel expenses related to salary increases.

Operating Expenses

As shown in the table below, total operating expenses increased to € 20.1 million in 2019 compared to € 18.7 million in 2018, and increased to 81.6% of revenues in 2019 compared to 77.5% in 2018. Administrative expenses increased by € 1.4 million from € 5.6 million in 2018 to € 7.0 million in 2019. This was mainly due to higher consulting fees also related to the Audit Committee Investigation. Administrative expenses were also impacted by the restructuring charges at voxeljet UK and at voxeljet Germany amounting to € 0.3 million and € 0.1 million, respectively. In contrast to this, selling expenses decreased from € 7.3 million in 2018 to € 7.1 million in 2019, mainly due to distribution expenses like shipping and packaging. Shipping and packaging expenses as a main driver of the selling expenses could vary depending on quantity and types of products, as well as the destinations where those goods are being delivered. The year over year decrease is mainly due to lower distribution expenses corresponding to the decrease in revenues. The increase in research and development expenses to € 7.2 million in 2019 compared to € 6.3 million in 2018 was mainly due to higher labor costs related to a higher number of employees supporting in various existing and future research and development projects. In addition we incurred higher expenses for external services within our research and development function. The impact on the research and development function related to the restructuring program regarding the German operation amounted to € 0.1 million.

	Year Ended December 31,				Period-over-period change (€ in thousands)
	2019		2018		
	Amount (€ in thousands)	Percentage of revenues	Amount (€ in thousands)	Percentage of revenues	
Operating expenses					
Selling expenses	€ 7,118	28.9%	€ 7,332	27.9%	€ (214)
Administrative expenses	6,952	28.3	5,587	22.1	1,365
Research and development expenses	7,212	29.3	6,334	23.9	878
Other operating expenses	945	3.8	751	8.0	194
Other operating (income)	(2,143)	(8.7)	(1,297)	(4.3)	(846)
Total	€ 20,084	81.6%	€ 18,707	77.5%	€ 1,377

Administrative expenses mainly included personnel expenses as well as consulting fees also related to the Audit Committee Investigation. The majority of our selling expenses related to personnel expenses and distribution expenses including freight and commissions for sales agents.

Other operating income and expenses

Other operating expenses for the year ended December 31, 2019 were € 0.9 million compared to € 0.8 million in the prior year period. This is mainly due to higher losses from foreign currency translations. Foreign currency losses amounted to € 0.9 million for the year ended December 31, 2019, compared to € 0.5 million in the same period in 2018. This was partially offset by lower impairment losses on trade receivables with a year-over-year impact of € 0.1 million positive.

Other operating income was € 2.1 million for the year ended December 31, 2019 compared to € 1.3 million in the prior year period. The increase was mainly due to higher gains from foreign currency transactions of € 1.7 million in 2019 compared to € 0.8 million in 2018.

The changes in foreign currency losses and gains were primarily driven by the valuation of the intercompany loans granted by the parent company to our UK and U.S. subsidiaries.

Operating Loss

Operating loss and operating loss as a percentage of total revenues in 2019 and 2018 were as follows:

	Year Ended December 31,				Period-over-period change (€ in thousands)
	2019		2018		
	Amount (€ in thousands)	Percentage of revenues	Amount (€ in thousands)	Percentage of revenues	
Operating loss	€ (12,908)	-52.5%	€ (9,562)	-36.8%	€ (3,346)

⁽ⁱ⁾ The Company has initially applied IFRS 16 as of January 1, 2019, using the modified retrospective approach. Under this approach, comparative information is not restated and the cumulative effect of initially applying IFRS 16 is recognized in retained earnings at the date of initial application. For further information, see Part III, Item 18. Financial Statements, Note 3 “Summary of significant accounting policies” to the consolidated financial statements.

We had an operating loss of € 12.9 million in 2019, an increase of € 3.3 million compared to an operating loss of € 9.6 million in 2018. This is mainly due to the significant decrease in gross profit amounting to € 1.9 million, accompanied by higher operating expenses related to research and development as well as administration, which increased by € 0.9 million and € 1.4 million, respectively. This was partially offset by a positive net impact from other operating expenses and other operating income amounting to € 1.2 million in 2019 compared to € 0.5 million in 2018.

Financial Result

	Year Ended December 31,	
	2019	2018
	(€ in thousands)	
Interest expense	1,458	1,143
Interest income	(144)	(1,952)
Financial result	1,314	(809)

We had a financial result of € 1.3 million negative in 2019, a decrease of € 2.1 million compared to a financial result of € 0.8 million positive in 2018. This was mainly due to higher interest expense from the revaluation of the derivative financial instruments related to the EIB loan of € 0.2 million for 2019, compared to a positive impact and therefore an interest income of € 1.9 million in 2018. Interest expense included interest from long term debts with other financial institutions which amounted to € 1.0 million in 2019, compared to € 0.9 million in 2018.

Year Ended December 31, 2018 compared to Year Ended December 31, 2017

The following table sets forth certain statements of comprehensive loss data both on an actual basis and as a percentage of revenues for the periods indicated:

	Year Ended December 31,				Period-over-period change (€ in thousands)
	2018		2017 ⁽ⁱ⁾		
	Amount (€ in thousands)	Percentage of revenues	Amount (€ in thousands)	Percentage of revenues	
Revenues	€ 26,009	100%	€ 23,178	100%	€ 2,831
Cost of sales	16,864	64.8	13,853	59.8	3,011
Gross profit	9,145	35.2	9,325	40.2	(180)
Selling expenses	7,332	28.2	6,474	27.9	858
Administrative expenses	5,587	21.5	5,129	22.1	458
Research and development expenses	6,334	24.4	5,528	23.9	806
Other operating expenses	751	2.9	1,844	8.0	(1,093)
Other operating (income)	(1,297)	5.0	(1,001)	4.3	(296)
Operating profit (loss)	(9,562)	36.8	(8,649)	37.3	(913)
Finance expense	1,143	4.4	190	0.8	953
Finance (income)	(1,952)	7.5	(365)	1.6	(1,587)
Financial result	(809)	(3.1)	(175)	(0.8)	(634)
Net loss before income taxes	(8,753)	33.7	(8,474)	36.6	(279)
Income taxes	(11)	0.0	(80)	0.3	69
Net Loss	€ (8,764)	33.7%	€ (8,554)	36.9%	€ (210)

⁽ⁱ⁾ Comparative figures for the year ended December 31, 2017 were restated for immaterial errors. For further information, see Form 20-F filed with the SEC on March 28, 2019, Part III, Item 18. Financial Statements, Note 6 “Correction of errors” to the consolidated financial statements.

Summary

Our revenues increased by € 2.8 million, or 12%, to € 26.0 million in 2018 from € 23.2 million in 2017. This was mainly due to the increase in revenues from our Services segment amounting to € 2.1 million, mainly due to contributions from the German operation, voxeljet America as well as voxeljet UK. Systems revenues increased by € 0.7 million year-over-year, mainly related to an increase in the number of printer sales.

Despite the increase in revenues, we were not able to improve our gross profit, which shows a slight decrease from € 9.3 million in 2017 to € 9.1 million in 2018. This decrease of € 0.2 million was due to the decrease in gross margin of both segments Systems and Services. In our Services segment, we received higher gross profit contribution from our subsidiaries voxeljet America and voxeljet UK. Regarding the German operation and voxeljet China, gross profit contribution decreased. Gross profit at the German operation decreased due to the replacement of a higher number of printheads of our 3D printers running in our German service center. Gross profit from voxeljet America and voxeljet UK improved due to a higher utilization rate of our service centers. The higher utilization regarding our American subsidiary was mainly related to a volume contract which started in July 2018 with a revenue contribution of € 1.1 million. The decrease of gross profit within the System segment was related to weaker gross profit from 3D printer sales, while gross profit contribution from system-related goods and services almost remained the same. Our consolidated gross profit margin was 35% in 2018 compared to 40% in 2017.

Our operating loss increased by € 1.0 million to a loss of € 9.6 million in 2018 from a loss of € 8.6 million in 2017. This is mainly due to higher operating expenses related to sales and marketing, administration and research and development with an increase of € 0.9 million, € 0.5 million and € 0.8 million, respectively, in combination with the slight decrease in gross profit of € 0.2 million. This was partially offset by lower other operating expenses and higher other operating income resulting in a positive net impact of € 1.4 million.

Revenues by Segment

The table below sets forth the change in revenues by segment from 2017 to 2018:

	Year Ended December 31,		period-over- period change
	2018	2017	
	(€ in thousands)		
Systems	€ 12,248	€ 11,534	€ 714
Services	13,761	11,644	2,117
Total Revenue	€ 26,009	€ 23,178	€ 2,831

Revenues from the Systems segment for 2018 were € 12.2 million, representing a 6.1% increase over revenues of € 11.5 million in 2017. The Company sold fourteen new and five used and refurbished 3D printers during the year ended December 31, 2018 compared to ten new and five used and refurbished 3D printers in the prior year period. In 2018 we sold a higher number of smaller printers which usually have a lower gross profit margin.

Revenues from the Services segment for 2018 were € 13.8 million, which represents an increase of € 2.2 million or 19.0% over revenues of € 11.6 million in 2017. This increase was mainly due to a higher revenue contribution from our subsidiary voxeljet America. The German operation and voxeljet UK also contributed higher revenues within this segment. This was partially offset by a lower revenue contribution by our service center of voxeljet China. The increase in revenue at our German service center is due to the robust economy in the European market. The growth in revenue at our American service center and UK service center resulted from an increasing market penetration in the respective sales regions which is accompanied by a larger customer base.

Revenues by Geographic Region

The table below sets forth the change in revenues by geographic region from 2017 to 2018:

	Year Ended December 31, 2018		Year Ended December 31, 2017	
	Revenues	Percentage	Revenues	Percentage
	(€ in thousands)		(€ in thousands)	
EMEA	14,673	56.4%	14,832	64.0%
Asia Pacific	5,450	21.0	2,526	10.9
Americas	5,886	22.6	5,820	25.1
Total	26,009	100.0%	23,178	100.0%

We generated more than 55% of our revenues in the EMEA region in the year ended December 31, 2018 with a declining relative proportion of our revenues as compared to the year ended December 31, 2017. The portion of revenues in the Asia Pacific region increased due to higher printer sales in 2018 when compared to 2017, which was partially offset by decreased sales from our Services segment. The growing revenues related to system sales within the Asia Pacific region reflects the growing interest in the market in our products as well as the opportunities generated by our subsidiary voxeljet China.

Gross Profit and Gross Profit Margin

Total gross profit for 2018 slightly decreased, which was related to both the Systems and Services segments, while total gross profit margin significantly decreased. The main drivers were the German operation as well as voxeljet China with decreases in both gross profit and gross profit margin. At the German operation, gross profit margin for Systems decreased due to a different product mix of systems sold in 2018 than in 2017. In 2018, we sold a higher number of smaller 3D printers, which usually have a lower gross profit margin. Gross profit margin for Services decreased at the German operation due to the replacement of a higher number of printheads of our 3D printers running in our German service center, especially for our largest systems. This was partially offset by improved gross profit and gross profit margin contributions from our U.S. subsidiary. voxeljet UK slightly improved both values, as well. Overall, our gross profit margin decreased from 40% in 2017 to 35% in 2018.

The table below sets forth gross profit and gross profit margin for our Systems and Services segments for the presented periods:

	Year Ended December 31, 2018		Year Ended December 31, 2017⁽ⁱ⁾		Period-over-period change
	Amount	Gross margin as percentage of relevant segment revenue	Amount	Gross margin as percentage of relevant segment revenue	
Systems	€ 3,708	30.3%	€ 4,258	36.9%	€ (550)
Services	5,437	39.5	5,067	43.5	370
Total	€ 9,145	35.2%	€ 9,325	40.2%	€ (180)

⁽ⁱ⁾ Comparative figures for the year ended December 31, 2017 were restated for immaterial errors. For further information, see Form 20-F filed with the SEC on March 28, 2019, Part III, Item 18. Financial Statements, Note 6 “Correction of errors” to the consolidated financial statements.

Gross profit for our Systems segment slightly decreased to € 3.7 million in 2018 from € 4.3 million in 2017, while the gross profit margin moderately declined, with a 6.6% decrease to 30.3% in 2018 from 36.9% in 2017. This was mainly due to lower gross profit and gross profit margin from 3D printer sales, which was influenced by a less favorable product mix. Gross profit margin from system-related goods and services, including consumables, spare parts and maintenance, remained almost flat. In 2018 we reduced the reserve for slow-moving inventory with a positive impact of € 0.4 million, compared to a positive impact of € 0.5 million in 2017.

Gross profit for our Services segment in 2018 amounted to € 5.4 million, and therefore increased slightly by € 0.3 million compared to 2017. The gross profit margin decreased from 43.5% in 2017 to 39.5% in 2018. This was mainly related to weaker gross profit contributions from the German service center as well as the Chinese service center. Gross profit margin for Services decreased at the German service center due to several replacements of printheads of our 3D printers. This was partially offset by improved contributions from voxeljet America and voxeljet UK. The gross profit margin from these two service centers improved gross margin due to a higher utilization rate of their equipment related to an increased number of orders. The higher utilization at our U.S. subsidiary was mainly related to a volume contract which began in July 2018 with a revenue contribution of € 1.1 million.

Operating Expenses

As shown in the table below, total operating expenses increased to € 18.7 million in 2018 compared to € 18.0 million in 2017, but decreased to 71.9% of revenues in 2018 compared to 77.5% in 2017. This increase was related to the increase in revenues. Administrative expenses increased by € 0.5 million from € 5.1 million in 2017 to € 5.6 million in 2018. This was mainly due to the significant increase in headcount resulting in higher personnel expenses. The increase in selling expenses from € 6.5 million in 2017 to € 7.3 million in 2018 was almost in line with the increase in revenues. The increase in research and development expenses from € 6.3 million in 2018 compared to € 5.5 million in 2017 was mainly due to higher labor costs related to salary increases and a higher headcount as well as a higher consumption of materials to support existing and future research and development projects.

In 2018, we continued to invest in research and development. Our research and development expenses amounted to 24.4% of our revenues in 2018. Therefore the ratio remained almost unchanged compared to 2017.

	Year Ended December 31,				
	2018		2017		Period-over-period change (€ in thousands)
	Amount	Percentage of revenues	Amount	Percentage of revenues	
(€ in thousands)		(€ in thousands)			
Operating expenses					
Selling expenses	€ 7,332	28.2%	€ 6,474	27.9%	€ 858
Administrative expenses	5,587	21.5	5,129	22.1	458
Research and development expenses	6,334	24.4	5,528	23.9	806
Other operating expenses	751	2.9	1,844	8.0	(1,093)
Other operating (income)	(1,297)	(5.0)	(1,001)	(4.3)	(296)
Total	€ 18,707	71.9%	€ 17,974	77.5%	€ 733

Administrative expenses mainly included personnel expenses as well as consulting fees. The majority of our selling expenses related to personnel expenses and distribution expenses including freight and commissions for sales agents.

Other operating income and expenses

Other operating expenses for the year ended December 31, 2018 were kEUR 751 compared to kEUR 1,844 in the prior year period. This is mainly due to lower losses from foreign currency translations. Foreign currency losses amounted to kEUR 511 for the year ended December 31, 2018, compared to kEUR 1,585 in the same period in 2017. The losses from foreign currency transactions were primarily driven by the valuation of the intercompany loans granted by the parent company to our U.S. and UK subsidiaries.

Other operating income was kEUR 1,297 for the year ended December 31, 2018 compared to kEUR 1,001 in the prior year period. The increase was mainly due to higher gains from foreign currency transactions of kEUR 794 in 2018 compared to kEUR 135 in 2017.

Operating Loss

Operating loss and operating loss as a percentage of total revenues in 2018 and 2017 were as follows:

	Year Ended December 31,				
	2018		2017 ⁽ⁱ⁾		Period-over-period change (€ in thousands)
	Amount	Percentage of revenues	Amount	Percentage of revenues	
(€ in thousands)		(€ in thousands)			
Operating loss	€ (9,562)	-36.8%	€ (8,649)	-37.3%	€ (913)

⁽ⁱ⁾ Comparative figures for the year ended December 31, 2017 were restated for immaterial errors. For further information, see Form 20-F filed with the SEC on March 28, 2019, Part III, Item 18. Financial Statements, Note 6 “Correction of errors” to the consolidated financial statements.

We had an operating loss of € 9.6 million in 2018, a decrease of € 1.0 million compared to an operating loss of € 8.6 million in 2017. This is mainly due to higher operating expenses related to sales and marketing, administration and research and development which increased by € 0.9 million, € 0.5 million and € 0.8 million, respectively, in combination with the slight decrease in gross profit of € 0.2 million. This was partially offset by lower other operating expenses and higher other operating income, which resulted in a positive net impact of € 1.4 million.

Financial Result

	Year Ended December 31,	
	2018	2017
	(€ in thousands)	
Interest expense	1,458	190
Interest income	(144)	(365)
Financial result	1,314	(175)

We had a financial result of € 0.8 million in 2018, an increase of € 0.6 million compared to a financial result of € 0.2 million in 2017. This was due to higher interest income mainly from revaluation of the derivative financial instruments related to the EIB loan of € 1.1 million and higher interest expense mainly from long term debt.

Reconciliation of Net Loss to EBITDA

	2019	2018 ⁽ⁱ⁾	2017 ^{(i) (ii) (iii)}
	(€ in thousands)		
Net loss	€ (14,231)	€ (8,764)	€ (8,554)
Income taxes	9	11	80
Financial result	1,314	(809)	(175)
Depreciation and Amortization	4,211	3,506	3,163
EBITDA	€ (8,697)	€ (6,056)	€ (5,486)

⁽ⁱ⁾ The Company has initially applied IFRS 16 as of January 1, 2019, using the modified retrospective approach. Under this approach, comparative information is not restated and the cumulative effect of initially applying IFRS 16 is recognized in retained earnings at the date of initial application. For further information, see Part III, Item 18. Financial Statements, Note 3 “Summary of significant accounting policies” to the consolidated financial statements.

⁽ⁱⁱ⁾ Comparative figures for the year ended December 31, 2017 were restated for immaterial errors. For further information, see Form 20-F filed with the SEC on March 28, 2019, Part III, Item 18. Financial Statements, Note 6 “Correction of errors” to the consolidated financial statements.

⁽ⁱⁱⁱ⁾ The Company has initially applied IFRS 15 and IFRS 9 as of January 1, 2018. Under the transition methods chosen, comparative information has not been restated. For further information, see Form 20-F filed with the SEC on March 28, 2019, Part III, Item 18. Financial Statements, Note 3 “Summary of significant accounting policies” to the consolidated financial statements.

C. LIQUIDITY AND CAPITAL RESOURCES

As of December 31, 2019, we had cash and cash equivalents of € 4.4 million and held investments in four bond funds of € 5.6 million and one note receivable of € 1.3 million. We believe these cash resources are sufficient to support our business plan for at least the next twelve months based on the assumption that our business plan is executed appropriately and sales track as expected. The global spread of COVID-19 increases the uncertainties and risks for the Company. Nevertheless, our current forecasts, which already consider adverse impacts from the COVID-19 pandemic and the related downturn of the global economy, supports the assumption of our ability to meet our financial obligations for the next 24 months. However, our historical losses raise material uncertainties that may cast significant doubt about our ability to continue as a going concern. Our consolidated financial statements as of and for the year ended December 31, 2019 have been prepared on the basis that we will continue as a going concern, which contemplates the realization of assets and satisfaction of liabilities in the normal course of business. Due to our history of significant losses since our IPO and the uncertainty surrounding the timing, quantum or the ability to raise additional equity and due to a history of defaults on loans, there is a material uncertainty that casts significant doubt on the Company's ability to continue as a going concern. In addition, the Company's auditors have indicated in their report on our consolidated financial statements for the fiscal year ended December 31, 2019, that conditions exist that raise substantial doubt about our ability to continue as a going concern. However, we believe that the Company will be successful in raising required capital when needed, and accordingly, have prepared our financial statements on a going concern basis.

[Table of Contents](#)

We have breached our Total Net Financial Debt to EBITDA ratio financial covenant and were in non-compliance with the letters of credit limit under the Finance Contract with the European Investment Bank (“EIB”), during the fiscal year and remain in default as at December 31, 2019. Consequently, the EIB could have called the loan due, however after discussions which started in July 2019, in March 2020, we received a waiver for the covenant breaches in 2019 and also a period of grace, ending 31 March 2021, within which we can rectify the breach and during which the EIB cannot demand immediate repayment. In return, we registered a first rank land charge amounting to € 10.0 million on our land and facility located in Friedberg (Germany) Paul-Lenz-Straße, 1a as collateral in favor of the EIB in March 2020.

To meet the demand for our Services business and to increase capacity, we will require investment in additional printers to be used in our expanding Service operations. In 2020, we plan to invest in additional 3D printers and equipment at our service centers, especially voxeljet America in order to increase printing capacity.

Despite the ongoing losses, reduced cash flow and cash facilities, and the other negative financial conditions, we assume that we will continue as a going concern. However, the going concern is dependent upon management and the Company being successful in the negotiations with the EIB over (i) an amendment to the Leverage Covenant under the Finance Contract and (ii) the draw down of tranche B, ensuring of availability of credit lines for advance payment guarantees or letters of credit to support export systems sales, in the achievement of budgeted sales as well as cost reduction targets and managing the COVID-19 impact to contain it to the magnitude included in the current liquidity forecast. Further, we are also contemplating other sources to raise additional capital to support our growth strategy through the issuance of additional debt, equity or other alternatives or a combination of those.

In 2016, we concluded loan agreements with Kreissparkasse Augsburg, Germany, to finance the construction of new office and production facilities in Friedberg: (i) in May 2016, we entered into a € 1.0 million loan agreement due April 30, 2021. Interest is payable at a fixed rate of 2.35%; (ii) in September 2016, we entered into a € 2.0 million loan agreement due May 31, 2038. Interest is payable at a fixed rate of 2.47%; (iii) In October 2016, we entered into a € 0.7 million loan agreement due September 30, 2021. Interest is payable at a fixed rate of 2.29%; and (iv) in December 2016, we entered into a € 1.0 million loan agreement due January 31, 2038. Interest is payable at a fixed rate of 2.72%. Among other terms, the loan agreements contain (i) certain covenants, including that we deposit € 2.0 million with Kreissparkasse Augsburg until we have reached certain ratios (financial covenants) with respect to our ability to service the debt by the end of fiscal year 2019, and (ii) change of control provisions concerning the ownership of the Company by our executive officers, Dr. Ingo Ederer and Rudolf Franz. In case we fail to meet these financial covenants by the end of its fiscal year 2019, we are obliged to pledge € 2.0 million for the benefit of the lender. In addition, the land owned by us upon which the facilities have been built as well as three 3D printers serve as collateral under the loan agreements. As of December 31, 2019, we were in non-compliance with the financial covenants and consequently pledged € 2.0 million in favor of Kreissparkasse.

On November 9, 2017, the European Investment Bank (“EIB”) and the Company entered into a Finance Contract and Synthetic Warrant Agreement to support the Company’s undertaking of research and development projects for growth from 2017 to 2020. The contract provides a credit of up to € 25.0 million in three tranches of € 10.0 million, € 8.0 million, and € 7.0 million, respectively.

Under the Contract, the Company may borrow up to € 25.0 million, subject to a limit of 50% of the total research and development expenditures and manufacturing capital expenditures from 2017 to 2020. The annual interest rates for the three tranches are 0%, 7% and 3%, respectively. The Company may draw down the second and third tranche only if certain revenue and EBITDA conditions are met. The Contract also includes a financial covenant that requires the Company to meet certain minimum financial ratios from 2019 to 2025. Under a First Demand Guarantee Agreement the Finance Contract is guaranteed by the voxeljet America subsidiary. Although we have breached certain financial covenant, it was subsequently waived by EIB, we are currently in negotiations for the draw down of the second tranche as well as for an amendment of the covenants.

Under the first tranche of € 10.0 million received on December 22, 2017, the EIB under the Synthetic Warrant Agreement is entitled to receive cash consideration equal to the market value of 195,790 ordinary shares of the Company (or equivalent number of ADSs) at the maturity date (5 years after draw down), after the occurrence of a trigger event, or on the expiration date (10 years after draw down). Under the anti-dilution protection clause of the agreement, the number of ordinary shares under the Synthetic Warrant Agreement was increased to 254,527 as a result of the capital increase effective October 17, 2018 and November 1, 2018.

[Table of Contents](#)

As of December 31, 2019 we had available lines of credit with two German banks totaling € 0.2 million. Interest rates across the credit lines varied from 5.15% to 6.80% as of December 31, 2019.

Cash Flow

Our primary sources of cash in 2019 were revenues, proceeds from sale of financial assets and cash reserves. Our primary uses of cash have traditionally been to finance our operations and to support the anticipated growth of our business.

The table below sets forth cash flows from operating, investing and financing activities for 2017, 2018 and 2019:

	2019	2018	2017
	(€ in thousands)		
Cash provided by (used in) operating activities	€ (6,819)	€ (7,714)	€ (6,830)
Cash provided (used in) investing activities	4,548	(2,027)	(4,935)
Cash provided by (used in) financing activities	€ (837)	9,544	11,279
Increase (decrease) in cash and cash equivalents	€ (3,108)	€ (197)	€ (486)

Our cash and cash equivalents decreased from € 7.4 million at December 31, 2018 to € 4.4 million at December 31, 2019.

Our cash and cash equivalents slightly decreased from € 7.6 million at December 31, 2017 to € 7.4 million at December 31, 2018.

Operating Activities

Net cash used in operating activities was € 6.8 million for the year ended December 31, 2019 compared to cash used in operating activities of € 7.7 million for the year ended December 31, 2018, a decrease in cash used of € 0.9 million. This was primarily due to the effect of changes in working capital. Contract liabilities significantly increased due to advance payments received and other liabilities and provisions also increased related to the restructuring in Germany and the UK.

Net cash used in operating activities was € 7.7 million for the year ended December 31, 2018 compared to cash used in operating activities of € 6.8 million for the year ended December 31, 2017, an increase in cash used of € 0.9 million. This was primarily due to the effect of changes in operating assets and liabilities, including working capital.

Investing Activities

Investing activities consist primarily of capital expenditures to support our growth and proceeds from the sale of certain short-term financial assets. In 2019, we spent the majority of our capital expenditure for the final payment related to the new office building and production facility located in Friedberg, Germany, which were completed in October 2017, as well as further upgrades of our ERP-System. We have sold short-term financial assets in 2019 amounting to 5.6 million compared to € 1.8 million in 2018 to fund our operation. We invested € 10.1 million of the proceeds from the capital increase into bond funds in 2018 compared to investments into bond funds of € 5.5 million in 2017. In 2018, we sold € 11.3 million of our investments, as compared to € 4.1 million in 2017.

We have breached our Total Net Financial Debt to EBITDA ratio financial covenant under the Finance Contract with the EIB, as of June 30, 2019, September 30, 2019 and December 31, 2019. Consequently, the EIB was entitled to accelerate the loan payment, however in March 2020, we received a waiver for the covenant breaches in 2019 and a grace period, ending March 31, 2021, within which the EIB cannot demand immediate repayment and we can rectify the breach. In return, we registered a first rank land charge on our land and facility located in Friedberg (Germany) Paul-Lenz-Straße, 1a as collateral in favor of the EIB in March 2020.

[Table of Contents](#)

Investing activities consist primarily of capital expenditures to support our growth and investments in bond funds. In 2018, we spent the majority of our capital expenditure on our production facility in the United States.

Financing Activities

In 2019, financing cash flows consisted primarily of repayment of long-term debt amounting to € 1.0 million, partially offset by proceeds from issuance of long-term debt amounting to € 0.5 million.

In 2018, financing cash flows consisted primarily of the proceeds from the capital increase amounting to € 11.1 million.

D. RESEARCH AND DEVELOPMENT, PATENTS AND LICENSES

Research and development is a key part of our strategy to develop new material sets and enhancements to our 3D printers. Our research and development expenses totaled € 7.2 million, € 6.3 million, and € 5.5 million for the years ended December 31, 2019, 2018, and 2017, respectively. For further information on our policies and practices regarding research and development, see “Item 4. Information on the Company—B. Business Overview—Research and Development.”

E. TREND INFORMATION

Other than as disclosed elsewhere in this annual report, we are not aware of any trends, uncertainties, demands, commitments or events for the year ended December 31, 2019 that are reasonably likely to have a material adverse effect on our revenues, profitability, liquidity or capital resources, or that would cause the disclosed financial information to be not necessarily indicative of future operating results or financial conditions. The target for the next years is to become cash neutral, and in addition to identify further funding sources.

F. OFF BALANCE SHEET ARRANGEMENTS

We are not a party to any off balance sheet arrangements.

G. TABULAR DISCLOSURE OF CONTRACTUAL OBLIGATIONS

Contractual Obligations

Future contractual payments as of December 31, 2019 consisted of long-term debt, operating leases and finance leases, which are discussed in greater detail below.

	December 31, 2019				
	(€ in thousands)				
	Total	Less than a year	1-3 years	3-5 years	More than 5 years
Bank overdrafts, lines of credit and long-term debt	19,132	10,996	1,252	2,378	4,506
Lease liability	4,409	549	1,054	1,307	1,499
Total	23,541	11,545	2,306	3,685	6,005

H. SAFE HARBOR

See “Special Note Regarding Forward Looking Statements” on page 1 of this annual report.

ITEM 6. DIRECTORS, SENIOR MANAGEMENT AND EMPLOYEES

A. DIRECTORS AND SENIOR MANAGEMENT

Supervisory Board

The following table sets forth the names and functions of the current members of our Supervisory Board, their ages, their terms (which expire on the date of the relevant year's annual general shareholders' meeting) and their principal occupations outside of our Company as of March 1, 2020:

Name	Age	Term Expires	Principal occupation
Peter G. Nietzer (Chairman)	59	2023	Managing director of asset management firm
Dr. Stefan Söhn (Vice Chairman)	65	2023	CFO, consultant and lawyer
Eberhard Weiblen (Member)	55	2023	Management Consultant

The business address of the members of our Supervisory Board is the same as our business address: voxeljet AG, Paul-Lenz-Straße 1a, 86316 Friedberg, Germany. Our Supervisory Board has determined that all members of our Supervisory Board are independent under German law and the NYSE Listed Company Manual.

The following is a brief summary of the business experience of the members of our Supervisory Board:

Peter Nietzer, born in 1960 in Heilbronn, Germany, has been the chairman of our Supervisory Board since July 2, 2013. Mr. Nietzer has served as owner and managing director of KITES Industriebeteiligungen GmbH, a private investment holding company, and of M59 Advisory Services, since January 2013 and as Partner and Chief Financial Officer of GermanCapital GmbH, a private equity company he co-founded and that specializes in mid-market buy-outs, since July 2005. Mr. Nietzer has served as well as a Non-Executive Director of Cognis Credit Opportunities Fund Ltd., Cognis Credit Opportunities Master Fund Ltd. and Cognis Credit Opportunities Manager (Cayman) Ltd. since September 2013 until December 31, 2016. Since April 2000, Mr. Nietzer has been an executive board member and Managing Partner of Felicitas GmbH (which was previously known as GI Ventures AG), a fund management company he helped found. Mr. Nietzer holds an M.B.A. from Friedrich-Alexander University Erlangen-Nürnberg, Germany. We believe that Mr. Nietzer's over 20 years of experience in private equity and venture capital and his previous roles as a Supervisory Board member provide him with valuable insight into our business, particularly in the areas of financing and acquisition opportunities, while his focus on technology companies gives him insight into our operations and industry. In addition, Mr. Nietzer's work as a chief financial officer provides the Supervisory Board with expertise in financial matters.

Dr. Stefan Söhn, born in 1954 in Düsseldorf, Germany, has been the vice chairman of our Supervisory Board since July 2, 2013. Since January 2010, Dr. Söhn has served as a Partner and Managing Director of MultiTrust Capital Partners GmbH (formerly MBL China Consulting GmbH), as owner and manager of Söhn Industrial Consulting and Head of China Desk of Sonntag & Partner Wirtschaftsprüfer, Steuerberater, Rechtsanwälte in Augsburg and Munich, Germany (until 2014). Dr. Söhn held executive positions at KUKA Systems GmbH, an equipment supplier to the automotive industry, from July 2000 to December 2009, serving as its Chief Financial Officer from July 2000 to December 2006 and as its Chief Executive Officer from January 2007 to December 2009. Since April 2018 Dr. Söhn has been serving as Chief Financial Officer of Andreas Schmid Logistik AG. During his time at KUKA Systems GmbH, Dr. Söhn led the successful expansion of its business in Asia. Dr. Söhn holds a law degree from the University of Augsburg, Germany and a Master of Science in Management from the London Business School.

Eberhard Weiblen, born in 1964 in Metzingen, Germany, is a member of our Supervisory Board since May 2017. Since 1995, Mr. Weiblen is part of Porsche Consulting in Germany. He was the sole managing director between 1998 and 2007 and has been the chairman of the board of directors since 2007. In addition Mr. Weiblen serves as Chairman of the Shareholders' Committee of Porsche Consulting S.r.l., Milan, Italy, Porsche Consulting, Inc., Atlanta, USA and Porsche Consulting Ltd., Shanghai, China. His great wealth of experience in business management and consultation, for international projects with a focus in the automotive and mechanical engineering industry, makes him a seamless fit for voxeljet AG. Earlier in his career, he gained extensive experience in consulting at the tax and accounting consulting firm Arthur Andersen. Mr. Weiblen studied technically oriented business administration at the University of Stuttgart, Germany, with a focus on controlling, marketing, and manufacturing engineering.

Management Board

The following table sets forth the names and functions of the current members of our Management Board, their ages and their terms as of March 1, 2020:

Name	Age	Term Ends	Position
Dr. Ingo Ederer	52	June 30, 2021	Chief Executive Officer
Rudolf Franz	52	June 30, 2021	Chief Financial Officer, Chief Operating Officer

The business address of the members of our Management Board is the same as our business address: voxeljet AG, Paul-Lenz-Straße 1a, 86316 Friedberg, Germany.

The following is a brief summary of the business experience of the members of our Management Board:

Dr. Ingo Ederer, born in 1967 in Weilheim, Germany, is one of our founders and is the key inventor of our technology. He has served as our Chief Executive Officer since 2013. Dr. Ederer co-founded our Company as Generis GmbH in 1999 and served as our Managing Director from our incorporation in 1999 to 2013, building up the Company from the start-up phase to become a leading provider of 3D printers for industrial and commercial customers. After graduating with a degree in mechanical engineering from the Technical University of Munich in 1993, Dr. Ederer started his career as researcher at the department of precision engineering at the Technical University of Munich where he received his Ph.D. in 2000 with a thesis on piezo-based micro-jetting devices. He contributes more than 20 years of experience in the 3D printing equipment market and is a holder of more than 50 patents in the field of 3D printing.

Rudolf Franz, born in 1967 in Friedberg, Germany, has been one of our shareholders through his venture fund Franz Industriebeteiligungen AG since 2003. Since 2003 he has served as Chief Operation Officer, focusing on marketing and sales, finance and controlling and administration. In addition, he has held the position of Chief Financial Officer since 2013. Mr. Franz has been a member of the supervisory board of FORUM Media Group GmbH since 2015. Mr. Franz has been the chairman of the supervisory board of Rettenmeier Holding AG from 2011 until 2014. From 2007 to 2009, Mr. Franz served as the Chairman of the supervisory board of Hama Holding GmbH and from 2005 to 2009 as the chairman of the supervisory board of Wavelight AG. In 1995, Mr. Franz was appointed as investment manager of Technologieholding VC GmbH, an international venture capital fund that invested in European technologies, and became partner in 1997, where he was responsible for managing the Munich investment team. After he sold his shares in Technologieholding VC GmbH to 3i Group plc in 2000, Mr. Franz served as Managing Director of 3i Group plc and was responsible for technology investments in the German-speaking market from 2000 to 2002. Mr. Franz studied political economics and industrial engineering at the University of Augsburg and the University of Munich and earned a master's degree from the University of Applied Science Munich in 1991.

B. COMPENSATION

Compensation of Management Board Members

We have entered into service agreements with the current members of our Management Board. These agreements generally provide for an annual fixed compensation (base salary), an annual performance award (annual bonus) with a target of up to 30% of the yearly base salary, as well as a long-term performance award for a three-business-year period (long-term bonus) with a target of up to 100% of the yearly base salary. The performance targets of the annual and long-term bonuses are a mixture of certain financial and non-financial targets, such as revenue and profitability goals, as well as EBITDA goals. In addition to the fixed and variable remuneration components, under the terms of their service agreements, the members of our Management Board are entitled to additional benefits (including company car arrangements, mobile phone, accident and director and officer liability insurance) and reimbursement of necessary and reasonable expenses.

We believe that the service agreements between us and the members of our Management Board provide for payments and benefits (including upon termination of employment) that are in line with customary market practice for similar companies which are operating in our industry.

In 2020, the two members of our Management Board are collectively entitled to receive total compensation of up to € 1.6 million, which includes base salary, bonus payments, employee stock options and other compensation as a

result of other benefits as described above. In 2019, the two members of our Management Board collectively received total compensation of € 1.1 million, which included base salary, stock options and other compensation.

Compensation of Supervisory Board Members in Fiscal Year 2019

In our annual general meeting on May 31, 2016 the following remuneration system was resolved:

- Ordinary members of the Supervisory Board receive a fixed remuneration in the amount of € 40,000 per annum. The chairman and vice chairman of the Supervisory Board shall receive a higher fixed remuneration in the amount of € 80,000 per annum and € 60,000 per annum, respectively.
- We do not pay fees for attendance at Supervisory Board meetings.
- The members of the Supervisory Board are entitled to reimbursement of their reasonable, documented expenses (including, but not limited to, travel, board and lodging and telecommunication expenses).

This remuneration system will remain in force until it has been amended or terminated by our general shareholders' meeting.

C. BOARD PRACTICES

Overview

We are a German stock corporation (*Aktiengesellschaft*, or *AG*) with our registered seat in Germany. We are subject to German legislation on stock corporations, most importantly the German Stock Corporation Act (*Aktiengesetz*, or *AktG*). In accordance with the German Stock Corporation Act (*Aktiengesetz*), our corporate bodies are the Management Board (*Vorstand*), the Supervisory Board (*Aufsichtsrat*) and the general shareholders' meeting (*Hauptversammlung*). Our Management Board and our Supervisory Board are entirely separate and, as a rule, no individual may simultaneously be a member of both boards.

Our Management Board is responsible for the day-to-day management of our business in accordance with applicable laws, our articles of association (*Satzung*) and the Management Board's internal rules of procedure (*Geschäftsordnung*). Our Management Board represents us in our dealings with third parties.

The principal function of our Supervisory Board is to supervise our Management Board. The Supervisory Board is also responsible for appointing and removing the members of our Management Board and representing us in connection with transactions between a current or former member of the Management Board and us.

Under German law, members of both boards owe a duty of loyalty and care to us. In carrying out their duties, they are required to exercise the standard of care of a prudent and diligent businessperson. If they fail to observe the appropriate standard of care, they may become liable to us.

In carrying out their duties, the members of both boards may take into account a broad range of considerations when making decisions, including our interests and the interests of our shareholders, employees, creditors and, to a limited extent, the general public, while respecting the rights of our shareholders to be treated on equal terms. Additionally, the Management Board is responsible for implementing an internal monitoring system for risk management purposes.

Our Supervisory Board has comprehensive monitoring responsibilities. To ensure that our Supervisory Board can carry out these functions properly, our Management Board must, among other things, regularly report to our Supervisory Board regarding our current business operations and future business planning (including financial, investment and personnel planning). In addition, our Supervisory Board is entitled to request special reports from the Management Board at any time.

Under German law, our shareholders have no direct recourse against the members of our Management Board or our Supervisory Board if they have breached their duty of loyalty and care to us. Apart from insolvency or other special circumstances, only the Company has the ability to claim damages against the members of our two boards. We may

waive these claims to damages or settle these claims only if at least three years have passed since any violation of a duty occurred and only if our shareholders approve the waiver or settlement at a shareholders' meeting with a simple majority of the votes cast; provided that shareholders who in the aggregate hold one-tenth or more of our share capital do not oppose the waiver or settlement and have their opposition formally recorded in the meeting's minutes by a German civil law notary.

The following description, as far as it relates to our articles of association, is based on the articles of association, as last amended, effective with the registration in the commercial register on May 29, 2019.

Supervisory Board

Our Supervisory Board currently consists of three members, which is the minimum number of members allowed under German law. As we grow, our Supervisory Board may be required to include employee representatives subject to the provisions of the German One-Third Employee Representation Act (*Drittelbeteiligungsgesetz*) or the German Codetermination Act (*Mitbestimmungsgesetz*).

Currently, all of the members of our Supervisory Board are elected by the general shareholders' meeting in accordance with the provisions of the German Stock Corporation Act (*Aktiengesetz*). German law does not require the majority of our Supervisory Board members to be independent. The rules of procedure for our Supervisory Board provide that the Supervisory Board should be composed of a majority of independent members, as determined by the Supervisory Board. Under the Supervisory Board's rules of procedure, a board member is deemed to be independent if such member has no business or personal relationships with us or the Management Board that could constitute a conflict of interest.

Under German law, the members of a supervisory board may be elected for a term of up to approximately five years, depending on the dates of the annual general meeting at which the members of the supervisory board are elected, which is the standard term of office. Reelection, including repeated reelection, is permissible. The shareholders' meeting may specify a term of office for individual members or all of the members of our Supervisory Board which is shorter than the standard term of office and, subject to statutory limits, may set different start and end dates for the terms of members of our Supervisory Board.

The shareholders' meeting may, at the same time as it elects the members of the Supervisory Board, elect one or more substitute members. The substitute members replace members who cease to be members of our Supervisory Board and take their place for the remainder of their respective terms of office. We have not elected any substitute members.

Members of our Supervisory Board may be dismissed at any time during their term of office by a resolution of the shareholders' meeting adopted by a simple majority of the votes cast. In addition, any member of our Supervisory Board may resign at any time by giving one month written notice of his or her resignation to the chairperson of our Supervisory Board (in case the chairperson resigns, such notice is to be given to the vice chairperson). Our Supervisory Board may agree upon a shorter notice period. None of the members of the Supervisory Board are eligible to receive any benefits upon termination of their service on the Supervisory Board.

Our Supervisory Board elects a chairperson and a vice chairperson from its members. The vice chairperson exercises the chairperson's rights and obligations whenever the chairperson is unable to do so. On May 29, 2019, Peter Nietzer, Dr. Stefan Sohn and Eberhard Weiblen were elected as members of our Supervisory Board by the general shareholders' meeting for a term that ends on the day of the shareholders' meeting which resolves on the discharge of the Supervisory Board for fiscal year 2023. The members of our Supervisory Board have elected Peter Nietzer as chairperson and Dr. Stefan Sohn as vice chairperson, each for the term of their respective membership on our Supervisory Board.

The Supervisory Board meets at least twice during the first half and twice during the second half of each calendar year. Our articles of association and the Supervisory Board's rules of procedure provide that a quorum of the Supervisory Board members is present if at least half of its members, but in any case no less than three members, participate in the vote. Members of our Supervisory Board are deemed present if they participate via telephone or video conference, subject to no member of the Supervisory Board raising any objection to this type of participation. Any absent member may also participate in the voting by submitting his or her written vote through another member.

[Table of Contents](#)

Resolutions of our Supervisory Board are passed by the vote of a simple majority unless otherwise required by law, our articles of association or the rules of procedure of our Supervisory Board. In the event of a tie, the chairperson casts the tie-breaking vote.

Our Supervisory Board is not permitted to make management decisions, but, in accordance with German law and in addition to its statutory responsibilities, it has determined that the following matters, among others, require its prior consent:

- any material changes to our business strategy;
- the purchase or sale of real estate or legal entities or the purchase, sale, creation, extension, reduction or termination of business activities, including tangible or intangible assets, if the relevant price or value, in each case, exceeds € 50,000;
- the purchase, sale or creation of joint ventures;
- the termination of, or amendment to, consulting, advisory or other service agreements, if our costs or obligations associated with such agreement exceed € 50,000 per year or € 250,000 in the aggregate;
- the termination of, or amendment to, operating leases, land leases or rental agreements in relation to real estate, buildings or similar objects, if our obligations associated with such agreement exceed € 50,000 per year or € 250,000 in the aggregate;
- expenditures or capital investments exceeding € 50,000 in each case;
- any hiring, dismissal or modification of an employment agreement of any executive manager, provided that their aggregate cash remuneration (including cash bonuses) exceeds € 75,000;
- any material change or amendment to our code of conduct; and
- the approval of our budget.

Our Supervisory Board may designate further types of actions requiring its approval.

Section 2(2) sentence 2 of the rules of procedure of our Supervisory Board provides that a Supervisory Board member may not continue to serve on our Supervisory Board past his or her 75th birthday.

Supervisory Board Practices

Decisions are generally made by our Supervisory Board as a whole; however, decisions on certain matters may be delegated to committees of our Supervisory Board to the extent permitted by law. The chairperson, or if he or she is prevented from doing so, the vice chairperson, chairs the meetings of the Supervisory Board and determines the order in which the agenda items are discussed, the method and order of the voting, any adjournment of the discussion and passing of resolutions on individual agenda items after a due assessment of the circumstances.

Pursuant to Section 107(3) AktG, the supervisory board may form committees from among its members and charge them with the performance of specific tasks. The committees' tasks, authorizations and processes are determined by the supervisory board. Where permissible by law, important powers of the supervisory board may also be transferred to committees.

Under Article 7 no.1 of its internal rules of procedure, the supervisory board has set up and appointed a Compensation and Nomination Committee and an Audit Committee.

Compensation and Nomination Committee

Pursuant to Article 9 of the rules of procedure of our Supervisory Board, the Compensation and Nomination Committee prepares hiring and personnel decisions for approval by the Supervisory Board and performs the following functions:

- preparation of the resolutions of the Supervisory Board regarding the conclusion, alteration and termination of service contracts of members of the Management Board within the framework of the compensation system adopted by the Supervisory Board;
- preparation of the resolutions of the Supervisory Board to file an application to the court to reduce the compensation paid to the Management Board members under Section 87 (2) AktG;
- preparation of the resolutions of the Supervisory Board regarding the framework of the compensation scheme of the Management Board, including its essential contractual elements, and providing the Supervisory Board with information necessary for it to review this compensation scheme on a regular basis;
- representation of the Company vis-à-vis former members of the Management Board under Section 112 AktG;
- granting consent for secondary occupations and for other activities of Management Board members under Section 88 AktG;
- approval of agreements with Supervisory Board members under Section 114 AktG; and
- proposing suitable candidates as Supervisory Board members to the general shareholders' meeting in case of elections of Supervisory Board members.

The Compensation and Nomination Committee monitors the Management Board's adherence to the rules of procedure of the Management Board. The rules of procedure of the Management Board contain, among other things, obligations for the Management Board to provide certain information to the Compensation and Nomination Committee.

All current members of the Supervisory Board are members of the Compensation and Nomination Committee. Our Supervisory Board has determined that each member of the Compensation and Nomination Committee satisfies the independence requirements of the NYSE.

Audit Committee

According to Article 10 of the rules of procedure of our Supervisory Board, our Audit Committee assists the Supervisory Board in overseeing the accuracy and integrity of our accounting and financial reporting processes and audits of our financial statements, the effectiveness of the internal control system and our compliance with legal and regulatory requirements, the independent auditors' qualifications and independence and the performance of the independent auditors.

The Audit Committee's duties and responsibilities to carry out its purposes include, among others:

- the review of our accounting processes;
- the review of the effectiveness of our internal systems of control, risk management and compliance;
- the review and the handling of matters and processes related to auditor independence;
- the commissioning of the auditors to conduct the audit, agreeing on additional services to be provided by the auditors under the auditor's assignment, the establishment of the scope and the main review points of the audit and agreeing upon a fee with the auditors;
- the preparation of the Supervisory Board's resolution on our financial statements; and

- the establishment of procedures for (i) the receipt, retention and treatment of complaints we receive regarding accounting, internal accounting controls or auditing matters and (ii) the confidential, anonymous submission by our employees of concerns regarding questionable accounting or auditing matters.

Under German law, each member of the Supervisory Board is obliged to carry out his or her duties and responsibilities personally, and such duties and responsibilities cannot be generally and permanently delegated to third parties. However, the Supervisory Board and its committees, including the Audit Committee, have the right to appoint third party experts for the review and analysis of specific circumstances in accordance with its control and supervision duties under German law. For example, the Supervisory Board could retain an audit firm and/or legal counsel if it wants to investigate potentially illegal activities occurring in a foreign subsidiary. We will bear the costs for any such independent experts that are retained by the Supervisory Board or any of its committees, including the Audit Committee.

The Audit Committee consists of three members. The chairman of the Audit Committee shall not be a former member of our management board whose appointment ended less than two years prior to his or her appointment as chairman of the Audit Committee.

Furthermore, the chairman of the Audit Committee shall have special knowledge and experience in the application of accounting principles and internal control procedures and shall therefore qualify as an “audit committee financial expert” as defined under the Exchange Act.

Management Board

Overview

Under German law and the Company’s articles of association, the Management Board must consist of one or more persons and the Supervisory Board determines the exact number of members of the Management Board. The Supervisory Board also appoints the chairman and the deputy chairman of the Management Board, if any. Currently, the Management Board consists of two members, with Dr. Ingo Ederer appointed as Chief Executive Officer and Rudolf Franz appointed as Chief Financial Officer and Chief Operating Officer.

Members of our Management Board conduct the daily business of our Company in accordance with applicable laws, our articles of association and the rules of procedure for the Management Board. The Management Board is in general responsible for the management of our Company and for handling our daily business relations with third parties, the internal organization of our business and communications with our shareholders. In addition, the Management Board has the responsibility for:

- the preparation of our annual financial statements;
- the making of a proposal to our shareholders’ meeting on how our profits (if any) should be allocated (such proposal to be submitted simultaneously to the Supervisory Board); and
- regular reporting to the Supervisory Board on our current operating and financial performance, our budgeting and planning processes and our performance under them and on future business planning (including strategic, financial, investment and personnel planning).
- the implementation and oversight of internal controls, risk management and compliance program

The Supervisory Board appoints the members of the Management Board for a maximum term of five years. Reappointment or extension of the term for up to five years is permissible. For date of expiration of the current term of office for our Management Board members, and the period during which they have served in office, see “Item 6. Directors, Senior Management and Employees—B. Directors and senior management.” The Supervisory Board may revoke the appointment of a Management Board member prior to the expiration of his or her term for good cause only, such as for gross breach of fiduciary duties or if the shareholders’ meeting passes a vote of no-confidence with respect to such member, unless the Supervisory Board deems the no-confidence vote to be clearly unreasonable. The supervisory board is also responsible for entering into, amending and terminating service agreements with the Management Board members and, in general, for representing us in disputes with the Management Board, both in and out of court. The Supervisory Board may

assign these duties to a committee of the Supervisory Board, except in certain cases where the approval of the entire Supervisory Board is required, such as the approval of the compensation of members of our Management Board and the reduction of the compensation of members of our Management Board upon a deterioration of our situation, which includes, among other things, a bankruptcy or the layoff of a significant number of employees.

According to our articles of association, as long as there are two or more Management Board members, either (i) two Management Board members or (ii) one Management Board member acting jointly with an authorized representative (*Prokurist*) have the authority to act on our behalf. The Supervisory Board may grant any Management Board member the right to represent us alone and may release any member of the Management Board from the restrictions on multiple representations under Section 181, 2nd Alternative of the German Civil Code (*Bürgerliches Gesetzbuch*).

Under the Management Board member service agreements and by a special resolution of the Supervisory Board, all members of the Management Board have been granted authority to represent us alone and were released from the restrictions imposed by Section 181, 2nd Alternative of the German Civil Code.

The Management Board has the authority to determine our business areas and operating segments and resolve upon the internal allocation of responsibility for certain business areas and operating segments among the various members of the Management Board by setting up a business responsibility plan (*Geschäftsverteilungsplan*). Since we currently have only two members of the Management Board, we do not have a business responsibility plan in place at this time.

Section 3(7) sentence 3 of the rules of procedure of our Supervisory Board provides that a Management Board member shall not continue to serve on our management board past his or her 65th birthday.

Service Agreements

Dr. Ingo Ederer and Rudolf Franz

By resolution of its Supervisory Board effective as of July 1, 2016, the current members of the voxeljet AG Management Board, Dr. Ingo Ederer and Rudolf Franz, were reappointed as members of the Management Board for a new 5-year term from July 1, 2016 until June 30, 2021. Dr. Ingo Ederer and Rudolf Franz have each accepted such new appointment.

Following the reappointment of Dr. Ingo Ederer and Rudolf Franz as members of the Management Board, the existing service agreements with Dr. Ingo Ederer and Rudolf Franz originally scheduled to expire in 2017 were mutually terminated and new five-year service agreements were concluded with each member of the Management Board effective as of July 1, 2016.

The main terms of the service agreements are summarized below. The terms of the service agreements of Dr. Ingo Ederer and Rudolf Franz are identical unless explicitly stated otherwise.

Each service agreement can be terminated prior to June 30, 2021 only (i) by the member of the Management Board exercising a special termination right (*Sonderkündigungsrecht*) in case of a change of control of voxeljet (as defined in the service agreement), if and to the extent such change of control leads to a material change of the position of the member of the Management Board, (ii) by us if we terminate the appointment of the member of the Management Board for cause or (iii) by the member of the Management Board for cause.

If a member of the Management Board terminates the service agreement exercising the special termination right (*Sonderkündigungsrecht*) in case of a change of control, the member of the Management Board is entitled to a compensation payment. 50% of such compensation payment consists of the sum of the total remuneration payable to the member of the Management Board over the outstanding full term of the service agreement (fixed plus variable remuneration assuming the full achievement of all bonus targets) and the other 50% consists of a lump sum payment amounting to two annual fixed salaries. The compensation payment is capped at the amount of € 2.0 million.

Under German law, a contract can be terminated for cause only in exceptional circumstances (i.e., if the continuation of the contractual relationship is unacceptable for the terminating party). Termination for cause generally requires that a party repeatedly and severely breaches its contractual duties. To the extent the employment terminates

during a fiscal year, the member of the Management Board is entitled to a pro rata portion of the bonus that reflects the percentage of the year that the member of the Management Board worked for us.

Furthermore, each service agreement contains a covenant pursuant to which each member of the Management Board has agreed not to compete with us for a period of two years after the termination of the service agreement. Under German law, a non-compete covenant is only valid if the employee is compensated during the term of the non-compete obligation. As compensation for the non-compete covenant, each member of the Management Board will receive 100% of his fixed salary (but in no event less than 50% of the total compensation received in the preceding year) for the entire two-year term of the non-compete covenant. If the service agreement of a member of the Management Board is terminated for cause, we are not obligated to pay the compensation for the non-compete covenant, so long as we provide the member of the Management Board with a written statement disclaiming our obligation to pay this compensation within one month after the termination.

The new service agreements provide for an annual fixed compensation (base salary), an annual performance award (annual bonus) of up to 30% of the yearly base salary, as well as a long-term performance award for a three-business-year period (long-term bonus) of up to 100% of the yearly base salary. The performance targets of the annual and long-term bonuses are a mixture of certain financial and non-financial targets, such as revenue, profitability and liquidity targets as well as personal goals. In addition to the fixed and variable remuneration components, each member of the Management Board is entitled to additional benefits (including company car arrangements, mobile phone, accident and director and officer liability insurance) and reimbursement of necessary and reasonable expenses.

German Corporate Governance Code

The German Corporate Governance Code (Deutscher Corporate Governance Kodex) was originally published by the German Ministry of Justice (*Bundesministerium der Justiz*) in 2002. The applicable version for fiscal year 2019 is the German Corporate Governance Code as amended on February 7, 2017 and published in the German Federal Gazette (*Bundesanzeiger*) on April 24, 2017. The Corporate Governance Code contains recommendations (*Empfehlungen*) and suggestions (*Anregungen*) relating to the management and supervision of German companies that are listed on a stock exchange. It follows internationally and nationally recognized standards for good and responsible corporate governance. The purpose of the Corporate Governance Code is to make the German system of corporate governance transparent for investors. The Corporate Governance Code includes corporate governance recommendations and suggestions with respect to shareholders and general shareholders' meetings, the management and supervisory boards, transparency, accounting policies, and auditing.

There is no obligation to comply with the recommendations or suggestions of the Corporate Governance Code. The German Stock Corporation Act (*Aktiengesetz*) requires only that the management board and supervisory board of a German listed company issue an annual declaration that either (i) states that the Company has complied with the recommendations of the Corporate Governance Code or (ii) lists the recommendations that the Company has not complied with and explains its reasons for deviating from the recommendations of the Corporate Governance Code (so called *Entsprechenserklärung*). In addition, a listed company is also required to state in this annual declaration whether it intends to comply with the recommendations or list the recommendations it does not plan to comply with in the future. The current declaration needs to be published permanently on the Company's website. In addition, the Corporate Governance Code recommends that the old declarations remain on the website for five years. If the Company changes its policy on certain recommendations between such annual declarations, it must disclose this fact and explain its reasons for deviating from the recommendations. Non-compliance with suggestions contained in the Corporate Governance Code need not be disclosed.

Following our listing on the NYSE in October 2013, the Corporate Governance Code applies to us and we are required to issue the annual declarations described above. On December 31, 2013, we issued and published our first annual compliance declaration and on December 15, 2014 we published our second annual compliance declaration. Our third and fourth annual compliance declaration was published on December 16, 2015 and December 14, 2016, respectively. Our fifth and sixths annual compliance declaration was published on December 12, 2017 and December 14, 2018. Our seventh annual compliance declaration was published on December 10, 2019. You can find our annual compliance declarations on our website at *investor.voxeljet.com*. This website address is included in this annual report as an inactive textual reference only. The information and other content appearing on our website are not part of this annual report.

[Table of Contents](#)

According to their respective rules of procedure, our Management Board and the Supervisory Board are obliged to comply with the Corporate Governance Code except for such provisions which they have explicitly listed in their annual declaration and for which they have stated that they do not comply with.

In particular, we adhere to the following significant recommendations of the Corporate Governance Code: (i) the Supervisory Board will establish a compensation and nomination committee (*Vergütungs- und Nominierungsausschuss*) as well as an audit committee (*Prüfungsausschuss*); (ii) the Management Board must keep the Supervisory Board closely informed, in particular with respect to measures which can fundamentally affect our financial situation; and (iii) significant management measures are subject to Supervisory Board approval.

However, we expect to deviate from the recommendations and suggestions of the Corporate Governance Code in various respects. All deviations from the Corporate Governance Code recommendations will be published in the official annual declarations, the current declaration was published on December 10, 2019.

D. EMPLOYEES

The majority of our current employees are located in Germany, paid in Euros and subject to German labor law. A few of our employees are members of a labor union; however, voxeljet AG is not bound by any collective bargaining agreement. On June 23, 2016, our employees voted for the first workers' council of voxeljet AG. According to the German Betriebsverfassungsgesetz (BetrVG), § 9, the workers' council has 9 members. In its inaugural meeting on July 7, 2016, the workers' council has officially started its work for the employees of the voxeljet AG.

The table below sets forth the number of employees we had as of December 31 of each of the years represented:

	December 31,		
	2019	2018	2017
Management board (Vorstand)	2	2	2
Managing director	4	4	4
Research and development	48	51	49
Systems	89	95	87
Services	48	56	52
Sales and marketing	45	53	51
Financial	61	66	51
Total	297	327	296

E. SHARE OWNERSHIP

Supervisory Board

As of December 31, 2019, none of the members of the Supervisory Board held any of our ordinary shares.

Management Board

Our CEO and founder, Dr. Ingo Ederer, holds 578,695 of our ordinary shares, which represented 12.0% of our ordinary shares as of December 31, 2019. In addition, he holds 116,731 ADSs which have not been converted to ordinary shares. The aggregate number of ADSs beneficially owned by Dr. Ingo Ederer represents approximately 12.4% of the Company's outstanding ADSs, based on 24.18 million ADSs outstanding.

Our CFO and COO, Rudolf Franz, holds 259,415 of our ordinary shares through Franz Industriebeteiligungen AG, which is wholly owned by Mr. Franz and members of his family, which represented 5.4% of our ordinary shares as of December 31, 2019. In addition, Franz Industriebeteiligungen holds 116,731 ADSs which have not been converted to ordinary shares. The aggregate number of ADSs beneficially owned by Franz Industriebeteiligungen represents approximately 5.8% of the Company's outstanding ADSs, based on 24.18 million ADSs outstanding.

On April 7, 2017 and on April 12, 2018, each member of the Management Board was granted with 69,750 and 23,250 shares of equity settled stock options, respectively. No shares of equity settled stock options were granted to the

members of the Management Board in 2019.

ITEM 7. MAJOR SHAREHOLDERS AND RELATED PARTY TRANSACTIONS

A. MAJOR SHAREHOLDERS

The following table sets forth information, as of March 1, 2020, regarding the beneficial ownership of our ordinary shares.

5% Shareholders and Members of our Supervisory and Management Boards	Number⁽¹⁾	Percent⁽¹⁾
Dr. Ingo Ederer	602,042 (2)	12.4% (2)
AWM Investment Company, Inc. ⁽³⁾	557,186	11.5%
Startkapital-Fonds Augsburg GmbH ⁽⁴⁾	259,415	5.4%
Franz Industriebeteiligungen AG ⁽⁵⁾	282,762 (2)	5.8%
Rudolf Franz ⁽⁶⁾	282,762 (2)	5.8%
Peter Nietzer	--	--
Dr. Stefan Söhn	--	--
Eberhard Weiblen	--	--
All Members of our Supervisory and Management Boards as a Group (5 persons):	884,804 (2)	18.2% (2)

In computing the number of shares beneficially owned by a person and the percentage ownership of that person, we have included shares that the person has the right to acquire within 60 days of December 31, 2019, including through the vesting of deferred share awards, exercise of any option, warrant or other right or the conversion of any other security. These shares, however, are not included in the computation of the percentage ownership of any other person. Unless otherwise indicated, the business address of each such person is c/o voxeljet AG, Paul-Lenz Straße 1a, 86316 Friedberg, Germany. As of December 31, 2019, Bank of America Corp and Alyeska Investment Group, L.P. no longer beneficially own more than 5% of our ordinary shares.

- (1) Except as otherwise indicated, the persons named in this table have sole voting and investment power with respect to all ordinary shares shown as beneficially owned by them, subject to community property laws where applicable and to the information contained in the footnotes to this table.
- (2) This number includes the 116,731 ADSs acquired by each Dr. Ingo Ederer and Franz Industriebeteiligungen AG through the October 2018 offering which have not been converted to ordinary shares. The 116,731 ADSs are reported in this table on an as converted basis into 23,347 ordinary shares using the five-to-one conversion ratio.
- (3) Based on the Schedule 13G/A filed by AWM Investment Company, Inc. filed on February 13, 2019. The share ownership that was reported in ADSs has been reported on an as converted basis to the underlying ordinary shares using the five-to-one conversion ratio, converting the reported 2,785,927 ADSs to 557,186 ordinary shares.
- (4) Marcus Wagner is the managing director of Startkapital Fonds Augsburg GmbH and has the sole power to vote, hold and dispose of shares held by it. The address for Startkapital Fonds Augsburg GmbH is Stettenstraße 1, 86150 Augsburg, Germany.
- (5) Rudolf Franz and Bärbel Franz are the Managing Directors of Franz Industriebeteiligungen AG and have shared power to vote, hold and dispose of the shares held by it. Bärbel Franz is the spouse of Rudolf Franz. The address for Franz Industriebeteiligungen AG is Am Silbermannpark 1b, 86161 Augsburg, Germany.
- (6) Consists entirely of ordinary shares held by Franz Industriebeteiligungen AG.

As of December 31, 2019, there were thirteen holders of record entered in our German share register. Citibank, N.A., the depository, is a U.S. resident and the holder of record of the ordinary shares that underlie our ADSs. Each ADS represents one-fifth of an ordinary share. As of December 31, 2019, Citibank, N.A. held 3,561,890 ordinary shares representing 73.7% of the Company's issued share capital held at that date. Other than Citibank, N.A., we do not believe that any of our other holders of record entered in our share register is a U.S. resident. The number of holders of record is based exclusively upon our share register and does not address whether a share or shares may be held by the holder of

record on behalf of more than one person or institution who may be deemed to be the beneficial owner of a share or shares in our Company.

None of our shareholders will have different voting rights from other shareholders. We are not aware of any arrangement that may, at a subsequent date, result in a change of control of our Company.

B. RELATED PARTY TRANSACTIONS

Since January 1, 2016, there has not been, nor is there currently proposed, any material transaction or series of similar material transactions to which we were or are a party in which any of the members of our Supervisory Board and Management Board, executive officers, holders of more than 10% of any class of our voting securities, or any member of the immediate family of any of the foregoing persons, had or will have a direct or indirect material interest, other than the compensation and shareholding arrangements we describe where required in “Item 6. Directors, Senior Management and Employees,” and the transactions we describe below.

Transactions with Franz Industriebeteiligungen AG comprise the rental of office space in Augsburg, Germany. Rental expenses amounted to kEUR 2, in each of 2019, 2018 and 2017. The rental of office space is ongoing and will continue in 2020. In addition, Franz Industriebeteiligungen AG received payments related to the use of certain paintings which are placed in the administrative building in Friedberg. Associated rental expenses amounted to kEUR 2 in each of 2018 and 2017. At the beginning of 2019, voxeljet acquired those paintings at a price of kEUR 2 and consequently the rental agreement pertaining to the paintings was terminated.

Further, voxeljet acquired goods amounting to kEUR 0, kEUR 7, and kEUR 15 in 2019, 2018 and 2017 from ‘Schlosserei und Metallbau Ederer’, which is owned by the brother of Dr. Ingo Ederer, the Chief Executive Officer of voxeljet.

In addition, voxeljet received logistics services amounting to kEUR 56, kEUR 74 and kEUR 43 in 2019, 2018 and 2017 from ‘Andreas Schmid Logistik’, where the member of our Supervisory Board Dr. Stefan Sohn serves as Chief Financial Officer.

Moreover, voxeljet received orders amounting to kEUR 164, kEUR 175 and kEUR 244 in 2019, 2018 and 2017 from ‘Suzhou Meimai Fast Manufacturing Technology Co., Ltd., which is our minority shareholder for voxeljet China.

Further, voxeljet received orders amounting to kEUR 13, kEUR 0 and kEUR 0 in 2019, 2018 and 2017 from ‘DSCS Digital Supply Chain Solutions GmbH’, which is an associated company where we own 33.3%.

In addition, voxeljet employed Simon Franz as an intern, who is the son of voxeljet’s Chief Financial Officer Rudolf Franz. He received a salary of kEUR 9, kEUR 12 and kEUR 3 in 2019, 2018 and 2017, respectively.

Service Agreements

We have entered into service agreements with the members of our Management Board. See “Item 6. Directors, Senior Management and Employees—C. Board Practices.”

C. INTERESTS OF EXPERTS AND COUNSEL

Not applicable.

ITEM 8. FINANCIAL INFORMATION

A. CONSOLIDATED STATEMENTS AND OTHER FINANCIAL INFORMATION

See “Item 18. Financial Statements.”

Legal Proceedings

From time to time, we may be subject to various claims or legal, arbitration or administrative proceedings that arise in the ordinary course of our business. We are currently not a party to any legal, arbitration or administrative proceedings which, in the opinion of our management, may have or have had in the recent past, significant effects on our business, financial condition or results of operations, including governmental proceedings pending or known to be contemplated.

Dividend Policy

Neither we nor our legal predecessor, Voxeljet Technology GmbH, have ever declared or paid any cash dividends on our ordinary shares, and we have no present intention of declaring or paying any dividends in the foreseeable future. Any recommendation by our Management and Supervisory Boards to pay dividends, subject to compliance with applicable law and any contractual provisions that restrict or limit our ability to pay dividends, including under agreements for indebtedness that we may incur, will depend on many factors, including our financial condition, results of operations, legal requirements, capital requirements, business prospects and other factors that our Management and Supervisory Boards deem relevant.

All of our shares represented by ADSs have the same dividend rights as all of our other outstanding shares. Any distribution of dividends proposed by our Management and Supervisory Boards requires the approval of our shareholders at a shareholders' meeting. See "Item 10. Additional Information—B. Memorandum and Articles of Association," which incorporates by reference certain sections of our registration statement on Form F-1 (Registration No. 333-191213) that explain in more detail the procedures we must follow and the German law provisions that determine whether we are entitled to declare a dividend.

For information regarding the German withholding tax applicable to dividends and related United States refund procedures, see "Item 10. Additional Information—E. Taxation—German Taxation of ADSs."

B. SIGNIFICANT CHANGES

Except as set forth elsewhere in this annual report, no significant changes have occurred since December 31, 2019.

ITEM 9. THE OFFER AND LISTING

A. OFFER AND LISTING DETAILS

Our ADSs, each representing one-fifth of an ordinary share, have been listed on the NYSE since October 18, 2013. Our ADSs are listed for trading on the NYSE under the symbol "VJET."

B. PLAN OF DISTRIBUTION

Not applicable.

C. MARKETS

Our ADSs are listed on the NYSE under the symbol "VJET."

D. SELLING SHAREHOLDER

Not applicable.

E. DILUTION

Not applicable.

F. EXPENSES OF THE ISSUE

Not applicable.

ITEM 10. ADDITIONAL INFORMATION

A. SHARE CAPITAL

Not applicable.

B. MEMORANDUM AND ARTICLES OF ASSOCIATION

See the descriptions included in our registration statement on [Form F-1](#) (Registration No. 333-191213) under the headings “Description of Share Capital” and “Description of American Depository Shares,” which are incorporated herein by reference.

Registration of the Company with Commercial Register

We are a German stock corporation (*Aktiengesellschaft*, or *AG*) that is organized under the laws of Germany. On July 11, 2013, our Company was registered in the commercial register of Augsburg, Germany under the number HRB 27999.

C. MATERIAL CONTRACTS

We have not entered into any material contracts other than in the ordinary course of business and other than those described in “Item 4. Information on the Company—Business Overview,” “Item 7. Major Shareholders and Related Party Transactions—Related Party Transactions,” or elsewhere in this annual report.

D. EXCHANGE CONTROLS

There are currently no legal restrictions in Germany on international capital movements and foreign-exchange transactions, except in limited embargo circumstances (*Teilembargo*) relating to certain areas, entities or persons as a result of applicable resolutions adopted by the United Nations and the EU. Restrictions currently exist with respect to, among others, Belarus, Congo, Egypt, Eritrea, Guinea, Guinea-Bissau, Iran, Iraq, Ivory Coast, Lebanon, Liberia, Libya, North Korea, Somalia, South Sudan, Sudan, Syria, Tunisia, and Zimbabwe.

For statistical purposes, there are, however, limited notification requirements regarding transactions involving cross-border monetary transfers. With some exceptions, every corporation or individual residing in Germany must report to the German Central Bank (*Deutsche Bundesbank*) (i) any payment received from, or made to, a non-resident corporation or individual that exceeds € 12,500 (or the equivalent in a foreign currency) and (ii) any claim against, or liability payable to, a non-resident or corporation in excess of € 5 million (or the equivalent in a foreign currency) at the end of any calendar month. Payments include cash payments made by means of direct debit, checks and bills, remittances denominated in Euros and other currencies made through financial institutions, as well as netting and clearing arrangements.

E. TAXATION

German Taxation

The following discussion describes the material German tax consequences for a holder that is a U.S. person of acquiring, owning, and disposing of the ADSs. A holder that is a U.S. person (“U.S. treaty beneficiary”) is a resident of the United States for purposes of the Agreement between the Federal Republic of Germany and United States of America for the Avoidance of Double Taxation and the Prevention of Fiscal Evasion with respect to Taxes on Income and on Capital as of June 4, 2008 (*Abkommen zwischen der Bundesrepublik Deutschland und den Vereinigten Staaten von Amerika zur Vermeidung der Doppelbesteuerung und zur Verhinderung der Steuerverkürzung auf dem Gebiet der Steuern vom Einkommen und vom Vermögen und einiger anderer Steuern in der Fassung vom 4. Juni 2008*) (the “Treaty”) who is fully eligible for benefits under the Treaty.

A holder will be a U.S. treaty beneficiary entitled to full Treaty benefits in respect of the ADSs if it is, *inter alia*:

- the beneficial owner of the ADSs (and the dividends paid with respect thereto);
- a citizen or an individual resident of the United States, a corporation or other entity treated as a corporation for U.S. federal income tax purposes created or organized under the laws of the United States or any state thereof or the District of Columbia, an estate the income of which is subject to U.S. federal income tax without regard to its source, or a trust if a court within the United States is able to exercise primary supervision over the administration of the trust and one or more U.S. persons have the authority to control all substantial decisions of the trust, or the trust has elected to be treated as a domestic trust for U.S. federal income tax purposes;
- not also a resident of Germany for German tax purposes; and
- not subject to the limitation on benefits (*i.e.*, anti-treaty shopping) article of the Treaty that applies in limited circumstances.

Special rules apply to pension funds and certain other tax-exempt investors.

This discussion does not address the treatment of ADSs that are (i) held in connection with a permanent establishment or fixed base through which a U.S. treaty beneficiary carries on business or performs personal services in Germany or (ii) part of business assets for which a permanent representative in Germany has been appointed.

With the exception of the subsection “—General Rules for the Taxation of Shareholders Tax Resident in Germany” below, which provides an overview of dividend taxation with regards to the general principles applicable on tax residents in Germany, this discussion applies only to U.S. treaty beneficiaries that acquired ADSs in the initial offering and hold ADSs as capital assets for U.S. federal income tax purposes. It does not purport to be a comprehensive description of all tax considerations that may be relevant to a decision to purchase ADSs by any particular investor, including tax considerations that arise from rules of general application to all taxpayers or to certain classes of taxpayers that are generally assumed to be known by investors. In particular, this discussion does not address tax considerations applicable to a U.S. treaty beneficiary that may be subject to special tax rules, including, without limitation, a dealer in securities or currencies, a trader in securities that elects to use a mark-to-market method of accounting for securities holdings, banks, thrifts, or other financial institutions, U.S. expatriates, an insurance company, a tax-exempt organization, a person that holds ADSs as part of a hedge, straddle, conversion or other integrated transaction for tax purposes, a person that purchases or sells ordinary shares or ADSs as part of a wash sale for tax purposes, a person whose functional currency for tax purposes is not the U.S. dollar, a person subject to the U.S. alternative minimum tax, or a person that owns or is deemed to own 10% or more of the Company’s voting stock. In addition, the discussion does not address tax consequences to an entity treated as a partnership (or other pass-through entity) for U.S. federal income tax purposes that holds ADSs. The U.S. federal income tax treatment of each partner of the partnership generally will depend upon the status of the partner and the activities of the partnership. Prospective purchasers that are partners in a partnership holding ADSs should consult their own tax advisors.

This discussion is based on German tax laws, including, but not limited to interpretation circulars issued by German tax authorities, which are not binding on the courts, and the Treaty. It is based upon tax laws in effect at the time of preparation of this annual report (May 2020). These laws are subject to change, possibly on a retroactive basis. There is no assurance that German tax authorities will not challenge one or more of the tax consequences described in this discussion.

In addition, this discussion is based upon the assumption that each obligation in the deposit agreement and any related agreement will be performed in accordance with its terms. It does not purport to be a comprehensive or exhaustive description of all German or U.S. tax considerations that may be of relevance in the context of acquiring, owning and disposing of ADSs.

Prospective holders of ADSs should consult their own tax advisors regarding the German tax consequences of the purchase, ownership and disposition of ADSs in light of their particular circumstances, including the effect of any state, local, or other foreign or domestic laws or changes in tax law or interpretation.

German Taxation of ADSs

General

As of the date hereof, no published German tax court cases exist as to the German tax treatment of American Depositary Receipts (“ADRs”) or ADSs, but based on the interpretation circular regarding the taxation of ADRs issued by the German Federal Ministry of Finance (BMF-Schreiben) (dated May 24, 2013, reference number IV C 1-S2204/12/10003) (the “ADR Tax Circular”), for German tax purposes, although it is not free from doubt, the ADSs should represent a beneficial ownership interest in the underlying shares and qualify as ADRs for the purpose of the ADR Tax Circular. If the ADSs qualify as ADRs under the ADR Tax Circular, dividends would accordingly be attributable to U.S. treaty beneficiaries of the ADSs for tax purposes, and not to the legal owner of the ordinary shares (*i.e.*, the financial institution on behalf of whom the ordinary shares are stored at a domestic depository for the ADS holders), and U.S. treaty beneficiaries would be treated as holding an interest in the Company’s ordinary shares for German tax purposes. However, investors should note that interpretation circulars published by the German tax administration (including the ADR Tax Circular) are not binding on German courts, including German tax courts, and it is unclear whether a German tax court would follow the ADR Tax Circular in determining the German tax treatment of ADRs or ADSs. For the purpose of this German tax section it is assumed that the ADSs qualify as ADRs within the meaning of the ADR Tax Circular.

German Taxation of Dividends and Capital Gains

General Rules for the Taxation of Shareholders Tax Resident in Germany

This subsection provides an overview of dividend taxation with regards to the general principles applicable on tax residents in Germany.

The German dividend and capital gains taxation rules applicable to German tax residents require a distinction between shares held as private assets (*Privat-/Kapitalvermögen*) and shares held as business assets (*Betriebsvermögen*).

In case the shares are held as private assets, dividends and capital gains are taxed as investment income and are principally subject to 25% German flat income tax on capital income (*Abgeltungsteuer*) (plus a 5.5% solidarity surcharge (*Solidaritätszuschlag*) thereon, resulting in an aggregate rate of 26.375%), which is levied in the form of withholding tax (*Kapitalertragsteuer*). The shareholder is taxed on its gross personal investment income, less the saver’s tax-free allowance of € 801 for an individual or € 1,602 for a married couple filing taxes jointly. The deduction of income related expenses actually incurred is generally not possible. Private investors can apply to have their investment income assessed in accordance with the general rules on determining an individual’s tax bracket if this would result in a lower tax burden. In this case, the shareholder will be taxed on gross personal investment income, less the saver’s tax-free allowance of € 801 (€ 1,602 for married couples filing jointly), without deduction of income-related expenses actually incurred. If tax is initially withheld, it will be credited against the amount of personal income tax assessed against the shareholder.

Losses resulting from the disposal of shares can only be offset by capital gains from the sale of shares. If, however, a shareholder directly or indirectly held at least 1% of the share capital of the Company at any time during the five years preceding the sale, 60% of any capital gains resulting from the sale are taxable at the shareholder’s personal income tax rate (plus 5.5% solidarity surcharge thereon). Conversely, 60% of any capital losses are recognized for tax purposes.

In case the shares are held as business assets, the taxation depends on the legal form of the shareholder (*i.e.*, whether the shareholder is a corporation, an individual or a partnership). Irrespective of the legal form of the shareholder, dividends are also in this business assets scenario subject to the aggregate withholding tax rate of 26.375%. The withholding tax (*Kapitalertragsteuer*) is credited against the respective shareholder’s final (corporate) income tax liability. To the extent the amount withheld exceeds the (corporate) income tax liability, the withholding tax will be refunded, provided that certain requirements are met.

Special rules apply to financial institutions (*Kreditinstitute*), financial services providers (*Finanzdienstleistungsinstitute*), financial enterprises (*Finanzunternehmen*), life insurance and health insurance companies, and pension funds.

With regard to shareholders in the legal form of a *corporation*, dividends and capital gains are effectively 95% tax exempt from corporate income tax (including solidarity surcharge). However, with regards to dividends (not to capital gains) realized after February 28, 2013, the 95% corporate income tax exemption only applies if the corporation holds at least 10% of the shares in the Company at the beginning of the calendar year.

A circular issued by the Regional Tax Office Frankfurt/Main (*Verfügung der OFD*), dated December 2, 2013, reference number S 2750a A-19-St 52, provides for further comments on the scope of application of the 10% threshold.

Dividends are fully subject to trade tax (*Gewerbesteuer*), unless the shareholder holds at least 15% of the shares in the Company at the beginning of the tax assessment period. In the latter case, effectively 95% of the dividends are also exempt from trade tax. Capital gains, however, are, irrespective of the size of the shareholding, 95% exempt from trade tax. Losses from the sale of shares are not tax deductible for corporate income tax and trade tax purposes.

With regards to *individuals* holding shares as business assets, 60% of dividends and capital gains are taxed at the individual's personal income tax rate (plus 5.5% solidarity surcharge thereon). Correspondingly, only 60% of business expenses related to the dividends and capital gains are principally deductible for income tax purposes.

If shares are held as business assets of a commercial permanent establishment located in Germany, dividends are fully subject to trade tax, unless the sole proprietor holds at least 15% of the Company's shares at the beginning of the tax assessment period. In this case dividends are fully tax exempt from trade tax. With regards to capital gains, only 60% of the gains are subject to trade tax. 60% of any losses from the sale of shares are tax deductible for income tax and trade tax purposes. All or part of the trade tax is generally credited as a lump sum against the income taxes of the individual.

General rules for the Taxation of Shareholders Not Tax Resident in Germany

Non German resident holders of ADSs are subject to German taxation with respect to German source income (*beschränkte Steuerpflicht*). According to the ADR Tax Circular dated May 24, 2013, income from the shares should be attributed to the holder of the ADSs for German tax purposes. As a consequence, income from the ADSs should be treated as German source income (*beschränkte Steuerpflicht*).

The full amount of a dividend distributed by the Company to a non German resident shareholder which does not maintain a permanent establishment or other taxable presence in Germany is subject to (final) German withholding tax (*Kapitalertragsteuer*) at an aggregate rate of 26.375%. The basis for the withholding tax is the approval of the dividend for distribution by the Company's general shareholder meeting. The amount of the relevant taxable income is based on the gross amount in Euros; any currency differences shall be irrelevant.

German withholding tax is withheld and remitted to the German tax authorities by the disbursing agent (*i.e.*, the German bank, financial services institution, securities trading enterprise or securities trading bank (each as defined in the German Banking Act (*Kreditwesengesetz*) and in each case including a German branch of a foreign enterprise, but excluding a foreign branch of a German enterprise) that holds or administers the underlying shares in custody and disburses or credits the dividend income from the underlying shares or disburses or credits the dividend income from the underlying shares on delivery of the dividend coupons or disburses such dividend income to a foreign agent or the central securities depository (*Wertpapiersammelbank*) in terms of the German Depository Act (*Depotgesetz*)) holding the underlying shares in a collective deposit, if such central securities depository disburses the dividend income from the underlying shares to a foreign agent, regardless of whether or not a holder must report the dividend for tax purposes and regardless of whether or not a holder is a resident of Germany.

Pursuant to the Treaty, the German withholding tax generally may not exceed 15% of the gross dividends received by U.S. treaty beneficiaries. In case of any U.S. treaty beneficiary qualifying as a not tax transparent corporation and directly holding at least 10% or more of the Company's voting shares, the German withholding tax is capped at 5% of the gross dividends. The excess of the total withholding tax, including the solidarity surcharge, over the

maximum rate of withholding tax permitted by the Treaty is refunded to U.S. treaty beneficiaries upon application. For example, for a declared dividend of 100, a U.S. treaty beneficiary initially receives 73.625 (100 minus the 26.375% withholding tax). The U.S. treaty beneficiary is entitled to a partial refund from the German tax authorities in the amount of 11.375% of the gross dividend (of 100). As a result, the U.S. treaty beneficiary ultimately receives a total of 85 (85% of the declared dividend) following the refund of the excess withholding. However, investors should note that it is unclear how the German tax administration will apply the refund process to dividends on the ADSs and ADRs. Further, such refund is subject to the German anti-avoidance treaty shopping rule (as described below in section “—Withholding Tax Refund for U.S. Treaty Beneficiaries”).

German Taxation of Capital Gains of the U.S. Treaty Beneficiaries of the ADSs

The capital gains from the disposition of ADSs realized by a non German resident shareholder which does not maintain a permanent establishment or other taxable presence in Germany would be treated as German source income and subject to German tax (*beschränkte Steuerpflicht*) if such holder at any time during the five years preceding the disposition, directly or indirectly, held ADSs that represent 1% or more of the Company’s shares. If such holder had acquired the ADSs without consideration, the previous owner’s holding period and size of the holding would also be taken into account.

However, U.S. treaty beneficiaries are eligible for treaty benefits under the Treaty (as discussed above in the section “—German Taxation”). Pursuant to the Treaty, U.S. treaty beneficiaries are not subject to German tax even under the circumstances described in the preceding paragraph.

German statutory law requires the disbursing agent to levy withholding tax on capital gains from the sale of shares or other securities held in a custodial account in Germany. With regards to the German taxation of capital gains, disbursing agent means a German bank, a financial services institution, a securities trading enterprise or a securities trading bank (each as defined in the German Banking Act (*Kreditwesengesetz*) and, in each case including a German branch of a foreign enterprise, but excluding a foreign branch of a German enterprise) that holds the ADSs in custody or administers the ADSs for the investor or conducts sales or other dispositions and disburses or credits the income from the ADSs to the holder of the ADSs. The German statutory law does not explicitly condition the obligation to withhold taxes on capital gains being subject to taxation in Germany under German statutory law or on an applicable income tax treaty permitting Germany to tax such capital gains.

However, an interpretation circular issued by the German Federal Ministry of Finance (BMF-Schreiben) (dated January 18, 2016, reference number IV C 1-S2252/08/10004:017) provides that taxes need not be withheld when the holder of the custody account is not a resident of Germany for tax purposes and the income is not subject to German taxation. The interpretation circular further states that there is no obligation to withhold such tax even if the non-resident holder owns 1% or more of the shares of a German company. While interpretation circulars issued by the German Federal Ministry of Finance are only binding on the tax authorities but not on the tax courts, in practice, the disbursing agents nevertheless typically rely on guidance contained in such interpretation circulars. Therefore, a disbursing agent would only withhold tax at 26.375% on capital gains derived by a U.S. treaty beneficiary from the sale of ADSs held in a custodial account in Germany in the unlikely event that the disbursing agent did not follow this guidance. In this case, the U.S. treaty beneficiary should be entitled to claim a refund of the withholding tax from the German tax authorities under the Treaty (as described in the section “—Withholding Tax Refund for U.S. Treaty Beneficiaries”).

Withholding Tax Refund for U.S. Treaty Beneficiaries

U.S. treaty beneficiaries are generally eligible for treaty benefits under the Treaty (as discussed above in Section “—German Taxation”). Accordingly, U.S. treaty beneficiaries are entitled to claim a refund of the portion of the otherwise applicable 26.375% German withholding tax on dividends that exceeds the applicable Treaty rate. However, as previously discussed, investors should note that it is unclear how the German tax administration will apply the refund process to dividends on the ADSs and ADRs. Further, such refund is subject to the German anti-avoidance treaty shopping rule according to section 50d para. 3 of the German Income Tax Act (*Einkommensteuergesetz*). Generally, this rule requires that the U.S. treaty beneficiary (in case it is a non German resident company) maintains its own administrative substance and conducts its own business activities. In particular, a foreign company has no right to a full or partial refund to the extent persons holding ownership interests in the company would not be entitled to the refund if they derived the income directly and the gross income realized by the foreign company is not caused by the business activities of the foreign company, and there are either no economic or other valid reasons for the interposition of the

foreign company, or the foreign company does not participate in general commerce by means of a business organization with resources appropriate to its business purpose. However, this shall not apply if the foreign company's principal class of stock is regularly traded in substantial volume on a recognized stock exchange, or if the foreign company is subject to the provisions of the German Investment Tax Act (*Investmentsteuergesetz*).

Individual claims for refunds may be made on a separate form, which must be filed with the German Federal Central Tax Office (*Bundeszentralamt für Steuern*), An der Kuppe 1, 53225 Bonn, Germany. The form is available at the same address, on the German Federal Tax Office's website (www.bzst.de) or from the Embassy of the Federal Republic of Germany, 2300 M Street, NW, Washington DC 20037. Generally, the refund claim becomes time-barred after four years following the calendar year in which the dividend is received. As part of the individual refund claim, a U.S. treaty beneficiary must submit to the German tax authorities the original withholding certificate (or a certified copy thereof) issued by the disbursing agent and documenting the tax withheld, and an official certification of United States tax residency on IRS Form 6166. IRS Form 6166 may be obtained by filing a properly completed IRS Form 8802 with the Internal Revenue Service, P.O. Box 71052, Philadelphia, PA 19176-6052. Requests for certification must include the U.S. treaty beneficiary's name, social security number or employer identification number, the type of U.S. tax return filed, the tax period for which the certification is requested and a user fee of \$85 for individuals and \$185 for non-individuals. An online payment option is also available at www.irs.gov. If the electronic payment option is used, then the completed IRS Form 8802 and all required attachments should be mailed to Department of the Treasury, Internal Revenue Service, Philadelphia, PA 19255-0625. The Internal Revenue Service will send the certification on IRS Form 6166 to the U.S. treaty beneficiary, who must then submit the certification with the claim for refund of withholding tax.

Under a simplified refund procedure based on electronic data exchange (*Datenträgerverfahren*) a disbursing agent that is registered as a participant in the electronic data exchange procedure with the German Federal Central Tax Office (*Bundeszentralamt für Steuern*) may file an electronic collective refund claim on behalf of all of the U.S. treaty beneficiaries for whom it holds the company's ADSs in custody. However the simplified refund procedure only allows for a refund up to the regular tax rate provided in the Treaty. It is not possible to use the simplified refund procedure to claim a further refund, for example based on special privileges under the Treaty.

Due to the legal structure of the ADSs, only limited guidance of the German tax authorities exists on the practical application of this procedure with respect to the ADSs.

German Inheritance and Gift Tax (*Erbschaft- und Schenkungsteuer*)

It is unclear whether the German inheritance or gift tax applies to the transfer of the ADSs as the ADR Tax Circular does not refer explicitly to the German Inheritance and Gift Tax Act. However, if German inheritance or gift tax is applicable to ADSs, then under German domestic law, the transfer of the ordinary shares in the company and, as a consequence, the gratuitous transfer of the ADSs would be subject to German gift or inheritance tax if:

- (a) the decedent or donor or heir, beneficiary or other transferee (i) maintained his or her residence or a habitual abode in Germany or had its place of management or registered office in Germany at the time of the transfer, or (ii) is a German citizen who has spent no more than five consecutive years outside Germany without maintaining a residence in Germany or (iii) is a German citizen who serves for a German entity established under public law and is remunerated for his or her service from German public funds (including family members who form part of such person's household, if they are German citizens) and is only subject to estate or inheritance tax in his or her country of residence or habitual abode with respect to assets located in such country (special rules apply to certain former German citizens who neither maintain a residence nor have their habitual abode in Germany), or
- (b) at the time of the transfer, the ADSs are held by the decedent or donor as business assets forming part of a permanent establishment in Germany or for which a permanent representative in Germany has been appointed, or
- (c) the ADSs subject to such transfer form part of a portfolio that represents at the time of the transfer 10% or more of the registered share capital of the company and that has been held directly or indirectly by the decedent or donor, either alone or together with related persons.

[Table of Contents](#)

Under the Agreement between the Federal Republic of Germany and the United States of America for the avoidance of double taxation with respect to taxes on inheritances and gifts (*Abkommen zwischen der Bundesrepublik Deutschland und den Vereinigten Staaten von Amerika zur Vermeidung der Doppelbesteuerung auf dem Gebiet der Nachlass-, Erbschaft- und Schenkungsteuern in der Fassung vom 21. Dezember 2000*) (the “United States-Germany Inheritance and Gifts Tax Treaty”), a transfer of ADSs by gift or upon death is not subject to German inheritance or gift tax if the donor or the transferor is domiciled in the United States, within the meaning of the United States-Germany Inheritance and Gift Tax Treaty, and is neither a citizen of Germany nor a former citizen of Germany and, at the time of the transfer, the ADSs are not held by the decedent or donor as business assets forming part of a permanent establishment in Germany or for which a permanent representative in Germany has been appointed.

Notwithstanding the foregoing, in case the heir, transferee or other beneficiary (i) has, at the time of the transfer, his or her residence or habitual abode in Germany, or (ii) is a German citizen who has spent no more than five consecutive years outside Germany without maintaining a residence in Germany or (iii) is a German citizen who serves for a German entity established under public law and is remunerated for his or her service from German public funds (including family members who form part of such person’s household, if they are German citizens) and is only subject to estate or inheritance tax in his or her country of residence or habitual abode with respect to assets located in such country (or special rules apply to certain former German citizens who neither maintain a residence nor have their habitual abode in Germany), the transferred ADSs are subject to German inheritance or gift tax.

If, in this case, Germany levies inheritance or gift tax on the ADSs with reference to the heir’s, transferee’s or other beneficiary’s residence in Germany or his or her German citizenship, and the United States also levies federal estate tax or federal gift tax with reference to the decedent’s or donor’s residence (but not with reference to the decedent’s or donor’s citizenship), the amount of the U.S. federal estate tax or the U.S. federal gift tax, respectively, paid in the United States with respect to the transferred ADSs is credited against the German inheritance or gift tax liability, provided the U.S. federal estate tax or the U.S. federal gift tax, as the case may be, does not exceed the part of the German inheritance or gift tax, as computed before the credit is given, which is attributable to the transferred ADSs. A claim for credit of the U.S. federal estate tax or the U.S. federal gift tax, as the case may be, may be made within one year of the final determination (administrative or judicial) and payment of the U.S. federal estate tax or the U.S. federal gift tax, as the case may be, provided that the determination and payment are made within ten years of the date of death of the decedent or of the date of the making of the gift by the donor. Similarly, U.S. state-level estate or gift taxes are also creditable against the German inheritance or gift tax liability to the extent that U.S. federal estate or gift tax is creditable.

United States Taxation of ADSs and Ordinary Shares

The following discussion describes the material U.S. federal income tax consequences that are relevant with respect to the acquisition, ownership and disposition of the ADSs and ordinary shares by a U.S. holder (as defined below) as in effect on the date of this annual report. The information provided below is based on the Internal Revenue Code of 1986, as amended, or the Code, Internal Revenue Service, or IRS, rulings and pronouncements, and judicial decisions all as now in effect and all of which are subject to change or differing interpretations, possibly with retroactive effect. This summary addresses only U.S. federal income tax considerations of U.S. holders that will hold ADSs or ordinary shares as capital assets. It does not provide a complete analysis of all potential tax considerations. In particular, this summary does not address all of the tax considerations applicable to a particular holder of the ADSs or ordinary shares in light of the holder’s circumstances (for example, financial institutions; insurance companies; dealers or traders in securities; currencies or notional principal contracts; persons that will hold ADSs or ordinary shares as part of a hedging or conversion transaction or as a position in a straddle or other integrated transactions for U.S. federal income tax purposes; persons that have a functional currency other than the U.S. dollar; persons that own (or are deemed to own) 10% or more (by voting power) of our share capital; regulated investment companies, real estate investment trusts; tax-exempt entities; persons who hold ADSs or ordinary shares through partnerships or other pass-through entities; tax-deferred or other retirement accounts; certain former citizens or residents of the United States; or persons deemed to sell ADSs or ordinary shares under the constructive sale provisions of the Code). Finally, the summary does not describe the effect of the U.S. federal estate and gift tax laws on U.S. holders or the effects of any applicable foreign, state or local laws.

For purposes of this summary, a “U.S. holder” is a beneficial owner of ADSs or ordinary shares that for U.S. federal income tax purposes, is (1) an individual who is a citizen or resident of the United States, (2) a corporation, or an entity treated as a corporation for U.S. federal income tax purposes, created or organized in or under the laws of the

United States or any state of the United States, including the District of Columbia, (3) an estate, the income of which is subject to U.S. federal income taxation regardless of its source, or (4) a trust, if it (i) is subject to the primary supervision of a U.S. court and the control of one or more U.S. persons or (ii) has a valid election in effect under applicable U.S. Treasury Regulations to be treated as a U.S. person. A “non-U.S. holder” is a beneficial owner of the ADSs or ordinary shares, other than a partnership or entity treaty as a partnership, that is not a U.S. holder.

If a partnership (including an entity or arrangement, domestic or foreign, treated as a partnership for U.S. federal income tax purposes) holds ADSs or ordinary shares, the tax treatment of a partner in the partnership will depend upon the status of the partner and the activities of the partnership. A holder of ADSs or ordinary shares that is a partnership, and partners in such partnership, should consult their own tax advisors about the U.S. federal income and estate tax consequences of purchasing, owning and disposing of the ADSs or ordinary shares.

Each prospective holder of ADSs should consult its own tax advisors regarding the U.S. federal, state and local or other tax consequences of acquiring, owning and disposing of the company’s ADSs in light of their particular circumstances. U.S. holders should also review the discussion under “German Taxation of ADSs” for the German tax consequences to a U.S. holder of the ownership of the ADSs.

General

In general, and taking into account the earlier assumptions, a U.S. holder of ADSs is treated as the owner of the ordinary shares represented by such ADSs. Accordingly, exchanges of ordinary shares for ADSs, and ADSs for ordinary shares, respectively, generally will not be subject to U.S. federal income tax.

Distributions

Under the United States federal income tax laws, and subject to the discussion below under “Additional United States Federal Income Tax Consequences – PFIC Rules,” the gross amount of any distribution that is actually or constructively received by a U.S. holder with respect to its ordinary shares (including shares deposited in respect of ADSs) will be a dividend includable in gross income of a U.S. holder as ordinary income to the extent the amount of such distribution is paid out of our current and accumulated earnings and profits, as determined for U.S. federal income tax purposes. To the extent the amount of such distribution exceeds our current and accumulated earnings and profits as so computed, it will be treated first as a non-taxable return of capital to the extent of such U.S. holder’s adjusted tax basis in its ADSs or ordinary shares, and to the extent the amount of such distribution exceeds such adjusted tax basis, will be treated as gain from the sale of the ADSs or ordinary shares. If you are a non-corporate U.S. holder, dividends paid to you that constitute qualified dividend income will be taxable to you at a preferential rate (rather than the higher rates of tax generally applicable to items of ordinary income) provided that you hold our ADSs or ordinary shares for more than 60 days during the 121-day period beginning 60 days before the ex-dividend date and meet other holding period requirements. If we are a passive foreign investment company (as discussed below under “—Additional United States Federal Income Tax Consequences—PFIC Rules”), distributions paid by us with respect ADSs or ordinary shares will not be eligible for the preferential income tax rate. Prospective investors should consult their own tax advisors regarding the taxation of distributions under these rules.

You must include any German tax withheld from the dividend payment in this gross amount even though you do not in fact receive it. The gross amount of the dividend is taxable to you when you receive the dividend, actually or constructively. Dividends paid on ADSs will not be eligible for the dividends-received deduction generally available to corporate U.S. holders. The gross amount of any dividend paid in foreign currency will be included in the gross income of a U.S. holder in an amount equal to the U.S. dollar value of the foreign currency calculated by reference to the exchange rate in effect on the date the dividend distribution is includable in the U.S. holder’s income, regardless of whether the payment is in fact converted into U.S. dollars. If the foreign currency is converted into U.S. dollars on the date of receipt by the depository, in the case of ADSs, or the U.S. holder, in the case of ordinary shares, a U.S. holder generally should not be required to recognize foreign currency gain or loss in respect of the dividend. If the foreign currency received is not converted into U.S. dollars on the date of receipt, a U.S. holder will have a basis in the foreign currency equal to its U.S. dollar value on the date of receipt. Any gain or loss on a subsequent conversion or other disposition of the foreign currency will be treated as ordinary income or loss, and will generally be income or loss from sources within the United States for foreign tax credit limitation purposes. The amount of any distribution of property other than cash will be the fair market value of the property on the date of the distribution, less the sum of any encumbrance assumed by the U.S. holder.

For foreign tax credit purposes, our dividend distributions will generally constitute income from sources outside the United States and be “passive” income. Depending on your particular circumstances, you may be eligible, subject to a number of complex limitations, to claim a foreign tax credit in respect of any foreign withholding taxes imposed on dividends received on our ADSs or ordinary shares. The amount of the qualified dividend income, if any, paid to a U.S. holder that is subject to the reduced dividend income tax rate and that is taken into account for purposes of calculating the U.S. holder’s U.S. foreign tax credit limitation must be reduced by the rate differential portion of the dividend. If you do not elect to claim a foreign tax credit for foreign tax withheld, you may instead claim a deduction, for U.S. federal income tax purposes, for the foreign tax withheld, but only for a year in which you elect to do so for all creditable foreign income taxes. The rules governing the foreign tax credit are complex. Prospective investors should consult their own tax advisors regarding the implications of the foreign tax credit provisions for them, in light of their particular situation.

U.S. Taxation of Sale or Other Disposition

Subject to the discussion below under “—Additional United States Federal Income Tax Consequences—PFIC Rules,” a U.S. holder will generally recognize a gain or loss for U.S. federal income tax purposes upon the sale or other disposition of ADSs or ordinary shares in an amount equal to the difference between the U.S. dollar value of the amount realized from such sale or other disposition and the U.S. holder’s tax basis in such ADSs or ordinary shares. Such gain or loss generally will be capital gain or loss. Capital gain of a non-corporate U.S. holder recognized on the sale or other disposition of ADSs or ordinary shares held for more than one year is generally eligible for a reduced rate of taxation. The gain or loss will generally be income or loss from sources within the United States for foreign tax credit limitation purposes. The deductibility of capital losses is subject to limitations.

A U.S. holder that receives foreign currency on the sale or other disposition of ADSs or ordinary shares will realize an amount equal to the U.S. dollar value of the foreign currency on the date of sale (or, in the case of cash basis and electing accrual basis taxpayers, the U.S. dollar value of the foreign currency on the settlement date) provided that the ADSs or ordinary shares, as the case may be, are treated as being “traded on an established securities market.” If a U.S. holder receives foreign currency upon a sale or exchange of ADSs or ordinary shares, gain or loss, if any, recognized on the subsequent sale, conversion or disposition of such foreign currency will be ordinary income or loss, and will generally be income or loss from sources within the United States for foreign tax credit limitation purposes. However, if such foreign currency is converted into U.S. dollars on the date received by the U.S. holder, a cash basis or electing accrual U.S. holder should not recognize any gain or loss on such conversion.

Redemption

A redemption of ADSs or the ordinary shares underlying such ADSs by us will be treated as a sale of the redeemed ADSs or ordinary shares by the U.S. holder or as a distribution to the U.S. holder (which is taxable as described above under “—Distributions”).

Additional United States Federal Income Tax Consequences

PFIC Rules. Special adverse U.S. federal income tax rules apply to U.S. holders owning shares of a passive foreign investment company, or PFIC. In general, if you are a U.S. holder, we will be a PFIC with respect to you if for any taxable year in which you held our ADSs or ordinary shares: (i) at least 75% of our gross income for the taxable year is passive income (the “income test”) or (ii) at least 50% of the value, determined on the basis of a quarterly average, of our assets is attributable to assets that produce or are held for the production of passive income (the “asset test”). The determination of whether we are a PFIC will be made annually. Accordingly, it is possible that we may become a PFIC in the current or any future taxable year due to changes in our asset or income composition. The composition of income and assets will be affected by whether, how, and how quickly, we spend any cash we currently hold.

Passive income for purposes of the income test generally includes dividends, interest, royalties, rents (other than certain rents and royalties derived in the active conduct of a trade or business), annuities and gains from the disposition of assets that produce passive income. Any cash we hold generally will be treated as held for the production of passive income for the purpose of the PFIC test, and any income generated from cash or other liquid assets generally will be treated as passive income for such purpose. If a foreign corporation owns at least 25% by value of the stock of

another corporation, the foreign corporation is treated for purposes of the PFIC tests as owning its proportionate share of the assets of the other corporation, and as receiving directly its proportionate share of the other corporation's income.

We believe that we were not a PFIC for our taxable year ending December 31, 2019. However, since the determination of whether we are a PFIC is based upon such factual matters as our market capitalization and the valuation of our assets and upon certain assumptions and methodologies in which we have based our analysis, there can be no assurance that the IRS will agree with our position. Furthermore, because we have valued our goodwill for purposes of the asset test based on the market value of our equity, a further decline in the value of our equity due to fluctuations in the price of our ADSs and ordinary shares could result in us becoming a PFIC for our taxable year ending on December 31, 2019 or for future taxable years.

If we were to be treated as a PFIC, the U.S. federal income tax consequences to a U.S. holder of the acquisition, ownership, and disposition of our ADSs or ordinary shares will depend on whether such U.S. holder makes an election to treat us as a "qualified electing fund" or "QEF" under Section 1295 of the Code (a QEF Election) or a mark-to-market election under Section 1296 of the Code (a Mark-to-Market Election). A U.S. holder who makes a QEF election will be taxed currently on such U.S. holder's pro rata share of our annual ordinary income and capital gains (each separately stated). We do not intend to furnish holders with the information necessary to make a QEF Election. A U.S. holder may make a Mark-to-Market Election if our shares or ADSs are "marketable stock," and would, as a result of such election, include as ordinary income the excess of the fair market value of such U.S. holder's ADSs or ordinary shares at year-end over such U.S. holder's basis in those ADSs or ordinary shares. In addition, any gain recognized upon a sale of ADSs or ordinary shares would be taxed as ordinary income in the year of sale.

A U.S. Holder that does not make either a QEF Election or a Mark-to-Market Election (a Non-Electing U.S. Holder) would be subject to special adverse tax rules with respect to (i) "excess distributions" received on our ADSs or ordinary shares and (ii) any gain recognized upon a sale or other disposition (including a pledge) of our ADSs or ordinary shares. A Non-Electing U.S. Holder would be treated as if it had realized such gain and certain "excess distributions" ratably over its holding period for our ADSs or ordinary shares and would be taxed at the highest tax rate in effect for each such year to which the gain was allocated, together with an interest charge in respect of the tax attributable to each such year. Special rules apply for calculating the amount of the foreign tax credit with respect to "excess distributions" by a PFIC.

With certain exceptions, a Non-Electing U.S. Holder's ADSs or ordinary shares will be treated as stock in a PFIC if we were a PFIC at any time during the U.S. holder's holding period in for its ordinary shares or ADSs, even if we are not currently a PFIC.

Dividends that a U.S. holder receives from us will not be eligible for the special tax rates applicable to qualified dividend income if we are treated as a PFIC either in the taxable year of the distribution or the preceding taxable year, but instead will be taxable at rates applicable to ordinary income.

If we were to be treated as a PFIC, owners of our ADSs or ordinary shares (including, potentially, indirect owners) would be required to file an information report with respect to such interest together with their tax returns, subject to certain exceptions. U.S. holders are urged to consult their tax advisors regarding the application of these rules to their ownership of the ADSs.

Medicare Tax. Certain U.S. holders who are individuals, estates and trusts will be required to pay an additional 3.8% tax on some or all of their "net investment income," which generally includes its dividend income and net gains from the disposition of our ADSs or ordinary shares. U.S. holders should consult their own tax advisors regarding the applicability of this additional tax on their particular situation.

Information with Respect to Foreign Financial Assets. Owners of "specified foreign financial assets" with an aggregate value in excess of \$50,000 (and in some circumstances, a higher threshold) may be required to file an information report with respect to such assets on their tax returns. "Specified foreign financial assets" may include financial accounts maintained by foreign financial institutions, as well as the following, but only if they are not held in accounts maintained by financial institutions: (i) stocks and securities issued by non-U.S. persons, (ii) financial instruments and contracts held for investment that have non-U.S. issuers or counterparties, and (iii) interests in foreign entities. U.S. holders are urged to consult their tax advisors regarding the application of this legislation to their ownership of the ADSs and ordinary shares.

Backup Withholding and Information Reporting. Backup withholding and information reporting requirements will generally apply to certain payments to U.S. holders of dividends on ADSs or ordinary shares. We, our agent, a broker or any paying agent, may be required to withhold tax from any payment that is subject to backup withholding unless the U.S. holder (1) is an exempt payee, or (2) provides the U.S. holder's correct taxpayer identification number and complies with applicable certification requirements. Payments made to U.S. holders by a broker upon a sale of our ADSs or ordinary shares will generally be subject to backup withholding and information reporting. If the sale is made through a foreign office of a foreign broker, however, the sale will generally not be subject to either backup withholding or information reporting. This exception may not apply if the foreign broker is owned or controlled by U.S. persons, or is engaged in a U.S. trade or business.

Backup withholding is not an additional tax. Any amounts withheld from a payment to a U.S. holder of ADSs or ordinary shares under the backup withholding rules can be credited against any U.S. federal income tax liability of the U.S. holder, provided the required information is timely furnished to the IRS. A U.S. holder generally may obtain a refund of any amounts withheld under the backup withholding rules that exceeds the U.S. holder's income tax liability by filing a refund claim with the IRS. Prospective investors should consult their own tax advisors as to their qualification and procedure for exemption from backup withholding.

The above description is not intended to constitute a complete analysis of all tax consequences relating to the purchase, ownership or disposition of the ADSs or ordinary shares. Investors deciding on whether or not to invest in ADSs or ordinary shares should consult their own tax advisors concerning the tax consequences of their particular situations.

F. DIVIDENDS AND PAYING AGENTS

Not applicable.

G. STATEMENT BY EXPERTS

Not applicable.

H. DOCUMENTS ON DISPLAY

We previously filed with the SEC our registration statements on Form F-1 (Registration No. 333-191213 and 333-194843), as amended, including the prospectuses contained therein, to register our ordinary shares. We have also filed with the SEC a related registration statement on F-6 (Registration No. 333-191526) to register the ADSs.

We are subject to the periodic reporting and other informational requirements of the Exchange Act. Under the Exchange Act, we are required to file reports and other information with the SEC. Specifically, we are required to file annually a Form 20-F within four months after the end of each fiscal year, which is December 31. Copies of reports and other information, when so filed, may be inspected without charge and may be obtained at prescribed rates at the public reference facilities maintained by the Securities and Exchange Commission at 100 F Street, N.E., Room 1580, Washington, D.C. 20549. The SEC also maintains a website at www.sec.gov that contains reports, proxy and information statements, and other information regarding registrants that make electronic filings with the SEC using its EDGAR system. As a foreign private issuer, we are exempt from the rules under the Exchange Act prescribing the furnishing and content of quarterly reports and proxy statements, and officers, directors and principal shareholders are exempt from the reporting and short-swing profit recovery provisions contained in Section 16 of the Exchange Act.

I. SUBSIDIARY INFORMATION

Not applicable.

ITEM 11. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

We are exposed to market risk from fluctuations in interest rates and foreign currency exchange rates which may adversely affect our results of operations and financial condition. We seek to minimize these risks through regular operating and financing activities and, when we consider it to be appropriate, through the use of derivative financial instruments. We do not purchase, hold or sell derivative financial instruments for trading or speculative purposes.

Interest Rates

We assess our exposure to market risk for changes in interest rates as low, as our loans have entirely fixed interest rates, with one exception. An immediate 10% change in interest rates would not have a material effect on our financial condition or results of operations. For the first tranche of the loan received from the EIB amounting to € 10.0 million, there exists a cash-settled warrant at the maturity date (5 years after draw down), after the occurrence of a trigger event, or on the expiration date (10 years after draw down).

Equity price risk

In addition, for the first tranche of the loan received from the EIB, the cash-settled warrant is dependent on the Company's share price. Changes in the Company's share price will affect the value of an equity forward derivative instrument (increasing share prices as compared to the share price at disbursement date will lead to a negative fair value of the derivative, decreasing share prices will lead to a positive fair value of the derivative).

Foreign Exchange Rates

We transact business globally and are subject to risks associated with fluctuating foreign exchange rates. The countries outside of the eurozone in which we sell our products and services have not historically been highly inflationary. Approximately 69.0%, 58.0% and 44.0% of our revenues were derived from sales outside of the eurozone region in 2019, 2018 and 2017, respectively. Receivables denominated in a foreign currency are initially recorded at the exchange rate at the transaction date and subsequently remeasured in Euros based on period-end exchange rates. Transaction gains and losses that arise from exchange rate fluctuations are charged to income.

ITEM 12. DESCRIPTION OF SECURITIES OTHER THAN EQUITY SECURITIES

American Depositary Shares

Fees and Expenses

Citibank, N.A. serves as the depositary for our ADSs. Holders of our ADSs are required to pay the following fees to the depositary under the terms of our deposit agreement:

Service	Fees
(1) Issuance of ADSs upon deposit of shares (excluding issuances as a result of distributions of shares described in (4) below)	Up to U.S. 5¢ per ADS issued
(2) Cancellation of ADSs	Up to U.S. 5¢ per ADS canceled
(3) Distribution of cash dividends or other cash distributions (<i>i.e.</i> , sale of rights or other entitlements)	Up to U.S. 5¢ per ADS held
(4) Distribution of ADSs pursuant to (i) stock dividends or other free stock distributions or (ii) exercise of rights to purchase additional ADSs.	Up to U.S. 5¢ per ADS held
(5) Distribution of securities other than ADSs or rights to purchase additional ADSs (<i>i.e.</i> , spin-off shares)	Up to U.S. 5¢ per ADS held
(6) ADS Services	Up to U.S. 5¢ per ADS held on the applicable record date(s) established by the depositary

Holders of our ADSs are responsible for paying certain charges such as:

- taxes (including applicable interest and penalties) and other governmental charges;

Table of Contents

- the registration fees as may from time to time be in effect for the registration of ordinary shares on the share register and applicable to transfers of ordinary shares to or from the name of the custodian, the depositary or any nominees upon the making of deposits and withdrawals, respectively;
- certain cable, telex and facsimile transmission and delivery expenses;
- the expenses and charges incurred by the depositary in the conversion of foreign currency;
- the fees and expenses incurred by the depositary in connection with compliance with exchange control regulations and other regulatory requirements applicable to ordinary shares, ADSs and ADRs; and
- the fees and expenses incurred by the depositary, the custodian, or any nominee in connection with the servicing or delivery of deposited property.

ADS fees and charges payable upon (i) deposit of ordinary shares against issuance of ADSs and (ii) surrender of ADSs for cancellation and withdrawal of ordinary shares are charged to the person to whom the ADSs are delivered (in the case of ADS issuances) and to the person who delivers the ADSs for cancellation (in the case of ADS cancellations). In the case of ADSs issued by the depositary into Depository Trust Company (“DTC”), or presented to the depositary via DTC, the ADS issuance and cancellation fees and charges are charged to the DTC participant(s) receiving the ADSs or the DTC participant(s) surrendering the ADSs for cancellation, as the case may be, on behalf of the beneficial owner(s) and will be charged by the DTC participant(s) to the account(s) of the applicable beneficial owner(s) in accordance with the procedures and practices of the DTC participant(s) as in effect at the time. ADS fees and charges in respect of distributions and the ADS service fee are charged to the holders as of the applicable ADS record date. In the case of distributions of cash, the amount of the applicable ADS fees and charges is deducted from the funds being distributed. In the case of (i) distributions other than cash and (ii) the ADS service fee, holders as of the ADS record date will be invoiced for the amount of the ADS fees and charges. For ADSs held through DTC, the ADS fees and charges for distributions other than cash and the ADS service fee are charged to the DTC participants in accordance with the procedures and practices prescribed by DTC and the DTC participants in turn charge the amount of such ADS fees and charges to the beneficial owners for whom they hold ADSs.

In the event of refusal to pay the depositary fees, the depositary may, under the terms of the deposit agreement, refuse the requested service until payment is received or may set off the amount of the depositary fees from any distribution to be made to the ADS holder.

Note that the fees and charges you may be required to pay may vary over time and may be changed by us and by the depositary. You will receive prior notice of such changes.

The depositary may reimburse us for certain expenses incurred by us in respect of the ADR program by making available a portion of the ADS fees charged in respect of the ADR program or otherwise, upon such terms and conditions as we and the depositary agree from time to time.

PART II

ITEM 13. DEFAULTS, DIVIDEND ARREARAGES AND DELINQUENCIES

The Company has breached its Total Net Financial Debt to EBITDA ratio financial covenant under the Finance Contract with the European Investment Bank (“EIB”) as of December 31, 2019, under which the Company has to comply with certain minimum thresholds. As a result of the breach, the Company has reclassified the loan of kEUR 10,000 from a non-current liability to a current liability as of December 31, 2019.

These circumstances raise material uncertainties that cast significant doubt about voxeljet’s ability to continue as a going concern.

After negotiations with the EIB; which started in November 2019, in March 2020, voxeljet received a waiver for the covenant breach in 2019 and also a grace period until March 31, 2021, for which voxeljet can rectify the breach and during which the EIB cannot demand immediate repayment. In return, the Company registered a first rank land charge on its land and facility located in Friedberg, Germany as collateral in favor of the EIB in March 2020.

Management is currently in negotiation to potentially draw down the second tranche up to kEUR 8,000 under the Finance Contract with the EIB.

ITEM 14. MATERIAL MODIFICATIONS TO THE RIGHTS OF SECURITY HOLDERS AND USE OF PROCEEDS

There have been no material modifications to the rights of security holders for the year ended on December 31, 2019.

ITEM 15 CONTROLS AND PROCEDURES

(a) Audit Committee Investigation

As described elsewhere in this Annual Report, based on the Audit Committee Investigation which was conducted in March 2020 after the fiscal year end, the Audit Committee identified relatively weak and informal processes with respect to some aspects of the review and tracking of financial reporting and disclosure. Specifically, the Audit Committee found deficiencies in the Company's risk management and controls relating to the EIB loan, including regarding its relevance for the Company's going-concern discussions as well as deficiencies in an appropriate early-warning system with respect to consequences to the Company from non-compliance with financial covenants. To address these deficiencies, our management and the Audit Committee are working together on a remediation plan to implement in fiscal year 2020. For more information on the Audit Committee Investigation, see "Item 5. Operating and Financial Review and Prospects—A. Audit Committee Investigation."

(b) Disclosure Controls and Procedures

Our management, including our Chief Executive Officer and Chief Financial Officer, have conducted an evaluation of the effectiveness of the design and operation of our disclosure controls and procedures (as defined in Rule 13a-15(e) under the Securities Exchange Act of 1934, as amended (the Exchange Act)) as of December 31, 2019. Our Chief Executive Officer and Chief Financial Officer concluded that, as a result of material weaknesses in internal control over financial reporting as described below, our disclosure controls and procedures were not effective as of December 31, 2019. For purposes of Rule 13a-15(e), the term disclosure controls and procedures means controls and other procedures of an issuer that are designed to ensure that information required to be disclosed by the issuer in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by an issuer in the reports that it files or submits under the Exchange Act is accumulated and communicated to the issuer's management, including its Chief Executive Officer and Chief Financial Officer, or persons performing similar functions, as appropriate to allow timely decisions regarding required disclosure.

(c) Management's Annual Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Exchange Act Rules 13a-15(f) and 15d-15(f). The Company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB). A company's internal control over financial reporting includes those policies and procedures that: (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) Provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls

[Table of Contents](#)

may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

A material weakness is a deficiency, or combination of deficiencies, in internal control over financial reporting such that there is a reasonable possibility that a material misstatement of the Company's annual or interim financial statements will not be prevented or detected on a timely basis.

Management assessed the effectiveness of our internal control over financial reporting as of December 31, 2019 using the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission in Internal Control – Integrated Framework (2013) (the "COSO 2013 Framework"). Based on the assessment and those criteria, management concluded that our internal control over financial reporting was not effective as of December 31, 2019 due to material weaknesses in our internal control over financial reporting described below.

Control Environment

Our Audit Committee did not exercise sufficient oversight responsibilities for management's design, implementation and conduct of internal control over the five components of the COSO 2013 Framework.

Our process to evaluate the competence and expertise necessary to support the growth and complexity of the business, its financial reporting, and response to address shortcomings was not sufficiently implemented during 2019. As a result, we did not have a sufficient number of adequately trained personnel within the organization and appropriate oversight of outsourced service providers with assigned responsibility and accountability for the design, effective operation, and documentation of internal control over financial reporting.

We did not provide sufficient education to personnel on the COSO 2013 Framework and their financial reporting and related internal control responsibilities.

Risk Assessment

We did not have sufficient knowledge of IFRS, including understanding of new accounting standards, in order for the preparation of financial statements in accordance with IFRS and consideration of the impact of changes on our internal control over financial reporting.

We did not have an effective risk assessment process to identify and assess the financial reporting risks caused by changes in the operating environment, business operations, personnel or IT systems and to make necessary changes to our financial reporting processes and related internal controls to manage those risks.

Information and Communication

We did not have sufficient processes and controls in place to ensure the timely identification and communication of relevant and reliable information sourced internally and externally to financial reporting personnel, management, and our Supervisory Board, to enable appropriate evaluation and disclosure of such information in the Company's financial reporting processes.

Monitoring

We did not have a process to track, communicate, and aggregate the deficiencies identified through both internal and external sources. We did not have policies and practices to evaluate the severity of the identified deficiencies.

We did not have a timely process to remediate our existing control deficiencies.

Control Activities

We did not have a proper process in place to sufficiently and timely identify and assess new events and transactions in order to consider necessary adjustments to our system of internal control over financial reporting.

[Table of Contents](#)

Financial Statement Close and Reporting Process

- Ineffective design and implementation, and operation of controls over the completeness, existence and accuracy of the financial statement close and reporting process and financial statement disclosures.
- Ineffective design and implementation, and operation of controls over the completeness, existence, accuracy and presentation of the consolidated statements of cash flows.

Significant Unusual Transaction

- Ineffective design and implementation, and operation of controls over non-standard transactions, including significant unusual transactions, which are not timely identified and reviewed in sufficient detail by personnel with appropriate technical expertise to ensure that the accounting treatment in accordance with IFRS is appropriate.

Debt Covenant Compliance

- Ineffective design and implementation, and operation of controls over the monitoring of compliance with financial covenants within the Company's debt agreements to ensure the appropriate accounting treatment, including disclosure requirements, in accordance with IFRS.

Management Review Controls

- We did not adequately design and document management review controls to sufficiently address management's expectations, criteria for investigation, follow-up on outliers and the level of precision used in the performance of the review controls.

Journal Entries

- Ineffective design and implementation, and operation of controls over the initiation, authorization, and recording of manual journal entries.

These control deficiencies resulted in several material and immaterial misstatements to the preliminary consolidated financial statements that were corrected prior to the issuance of the consolidated financial statements. These deficiencies create a reasonable possibility that a material misstatement to the consolidated financial statements will not be prevented or detected on a timely basis, and therefore we concluded that the deficiencies represent material weaknesses in our internal control over financial reporting and our internal control over financial reporting was not effective as of December 31, 2019.

Notwithstanding the identified material weaknesses, management believes that the consolidated financial statements and related notes thereto included in this annual report on Form 20-F present fairly, in all material respects, the financial position of the Company as of December 31, 2019 and 2018, and the results of its operations and its cash flows for each of the years in the three-year period ended December 31, 2019, in conformity with International Financial Reporting Standards as issued by the International Accounting Standards Board.

(d) Attestation Report of the Registered Public Accounting Firm

This annual report does not include a report of the Company's independent registered public accounting firm due to the Company's status as a non-accelerated filer in 2019.

(e) Remediation Plan

Management is actively engaged in the planning for, and implementation of, remediation efforts to address the material weakness identified, specifically relating to the accounting and presentation of complex, non-routine transactions. Management will undertake the following changes to remediate the material weakness described above:

[Table of Contents](#)

- Management will implement controls to review all new or modified contractual arrangements on a regular basis in order to timely determine the appropriate accounting treatment, as well as engage the assistance of external accounting advisors with sufficient technical expertise.
- The Company is currently in the process of implementing the consolidation module within SAP, which will be fully integrated with the existing modules used by the Company. The expected go-live date of the consolidation module in SAP is by the end of fiscal year 2020.
- The Company will engage external accounting advisors to deliver trainings to management and employees on their financial reporting and related internal control responsibilities.
- The Company will design and implement controls over the monitoring of compliance with financial covenants within the Company's debt agreements to ensure the appropriate accounting treatment, including disclosure requirements, in accordance with IFRS.

In addition, as disclosed herein, management and the Audit Committee are working together on a remediation plan to implement in response to the results of the Audit Committee Investigation. Our management believes that these actions will remediate the material weaknesses in internal control over financial reporting described above. The remediation efforts shall be implemented during the financial year 2020. In addition to the improvements described above, management's remediation plan, based on the results of the Audit Committee Investigation, will also focus on:

- The implementation of a formal process of auditor communication
- The implementation of a system to regularly monitor all the financial covenants arising out of the Financial arrangements
- The centralization of maintenance of all meeting minutes

(f) Changes in internal control over financial reporting

As described above under "Remediation Plan," we are undertaking a broad range of remedial actions to address the material weaknesses in our internal control over financial reporting identified during 2018 and 2019. We made the following changes to our internal control over financial reporting (as such term is defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) during the fiscal year ended December 31, 2019. Although certain changes and improvements have been made, we concluded the material weaknesses described above continued to exist as of December 31, 2019.

Control Environment

- An annual audit and remediation plan was approved and continuously monitored by the Audit Committee. Internal Audit meets with the Audit Committee on a monthly basis to discuss progress of the remediation effort, as well as results of management testing.
- Targets related to ICFR responsibilities were included in the annual goals and targets of the Senior Management and the bonus incentives for the year were linked to the achievement of these targets.

Risk Assessment

- Risk assessment was performed to scope our components and significant accounts and disclosures at the process level based on planning materiality. The risk assessment was approved by the Audit Committee at the beginning of the fiscal year.
- Fraud risk assessment was performed at the process level. Controls were designed and implemented over identified fraud risks within individual processes.

Monitoring Activities

[Table of Contents](#)

- The internal audit function performed management testing throughout the year. Results of the testing were reported to management and the Audit Committee on a monthly basis.
- The Company further developed and documented detailed policies and procedures regarding the business processes for significant accounts, and implemented new and enhanced existing control activities to address identified risks.

Information and Communication

- Management has hired dedicated controllers, with the appropriate expertise to assume assigned responsibility and accountability for internal controls, in the Sales, Systems and After-Sales departments. Management also enhanced the information and communication activities by having more frequent discussions with the dedicated controllers regarding significant business transactions and the potential impact of these transactions.
- All new or modified contracts are tracked in our SAP contracting module and are subject to review by our legal department.

General IT Controls

- Management has established effective General Information Technology Control environment over the SAP ERP as of December 31, 2019 to ensure that the automated process level controls and information produced and maintained in the IT systems are relevant and reliable.
- The Company revised its policies and procedures for evaluating the completeness and accuracy of end-user computing spreadsheets used in the performance of key controls.

Control Activities

- The Company has established formal written policies and procedures to assign clear responsibility for the performance of controls and to instruct the control operators how frequently and when the control activities should be executed.
- The Company has implemented additional controls at the component and group level to ensure the intercompany transactions are completely and accurately identified, reconciled, evaluated and eliminated.
- The Company has implemented additional controls to assess the existence of the impairment indicators and to perform an impairment assessment of the Company's long-lived assets in accordance with IAS 36, *Impairment of Assets*.

ITEM 16. RESERVED

ITEM 16A. AUDIT COMMITTEE FINANCIAL EXPERT

Our Supervisory Board has determined that the chairman of our Audit Committee, Peter Nietzer, qualifies as an "audit committee financial expert" within the meaning of this Item 16A. Our Supervisory Board has determined that Peter Nietzer and each of the other members of the Audit Committee is independent under the requirements of the NYSE and Rule 10A-3 of the Exchange Act.

ITEM 16B. CODE OF ETHICS

We have adopted a written code of business conduct and ethics, or code of conduct, which outlines the principles of legal and ethical business conduct under which we do business. The code of conduct applies to all of our

[Table of Contents](#)

Supervisory Board members, Management Board members and employees. The full text of the code of conduct is available on our website at www.voxeljet.de. This website address is included in this annual report as an inactive textual reference only. The information and other content appearing on our website are not part of this annual report.

No waivers have been granted to the code of conduct since its adoption.

ITEM 16C. PRINCIPAL ACCOUNTANT FEES AND SERVICES

The following table sets forth the fees billed to us by our independent auditors during the fiscal years ended December 31, 2018, and 2019:

	December 31,	
	2019	2018
	(€ in thousands)	
Audit fees	€ 1,094	€ 921
Audit-related fees	--	113
Tax fees	--	--
All other fees	--	--
Total	€ 1,094	€ 1,034

Audit fees include the audit of our financial statements, the review of interim financial information and SEC registration statements, and statutory audits. Audit-related fees in 2018 include services related to a Form F-3 filing.

Pre-Approval Policies and Procedures

The advance approval of the Audit Committee or members thereof, to whom approval authority has been delegated, is required for all audit and non-audit services provided by our auditors. All services provided by the principal auditing firm in 2019 detailed in the table above were approved by the Audit Committee.

ITEM 16D. EXEMPTIONS FROM THE LISTING STANDARDS FOR AUDIT COMMITTEES

Not applicable.

ITEM 16E. PURCHASES OF EQUITY SECURITIES BY THE ISSUER AND AFFILIATED PURCHASERS

None.

ITEM 16F. CHANGE IN REGISTRANT’S CERTIFYING ACCOUNTANT

In November 2019, our Supervisory Board recommended the appointment of PricewaterhouseCoopers GmbH Wirtschaftsprüfungsgesellschaft (“PwC”) to serve as our new independent accountants for the year ending December 31, 2020 and will dismiss KPMG AG Wirtschaftsprüfungsgesellschaft upon completion of the audit of the Company’s consolidated financial statements as of and for the year ended December 31, 2019 and the issuance of the report thereon. Subject to approval at the 2020 Annual General Meeting, we anticipate that our Audit Committee will appoint PwC as our independent auditors and that following their appointment, PwC will be responsible for the issuance of the audit report to be included in our annual report on Form 20-F for the year ended December 31, 2020.

KPMG’s reports on our consolidated statements of financial position as of December 31, 2019 and 2018, the related consolidated statements of comprehensive loss, changes in equity, and cash flows for each of the years in the three-year period ended December 31, 2019, and the related notes (collectively, the “consolidated financial statements”), did not contain any adverse opinion or disclaimer of opinion, nor were they qualified or modified as to uncertainty, audit scope, or accounting principles, except as follows:

KPMG’s report on the consolidated financial statements of voxeljet AG and subsidiaries as of and for the years ended December 31, 2019 and 2018, contained a separate paragraph stating that “the Company has suffered recurring losses and negative cash flows from operations and has breached debt covenants as of December 31, 2019, which raises

[Table of Contents](#)

substantial doubt about its ability to continue as a going concern. Management's plans in regard to these matters are also described in Note 2.

The consolidated financial statements do not include any adjustments that might result from the outcome of this uncertainty.”

KPMG's audit report on the consolidated financial statements of voxeljet AG and subsidiaries as of and for the years ended December 31, 2019 and 2018, also contained a separate paragraph stating that “As discussed in Note 3 to the consolidated financial statements, the Company changed its method of accounting for leases as of January 1, 2019 due to the adoption of IFRS 16, Leases.”

KPMG's audit report on the effectiveness of internal control over financial reporting as of December 31, 2018 did not contain any adverse opinion or disclaimer of opinion, nor were they qualified or modified as to uncertainty, audit scope, or accounting principles, except that KPMG's report indicates that voxeljet AG did not maintain effective internal control over financial reporting as of December 31, 2018 because of the effect of material weaknesses on the achievement of the objectives of the control criteria and contains an explanatory paragraph that states “The Company did not have an effective control environment including:

- oversight by the Audit Committee over the processes and internal controls over the five components of the COSO 2013 Framework;
- evaluation of the competence and expertise necessary to support the growth and complexity of the business, its financial reporting, and to develop an appropriate response to address any shortcomings effectively during 2018, and sufficient number of adequately trained personnel within the organization with assigned responsibility and accountability for the conduct of internal control over financial reporting or to supervise and review the work product of third party service providers engaged to assist the Company in its general information technology controls;
- effective controls to hold personnel accountable for their internal control responsibilities through performance measurement plans and goals, and
- sufficient training of personnel on the COSO 2013 Framework and their financial reporting and related internal control responsibilities.

The Company did not have an effective risk assessment process including:

- sufficient knowledge of IFRS to assess the application of new or modified accounting standards to its significant accounting policies and to assess the required changes to its processes and related internal controls over financial reporting;
- an effective continuous risk assessment process to identify and assess the financial reporting risks caused by changes in the operating environment, business operations, personnel or IT systems and to make necessary changes to its financial reporting processes and related internal controls to manage those risks;
- consideration of materiality in the determination of the significant components of the entity, significant accounts and disclosures at the entity and component level, relevant assertions over the accounts and disclosures, and the determination of risk tolerance to business process activities and the precision of related internal controls; and
- design of control activities that are responsive to the identified fraud risks, including the risk of bias and management override of controls.

The Company did not have effective information and communication processes and controls including:

- sufficient processes and controls in place to ensure the timely identification and communication of relevant and reliable information sourced internally and externally to financial reporting personnel, management and Supervisory Board.

[Table of Contents](#)

The Company did not have effective monitoring activities including:

- effective controls to ascertain whether the processes and internal controls related to the five COSO 2013 Framework components (and underlying principles) were present and functioning;
- effective controls to establish recurring monitoring activities over process level controls related to routine transactions or unusual nonrecurring transactions;
- an effective, functioning internal audit group to monitor the effectiveness of internal controls; and
- an effective process and controls to timely process to remediate existing control deficiencies.

The Company did not have effective control activities including:

- development of adequate written policies and procedures to support the effective implementation and operation of the controls;
- effective control activities at the transaction level over certain significant accounts to mitigate the risk of material misstatement in financial reporting;
- effective general information technology controls (GITCs) over the information technology system that supports the Company's financial reporting processes to ensure that all relevant and reliable information used in financial reporting is protected, verifiable and retained, specifically:
 - inappropriate user access controls in the SAP ERP system to ensure appropriate segregation of duties and to adequately restrict user and privileged access to appropriate personnel commensurate with their job responsibilities;
 - ineffective program change management controls, specifically the Company did not properly document the nature of the program changes, performance of testing and the approval;
- effective automated process-level controls and manual controls that are dependent upon the completeness and accuracy of information derived from IT systems;
- effective end-user computing controls over manual spreadsheets used in the financial reporting process;
- effective process-level controls activities including:

Financial Statement Close and Reporting Process

- Ineffective design and implementation, and operation of controls over the completeness, existence and accuracy of the financial statement close and reporting process and financial statement disclosures;
- Ineffective design and implementation, and operation of controls over the completeness, existence, accuracy and presentation of the consolidated statements of cash flows;
- Ineffective design and implementation, and operation of controls to ensure intercompany transactions are completely and accurately identified, reconciled, evaluated and eliminated;

Adoption of New Accounting Standards

- Ineffective design and implementation and operation of controls over the completeness, existence, accuracy and presentation of account balances and disclosures related to the adoption of the new accounting standards, IFRS 15, Revenue from Contracts with Customers, and IFRS 9, Financial Instruments;

Impairment

- Ineffective design and implementation and operation of controls to assess the existence of impairment indicators and to perform an impairment assessment of the Company's long-lived assets in accordance with IAS 36, Impairment of Assets including ineffective design and implementation and operation of controls over the appropriateness of the assumptions and methodology used to measure the fair value of cash-generating units."

The Company has exited its accelerated filer status and has filed as a non-accelerated filer with the 2019 annual report on this Form 20-F. KPMG did not issue a report on the effectiveness of internal control over financial reporting as of December 31, 2019 as the Company was exempted from the Section 404(b) requirement to include an auditor's report on the effectiveness of internal control over financial reporting.

During the two fiscal years ended December 31, 2019 and 2018 and the subsequent interim period through May 7, 2020, there were no: (1) disagreements with KPMG on any matter of accounting principles or practices, financial statement disclosure, or auditing scope or procedure, which disagreements if not resolved to KPMG's satisfaction would have caused them to make reference in connection with their opinion to the subject matter of the disagreement, or reportable events as that term is defined in Item 16F(a)(1)(v)(A) through (D) of Form 20-F, except that KPMG advised voxeljet AG of the material weaknesses described above concluding that internal controls over financial reporting were not effective as of December 31, 2018 as well as management's lack of sufficient communication to KPMG on the breach of financial covenants of the EIB loan as of June 30 and December 31, 2019 as further described under Item 5A leading to the Audit Committee Investigation.

During the fiscal year ended December 31, 2019 and 2018 and the subsequent period through May 7, 2020, we did not consult with PwC regarding the application of accounting principles to a specified transaction or the type of audit opinion that might be rendered by PwC on our consolidated financial statements or the effectiveness of internal control over financial reporting. Further, PwC did not provide any written or oral advice that was an important factor considered by us in reaching a decision as to any such accounting, auditing or financial reporting matter or any matter being the subject of disagreement or defined as a reportable event or any other matter as defined in Item 16F(a)(1)(v) of Form 20-F.

We have provided KPMG with a copy of the foregoing disclosure and have requested that KPMG furnish to us a letter addressed to the Securities and Exchange Commission stating whether KPMG agrees with such disclosure. We have included as Exhibit 16.1 to this Form 20-F a copy of the letter from KPMG as required by Item 16F(a)(3) of Form 20-F.

ITEM 16G. CORPORATE GOVERNANCE

In general, under Section 303A.11 of the NYSE Listed Company Manual, foreign private issuers such as us are permitted to follow home country corporate governance practices instead of certain provisions of the NYSE Listed Company Manual without having to seek individual exemptions from the NYSE as long as we disclose in the annual report the significant ways in which our corporate governance practices differ from those followed by U.S. companies. In addition, we also may qualify for certain exemptions under the NYSE Listed Company Manual as a foreign private issuer that may affect our corporate governance practices.

The significant differences between the corporate governance practices that we follow and those set forth in the NYSE Listed Company Manual are described below:

- Section 303A.01 of the NYSE Listed Company Manual requires listed companies to have a majority of independent directors. There is no requirement under German law that the majority of members of a supervisory board be independent, and the rules of procedure of our Supervisory Board provide that the Supervisory Board should be composed of a majority of independent members, though this is not a mandatory requirement. All current members of our Supervisory Board are independent.
- Section 303A.04(b) of the NYSE Listed Company Manual requires all companies listed on the NYSE to have a written nominating committee charter. German law does not require a separate charter for a nominating committee. Instead, the responsibilities and authority of our Compensation and Nominating

Committee are set forth in the rules of procedure of our Supervisory Board and in the applicable German laws.

- Section 303A.05(b) of the NYSE Listed Company Manual requires all companies listed on the NYSE to have a written compensation committee charter. German law does not require a separate charter for a compensation committee. Instead, the responsibilities and authority of our Compensation and Nominating Committee are set forth in the rules of procedure of our Supervisory Board and in the applicable German laws.
- Section 303A.07(a) of the NYSE Listed Company Manual requires each member of the audit committee of a listed company to be financially literate and also requires that at least one audit committee member have accounting or related financial management expertise. German law requires only that one supervisory board member have knowledge in the areas of accounting or auditing. Accordingly, the rules of procedure of our Supervisory Board stipulate that the chairman of our Audit Committee shall have special knowledge and experience of the application of accounting principles and internal control procedures. The chairman of the Audit Committee, Peter Nietzer, fulfills these requirements. Although we believe that all members of our Audit Committee are financially literate, neither German law, nor the rules of procedure of our Supervisory Board, require all members of our Audit Committee to be financially literate.
- Section 303A.07(b) of the NYSE Listed Company Manual requires all companies listed on the NYSE to have a written audit committee charter. German law does not require a separate charter for an audit committee. Instead, the responsibilities and authority of our Audit Committee are set forth in the rules of procedure of our Supervisory Board and in the applicable German laws.
- Section 303A.09 of the NYSE Listed Company Manual requires all listed companies to adopt and disclose corporate governance guidelines. German law does not require a company to adopt separate corporate governance guidelines. Instead, we follow the German Corporate Governance Code as described above. In addition, certain of the subjects to be addressed in the corporate governance guidelines pursuant to Section 303A.09 are contained in the rules of procedure of our Supervisory Board.

ITEM 16H. MINE SAFETY DISCLOSURE

Not applicable.

PART III

ITEM 17. FINANCIAL STATEMENTS

We have elected to provide financial statements pursuant to Item 18.

ITEM 18. FINANCIAL STATEMENTS

See the following items starting at page F-1:

- (a) Report of Independent Registered Public Accounting Firm
- (b) Consolidated Statements of Financial Position as of December 31, 2019 and 2018
- (c) Consolidated Statements of Comprehensive Loss for the years ended December 31, 2019, 2018, and 2017
- (d) Consolidated Statements of Changes in Equity for the years ended December 31, 2019, 2018, and 2017
- (e) Consolidated Statements of Cash Flows for the years ended December 31, 2019, 2018, and 2017
- (f) Notes to the Consolidated Financial Statements

ITEM 19. EXHIBITS

Exhibit Number	Description of Exhibit
1.1	Articles of Association of voxeljet AG, as amended (incorporated by reference to Exhibit 3.1 to the Company's Form 6-K, filed with the Securities and Exchange Commission (the "Commission") on November 27, 2018).
1.2	Rules of Procedure of the Supervisory Board of voxeljet AG (incorporated by reference to Exhibit 3.2 to the Company's Registration Statement on Form F-1 (No. 333-191213), filed with the Commission on October 7, 2013).
1.3	Rules of Procedure of the Management Board of voxeljet AG (incorporated by reference to Exhibit 3.3 to the Company's Registration Statement on Form F-1 (No. 333-191213), filed with the Commission on October 7, 2013).
2.1	Form of specimen of ordinary registered share certificate and English translation (incorporated by reference to Exhibit 4.1 to the Company's Registration Statement on Form F-1 (No. 333-191213), filed with the Commission on October 11, 2013).
2.2	Form of Deposit Agreement (incorporated by reference to Exhibit 99-a to the Company's Registration Statement on Form F-6 (No. 333-191526), filed with the Commission on October 15, 2013).
2.3	Form of American Depositary Receipt (included in Exhibit 2.2).
2.4*	Description of Securities registered under Section 12 of the Exchange Act.
4.1†	Cross License Agreement between voxeljet AG (formerly known as Voxeljet Technology GmbH) and BEGO Medical GmbH, dated August 21, 2012 (English translation) (incorporated by reference to Exhibit 10.3 to the Company's Registration Statement on Form F-1 (No. 333-191213), filed with the Commission on October 7, 2013).
4.2†	Nonexclusive Patent License and Sublicense Agreement between Z Corporation and voxeljet AG (formerly known as Voxeljet Technology GmbH), dated August 16, 2004 (incorporated by reference to Exhibit 10.4 to the Company's Registration Statement on Form F-1 (No. 333-191213), filed with the Commission on October 7, 2013).
4.3	First Amendment to the Nonexclusive Patent License and Sublicense Agreement between Z Corporation and voxeljet AG (formerly known as Voxeljet Technology GmbH), dated March 31, 2011 (incorporated by reference to Exhibit 10.5 to the Company's Registration Statement on Form F-1 (No. 333-191213), filed with the Commission on October 7, 2013).
4.4†	Patent and Know-How Transfer Agreement between voxeljet AG (formerly known as Generis GmbH) and The ExOne Company (formerly known as Extrude Hone GmbH), dated June 27, 2003 (incorporated by reference to Exhibit 10.6 to the Company's Registration Statement on Form F-1 (No. 333-191213), filed with the Commission on October 7, 2013).
4.5†	Amendment to Patent and Know-How Transfer Agreement between voxeljet AG (formerly known as Voxeljet Technology GmbH) and Prometal RCT GmbH, dated July 14, 2009 (incorporated by reference to Exhibit 10.7 to the Company's Registration Statement on Form F-1 (No. 333-191213), filed with the Commission on October 7, 2013).
4.6†	Form of Finance Contract between European Investment Bank and voxeljet AG, dated November 9, 2017 (incorporated by reference to Exhibit 99.2 to the Company's Report on Form 6-K, filed with the Commission on November 9, 2017).
4.7†	Form of First Demand Guarantee Agreement between European Investment Bank and voxeljet America Inc., dated November 9, 2017. (incorporated by reference to Exhibit 99.3 to the Company's Report on Form 6-K, filed with the Commission on November 9, 2017).
4.8†	Form of Synthetic Warrant Agreement between European Investment Bank and voxeljet AG, dated November 9, 2017. (incorporated by reference to Exhibit 99.4 to the Company's Report on Form 6-K, filed with the Commission on November 9, 2017).
4.9**	Waiver Letter relating to Articles 7.1, 7.5 and 9.1 of the Finance Contract between European Investment Bank and voxeljet AG, dated March 12, 2020 (incorporated by reference to Exhibit 10.1 to the Company's Report on Form 6-K filed with the Commission on March 18, 2020).

[Table of Contents](#)

Exhibit Number	Description of Exhibit
8.1*	Subsidiaries of voxeljet AG.
12.1*	Certification of Chief Executive Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
12.2*	Certification of Chief Financial Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
13.1*	Certification of Chief Executive Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
13.2*	Certification of Chief Financial Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
15.1*	Consent of KPMG AG Wirtschaftsprüfungsgesellschaft.
16.1*	Acknowledgment letter from KPMG AG Wirtschaftsprüfungsgesellschaft.
101.INS	XBRL Instance Document
101.SCH	XBRL Taxonomy Extension Schema Document
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document
101.LAB	XBRL Taxonomy Extension Label Linkbase Document
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document

* Filed herewith.

† Confidential treatment has been granted with respect to certain portions of this exhibit. Omitted portions have been filed separately with the Commission.

** Confidential portions of this exhibit have been redacted in accordance with Item 601(b)(10) of Regulation S-K promulgated by the Commission. Omitted portions will be filed separately with the Commission upon the Commission's request.

SIGNATURE

The registrant hereby certifies that it meets all of the requirements for filing on Form 20-F and that it has duly caused and authorized the undersigned to sign this annual report on its behalf.

VOXELJET AG

/s/ Rudolf Franz

Name: Rudolf Franz

Title: *Chief Financial Officer*

Date: May 7, 2020

voxeljet AG

INDEX TO FINANCIAL STATEMENTS

	<u>Page</u>
Consolidated Financial Statements of voxeljet AG:	
Report of Independent Registered Public Accounting Firm	F-2
Consolidated Statements of Financial Position as of December 31, 2019 and 2018	F-4
Consolidated Statements of Comprehensive Loss for the years ended December 31, 2019, 2018, and 2017	F-5
Consolidated Statements of Changes in Equity for the years ended December 31, 2019, 2018, and 2017	F-6
Consolidated Statements of Cash Flows for the years ended December 31, 2019, 2018, and 2017	F-7
Notes to the Consolidated Financial Statements	F-8

Report of Independent Registered Public Accounting Firm

To the Stockholders and Supervisory Board
voxeljet AG:

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated statements of financial position of voxeljet AG and subsidiaries (the Company) as of December 31, 2019 and 2018, the related consolidated statements of comprehensive loss, changes in equity, and cash flows for each of the years in the three-year period ended December 31, 2019, and the related notes (collectively, the consolidated financial statements). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2019 and 2018, and the results of its operations and its cash flows for each of the years in the three-year period ended December 31, 2019, in conformity with International Financial Reporting Standards as issued by the International Accounting Standards Board.

Going Concern

The accompanying consolidated financial statements have been prepared assuming that the Company will continue as a going concern. As discussed in Note 2 to the consolidated financial statements, the Company has suffered recurring losses and negative cash flows from operations and has breached debt covenants as of December 31, 2019 that raise substantial doubt about its ability to continue as a going concern. Management's plans in regard to these matters are also described in Note 2. The consolidated financial statements do not include any adjustments that might result from the outcome of this uncertainty.

Change in Accounting Principle

As discussed in Note 3 to the consolidated financial statements, the Company has changed its method of accounting for leases as of January 1, 2019 due to the adoption of IFRS 16, Leases.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits, we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

[Table of Contents](#)

/s/ KPMG AG Wirtschaftsprüfungsgesellschaft

We have served as the Company's auditor since 2007.

Munich, Germany

May 7, 2020

voxeljet AG

CONSOLIDATED STATEMENTS OF FINANCIAL POSITION

	Notes	December 31,	
		2019	2018 ⁽¹⁾
		(€ in thousands)	
Current assets		31,513	37,936
Cash and cash equivalents	3	4,368	7,402
Financial assets	3, 12	7,408	12,905
Trade receivables	3, 7	5,915	6,030
Inventories	8	12,459	10,064
Income tax receivables		39	13
Other assets		1,324	1,522
Non-current assets		30,792	31,416
Financial assets	3, 12	2,019	2,234
Intangible assets	10	1,356	1,420
Property, plant and equipment	10, 21	27,343	27,675
Investments in joint venture		30	33
Other assets		44	54
Total assets		62,305	69,352
		December 31,	
		2019	2018⁽¹⁾
		(€ in thousands)	
Current liabilities		18,855	6,302
Trade payables	3	2,797	2,945
Contract liabilities	3	2,623	817
Financial liabilities	3, 12, 20	11,290	850
Other liabilities and provisions	11	2,145	1,690
Non-current liabilities		10,119	16,575
Deferred tax liabilities		69	76
Financial liabilities	3, 12, 20	9,866	16,321
Other liabilities and provisions	11	184	178
Equity		33,331	46,475
Subscribed capital	24	4,836	4,836
Capital reserves	24	88,077	86,803
Accumulated deficit	3	(60,367)	(46,400)
Accumulated other comprehensive income		798	1,201
Equity attributable to the owners of the company		33,344	46,440
Non-controlling interests		(13)	35
Total equity and liabilities		62,305	69,352

See accompanying notes to these consolidated financial statements.

⁽¹⁾ The Company has initially applied IFRS 16 as of January 1, 2019, using the modified retrospective approach. Under this approach, comparative information is not restated and the cumulative effect of initially applying IFRS 16 is recognized in retained earnings at the date of initial application. For further information, see Note 3 of the consolidated financial statements.

voxeljet AG

CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS

	Notes	Year Ended December 31,		
		2019	2018 ⁽¹⁾	2017 ^{(1) (2) (3)}
(€ in thousands, except share and share data)				
Revenues	3, 18	24,602	26,009	23,178
Cost of sales	13	(17,426)	(16,864)	(13,853)
Gross profit		7,176	9,145	9,325
Selling expenses		(7,118)	(7,332)	(6,474)
Administrative expenses		(6,952)	(5,587)	(5,129)
Research and development expenses		(7,212)	(6,334)	(5,528)
Other operating expenses	14	(945)	(751)	(1,844)
Other operating income	14	2,143	1,297	1,001
Operating loss		(12,908)	(9,562)	(8,649)
Finance expense	15	(1,458)	(1,143)	(190)
Finance income	15	144	1,952	365
Financial result	15	(1,314)	809	175
Loss before income taxes		(14,222)	(8,753)	(8,474)
Income tax expense	16	(9)	(11)	(80)
Net loss		(14,231)	(8,764)	(8,554)
Other comprehensive income (loss) that may be reclassified subsequently to profit or loss		(403)	(179)	505
Total comprehensive loss		(14,634)	(8,943)	(8,049)
Loss attributable to:				
Owner of the Company		(13,967)	(8,728)	(8,538)
Non-controlling interests		(264)	(36)	(16)
		(14,231)	(8,764)	(8,554)
Total comprehensive loss attributable to:				
Owner of the Company		(14,370)	(8,907)	(8,033)
Non-controlling interests		(264)	(36)	(16)
		(14,634)	(8,943)	(8,049)
Weighted average number of ordinary shares outstanding		4,836,000	3,940,636	3,720,000
Loss per share - basic/diluted (EUR)		(2.94)	(2.21)	(2.30)

See accompanying notes to these consolidated financial statements.

⁽¹⁾ The Company has initially applied IFRS 16 as of January 1, 2019, using the modified retrospective approach. Under this approach, comparative information is not restated and the cumulative effect of initially applying IFRS 16 is recognized in retained earnings at the date of initial application. For further information, see Note 3 of the consolidated financial statements.

⁽²⁾ Comparative figures for the year ended December 31, 2017 were restated for immaterial errors.

⁽³⁾ The Company has initially applied IFRS 15 and IFRS 9 as of January 1, 2018. Under the transition methods chosen, comparative information has not been restated.

voxeljet AG

CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY

(€ in thousands)

	Attributable to the owners of the company				Total	Non-controlling interests	Total equity
	Subscribed capital	Capital reserves	Accumulated deficit	Accumulated other comprehensive gain (loss)			
Balance at January 1, 2017	3,720	75,827	(28,971)	873	51,449	87	51,536
Loss for the period	--	--	(8,538)	--	(8,538)	(16)	(8,554)
Net changes in fair value of available for sale financial assets	--	--	--	37	37	--	37
Foreign currency translation	--	--	--	470	470	--	470
Deferred tax	--	14	--	--	14	--	14
Equity-settled share-based payment	--	386	--	--	386	--	386
Balance at December 31, 2017 ^{(1) (2) (3)}	3,720	76,227	(37,509)	1,380	43,818	71	43,889
Adjustment on initial application of IFRS 15	--	--	(100)	--	(100)	--	(100)
Adjustment on initial application of IFRS 9	--	--	(63)	--	(63)	--	(63)
Adjusted balance at January 1, 2018	3,720	76,227	(37,672)	1,380	43,655	71	43,726
Loss for the period	--	--	(8,728)	--	(8,728)	(36)	(8,764)
Net changes in fair value of available for sale financial assets	--	--	--	(119)	(119)	--	(119)
Foreign currency translation	--	--	--	(60)	(60)	--	(60)
Capital increase	1,116	9,972	--	--	11,088	--	11,088
Equity-settled share-based payment	--	604	--	--	604	--	604
Balance at December 31, 2018 ⁽¹⁾	4,836	86,803	(46,400)	1,201	46,440	35	46,475
Loss for the period	--	--	(13,967)	--	(13,967)	(264)	(14,231)
Net changes in fair value of debt investments at FVOCI	--	--	--	174	174	--	174
Foreign currency translations	--	--	--	(577)	(577)	--	(577)
Equity-settled share-based payment	--	671	--	--	671	--	671
Share-based payment transaction with the non-controlling shareholder of a subsidiary	--	603	--	--	603	216	819
Balance at December 31, 2019	4,836	88,077	(60,367)	798	33,344	(13)	33,331

See accompanying notes to these consolidated financial statements.

⁽¹⁾ The Company has initially applied IFRS 16 as of January 1, 2019, using the modified retrospective approach. Under this approach, comparative information is not restated and the cumulative effect of initially applying IFRS 16 is recognized in retained earnings at the date of initial application. For further information, see Note 3 of the consolidated financial statements.

⁽²⁾ Comparative figures for the year ended December 31, 2017 were restated for immaterial errors.

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voxeljet AG
CONSOLIDATED STATEMENTS OF CASH FLOWS

	Year Ended December 31,		
	2019	2018 ⁽¹⁾	2017 ^{(1) (2) (3)}
(€ in thousands)			
Cash Flow from operating activities			
Loss for the period	(14,231)	(8,764)	(8,554)
Depreciation and amortization	4,211	3,506	3,163
Foreign currency exchange differences on loans to subsidiaries	(828)	(340)	1,056
Share-based compensation expense	671	604	386
Change in impairment of trade receivables	15	227	237
Non-cash expense on financial liabilities	874	781	17
Change in fair value of derivative equity forward	215	(1,877)	(352)
Change in inventory allowance	(21)	(417)	(515)
Loss on disposal of property, plant and equipment	354	--	--
Other	60	68	105
Change in working capital	1,861	(1,502)	(2,373)
Trade and other receivables, inventories and current assets	(757)	(1,556)	(2,697)
Trade payables	358	(310)	629
Other liabilities, contract liabilities and provisions	2,286	375	(310)
Income tax payable/receivables	(26)	(11)	5
Total	(6,819)	(7,714)	(6,830)
Cash Flow from investing activities			
Payments to acquire property, plant and equipment and intangible assets	(1,100)	(3,812)	(3,626)
Proceeds from disposal of financial assets	8,373	10,475	4,077
Payments to acquire financial assets	(2,725)	(8,690)	(5,542)
Other	--	--	156
Total	4,548	(2,027)	(4,935)
Cash Flow from financing activities			
Repayment of bank overdrafts and lines of credit	--	(58)	(167)
Repayment of sale and leaseback obligation	--	(324)	(383)
Repayment of lease liabilities (2018 and 2017: Repayment of finance lease obligations)	(397)	(37)	(51)
Repayment of long-term debt	(969)	(2,764)	(732)
Proceeds from issuance of long-term debt	529	1,639	12,612
Proceeds from issuance of shares	--	11,088	--
Total	(837)	9,544	11,279
Net increase (decrease) in cash and cash equivalents	(3,108)	(197)	(486)
Cash and cash equivalents at beginning of period	7,402	7,569	7,849
Changes to cash and equivalents due to foreign exchanges rates	74	30	206
Cash and cash equivalents at end of period	4,368	7,402	7,569
Supplemental Cash Flow Information			
Interest paid	320	231	210
Interest received	93	42	16
Property, plant and equipment added under finance lease	--	--	123

See accompanying notes to these consolidated financial statements.

⁽¹⁾ The Company has initially applied IFRS 16 as of January 1, 2019, using the modified retrospective approach. Under this approach, comparative information is not restated and the cumulative effect of initially applying IFRS 16 is recognized in retained earnings at the date of initial application. For further information, see Note 3 of the consolidated financial statements.

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NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

Basis of preparation

1. The reporting entity

voxeljet AG (in the following referred to as ‘voxeljet’, ‘Group’, or the ‘Company’) is a high-tech company headquartered in Friedberg, Germany. The Company consists of voxeljet AG, voxeljet America Inc. (*voxeljet America*), voxeljet UK Ltd. (*voxeljet UK*), voxeljet India Pvt. Ltd (*voxeljet India*) and voxeljet China Co., Ltd. (*voxeljet China*). voxeljet AG owns 100% of the issued and outstanding shares of voxeljet America, voxeljet UK and voxeljet India, as well as 70.00% of voxeljet China.

As a manufacturer of three-dimensional (“3D”) printing systems, voxeljet specializes in the development, production and distribution of industrial printing machines and the production and sale of customized printed products to industrial customers. The Company operates in two business divisions: Systems and Services.

The voxeljet Systems business division develops, manufactures and sells innovative 3D printers. Today, voxeljet has a product range that reaches from smaller entry models to large-format machines, and therefore offers 3D printer systems for a wide range of application areas.

Through its Services business division, the Company offers customized printed products such as sand molds and plastic models based on CAD data through its ‘on-demand production’ service centers. In addition, the Company offers casting services to its customers. In those cases, the casting process is performed by external suppliers supported by voxeljet’s molds and models. Small-batch and prototype manufacturers utilize the Company’s machines for the automatic, patternless manufacture of their casting molds and 3D models. The Company’s customer base includes automotive manufacturers, aerospace industries, foundries and suppliers as well as companies from the arts and design industries as well as universities and research institutes.

2. Preparation of financial statements

The consolidated financial statements of the Group have been prepared in accordance with International Financial Reporting Standards (IFRS) as set forth by the International Accounting Standards Board (IASB) and interpretations of the IFRS Interpretations Committee (IFRIC).

The consolidated financial statements were authorized for issue by the Management Board on May 7, 2020.

These consolidated financial statements were prepared on the basis of historical cost except for the following items, which are measured on an alternative basis on each reporting date.

Debt securities at fair value through other comprehensive income (2017: Available-for-sale financial assets)	Fair value
Non-derivative financial instruments at fair value through profit or loss	Fair value
Monetary assets and liabilities denominated in foreign currencies	Mandatorily at FVTPL
Derivative financial instruments	Fair value

The consolidated financial statements are presented in thousands of Euros (kEUR) except where otherwise stated. Due to rounding, numbers presented throughout these notes may not add up precisely to the totals provided and percentages may not precisely reflect the absolute figures.

Going concern

The financial statements have been prepared on the basis of going concern which contemplates continuity of normal business activities and the realization of assets and settlement of liabilities in the ordinary course of business.

voxeljet has recognized continuous net losses during 2019, 2018 and 2017 amounting to kEUR 14,231, kEUR 8,764 and kEUR 8,554, respectively. Additionally, voxeljet had negative cash flows from operating activities in 2019, 2018 and 2017 of kEUR 6,819, kEUR 7,714 and kEUR 6,830, respectively, mainly due to continuous net losses.

[Table of Contents](#)

Due to the global outbreak of a new strain of coronavirus (“COVID-19”), we may experience further loss in the coming years. It is possible that the continued spread of COVID-19 will further cause disruption in our supply chain; cause delay, or limit the ability of customers to make timely payments to us; impact investment performance; and cause other unpredictable events. We may be unable to perform fully on our contracts, which will likely result in increases in costs and reduction in revenue. Moreover, in recent months, the continued spread of COVID-19 has led to disruption and volatility in the global capital markets, which increases the cost of capital and adversely impacts access to capital. In particular voxeljet anticipates customer payment delays for 3D printers sold in the fourth quarter 2019 which could negatively impact our results of operations, however we do not expect defaults. In addition, management expects decline in revenues for the Services segment and service and maintenance business of the Systems segment mainly during the second quarter of 2020. Also, voxeljet expects some delays in installation of 3D printers at customers’ facilities, which could lead to postponed revenue recognition for those transactions. If we experience difficulty in generating sufficient cash flow to meet our obligations and sustain our operations, which raises material uncertainties that cast significant doubt about our ability to continue as a going concern, we may have difficulties accessing government and state aid.

voxeljet has also entered into a number of loan agreements, mainly to finance its operations. The Company had a significant loan balance of kEUR 17,546 as of December 31, 2019 and kEUR 17,065 as of December 31, 2018. The Company had total cash and cash equivalents and short-term investments of kEUR 11,776 as of December 31, 2019 and kEUR 20,307 as of December 31, 2018, thereof restricted cash and short-term investments of kEUR 2,463 as of December 31, 2019 and kEUR 0 as of December 31, 2018.

The Company has breached its Total Net Financial Debt to EBITDA ratio financial covenant under the Finance Contract with the European Investment Bank (“EIB”) as of June 30, September 30, and December 31, 2019, under which the Company has to comply with certain minimum thresholds. As a result of the breach, the Company has reclassified the loan of kEUR 10,000 from a non-current liability to a current liability as of December 31, 2019.

These events and conditions raise material uncertainties that may cast significant doubt upon voxeljet’s ability to continue as a going concern.

After negotiations with the EIB; which started in July 2019, in March 2020, voxeljet received a waiver for the covenant breach in 2019 and also a grace period until March 31, 2021, for which voxeljet can rectify the breach and during which the EIB cannot demand immediate repayment. Before EIB issued such waiver, the Company registered a first rank land charge amounting to kEUR 10,000 on its land and facility located in Friedberg, Germany as collateral in favor of the EIB in March 2020.

Management is also taking steps to raise further funds including debt and equity financing. Management is in ongoing discussions with potential investors in Europe, America and Asia.

In addition, management has decided to restructure the voxeljet UK entity in order to consolidate 3D printing to serve all customers in Europe from the German service center. This will help to reduce overall costs and will lead to improved gross profit margins by realizing economies of scale in the German service center.

Further, management initiated a restructuring program at the German entity during the fourth quarter of 2019. This program includes the reduction of headcount mainly in the Systems segment in order to streamline the Company’s operations and optimize efficiency. For further information, see Note 9 to the consolidated financial statements.

Despite the ongoing losses, reduced cash flow and cash facilities, and the other negative financial conditions, management assumes that voxeljet will continue as a going concern. However, while management assumes of continuing as a going concern, the going concern is dependent upon management and the Company being successful in:

- successful negotiations with the EIB over (i) an amendment to the Leverage Covenant under the Finance Contract and (ii) the draw down of tranche B;
- availability of credit lines for advance payment guarantees or letters of credit to support export systems sales;
- achievement of budgeted sales;
- achievement of cost reduction targets; and
- managing the COVID-19 impact to contain it to the magnitude included in the current liquidity forecast

Based on the approved budget for FY 2020, the current two-year liquidity forecast, which includes our best estimate of the COVID-19 impacts as described above, in combination with a strong order intake as of March 31, 2020, the Waiver and the grace period the Company received from the EIB support our operations. The order backlog for the sale of 3D printers as of March 31, 2020 amounts to kEUR 8,377. Most of these orders are expected to be fulfilled in the next 12 months.

As a result, the viability of the Company is dependent on the above matters, which give rise to material uncertainties that may cast significant doubt about the Company's ability to continue as a going concern. However, management believes that the Company will be successful in the above matters and, accordingly, have prepared the financial statements on a going concern basis.

3. Summary of significant accounting policies

The principal accounting policies applied in the preparation of these financial statements are set out below. Except as described below, these policies have been consistently applied to all years presented.

The Group has initially adopted IFRS 16, *Leases* on January 1, 2019. A number of other new standards are effective from January 1, 2019 but these do not have a material effect on the Company's consolidated financial statements.

Due to the transition methods chosen by the Group in applying these standard, comparative information throughout these financial statements has not been restated to reflect the requirements of the new standards.

Consolidation

Subsidiaries are entities controlled by the Group. The Group controls an entity when it is exposed to, or has rights to, variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity. The financial statements of subsidiaries are included in the consolidated financial statements from the date that control commences until the date that control ceases.

Intercompany balances and transactions are eliminated in preparing the consolidated financial statements.

A joint venture is an arrangement in which the Group has joint control, whereby the Group has rights to the net assets of the arrangement, rather than rights to its assets and obligations for its liabilities. Interests in the joint venture are accounted for using the equity method. They are initially recognized at cost, which includes transaction costs. Subsequent to initial recognition, the consolidated financial statements include the Group's share of the profit or loss and other comprehensive income of equity-accounted investees, until the date on which significant influence or joint control ceases.

Revenues from contracts with customers

The Group has adopted IFRS 15 using the cumulative effect method, with the effect of initially applying this standard recognized at the date of initial application (i.e. January 1, 2018). Accordingly, the information presented for 2017 has not been restated – i.e. it is presented, as previously reported, under IAS 18, IAS 11 and related interpretations. Additionally, the disclosure requirements in IFRS 15 have not generally been applied to comparative information.

Upon adoption of IFRS 15, the Company changed the accounting policy on the revenue recognition relating to maintenance contracts are set out below.

Under IFRS 15, the Company recognizes revenue on the maintenance contracts based on the input method, such as the number of service visits or the provision of certain goods, in particular printheads, to measure the progress that depicts the transfer of control of the goods or services to the customer toward complete satisfaction of a performance obligation over time. Therefore, the expected number of service visits and goods to be provided under a contract have been estimated by the Company's service department based on historical experience. Under IAS 18, the Company recognized revenue on a straight-line basis over the contract term.

[Table of Contents](#)

IFRS 15 did not and continues to not have a significant impact on the Group's accounting policies with respect to other revenue streams.

Revenue on the sale of new or refurbished 3D printers is recognized at the point in time after completed installation of 3D printers at the customer site and evidenced through final acceptance by the customer. Customers obtain control of the 3D printers when the customers have accepted the assets.

From time to time, refurbished 3D printers which have been operating at the Company's service centers for an average of 1.5 to 2.5 years, are routinely sold to customers. Prior to sale, such printers are fully refurbished, which includes the installation of a new printhead.

The Group provides customers with statutory warranty on all 3D printers for one year. The warranty presents assurance-type warranty and is not treated as a separate performance obligation. After the initial one-year warranty period, the Group offers its customers optional maintenance contracts, which are considered as individual performance obligations.

The Company, from time to time, offers to customers, to operate their purchased 3D printer and perform 3D printing on custom-ordered printed products for a temporary period before the customers' facility is configured according to required technical specifications. The Company recognizes revenue for the use of space on Company premises over time under the term of the contracts. The Company recognizes revenue from the sale of customized printed products from the customer's purchased 3D printer, upon transfer of control of ownership to the customers, generally upon shipment.

Revenue on the sale of customized printed products is recognized at the point in time when the control of ownership of the assets is transferred to the customers, generally upon shipment.

Shipping, packaging and handling costs billed to customers for the sales of customized printed products and consumables are not considered as a separate performance obligation. The Company recognized the gross revenue at the point in time as the service is provided, i.e. upon shipment. Costs incurred by the Company associated with shipping, packaging and handling are included in selling expenses in the consolidated statements of comprehensive loss.

Invoices from revenue streams besides the sale of new or refurbished 3D printers are usually payable within 30 to 60 days. The Company also recognizes that longer payment periods are customary in some countries where it transacts business. To reduce credit risk in connection with machine sales, the Company may, depending upon the circumstances, require advance payments prior to shipment. On the sale of new or refurbished 3D printers, the Company generally requires advance payments prior to shipment and requires international customers to furnish letters of credit. These advance payments are recognized as contract liabilities. Maintenance contracts are generally billed to customers in advance on a monthly, quarterly, or annual basis, and are initially recorded as a contract liability as the Company has an enforceable right to payment after the contract has been signed.

A contract liability is recognized when the Company has received consideration (i.e. advance payment) from customers before satisfying a performance obligation or has an unconditional right to payment under a non-cancellable contract before it transfers the related goods or services to the customer under maintenance and extended warranty contracts. Upon the adoption of IFRS 15, the Company reclassified the deferred income balance, which represents advance payment from customers, to contract liabilities.

The contract liabilities primarily relate to (1) the advance consideration received from customers before satisfying a performance obligation, or an unconditional right to payment under a non-cancellable contract before it transfers the related goods or services to the customer under maintenance contracts, for which revenue is recognized over time; and (2) the advance consideration received from customers for the sale of new or refurbished 3D printers, for which revenue is recognized when the customer has accepted the assets. The total amount of unfulfilled performance obligations for 3D printer sales and long-term volume contracts is € 3.8 million. The Company expects to realize approximately 59% of such amount in 2020 and the remainder in 2021. The amount of kEUR 584 included in contract liabilities at December 31, 2018 has been recognized as revenue in 2019 (2018: kEUR 507).

[Table of Contents](#)

In the following table, revenue from contracts with customers is disaggregated by primary geographical market, and timing of revenue recognition. The table also includes a reconciliation of the disaggregated revenue with the Group's reportable segments (see Note 18).

	Year ended December 31,			
	SYSTEMS		SERVICES	
	2019	2018	2019	2018
Primary geographical markets				
EMEA	4,951	5,592	6,314	9,081
Asia Pacific	5,371	4,704	931	746
Americas	3,132	1,952	3,903	3,934
	<u>13,454</u>	<u>12,248</u>	<u>11,148</u>	<u>13,761</u>
Timing of revenue recognition				
Products transferred at a point in time	12,332	11,188	11,148	13,761
Products and services transferred over time	1,122	1,060	--	--
Revenue from contracts with customers	<u>13,454</u>	<u>12,248</u>	<u>11,148</u>	<u>13,761</u>

In 2019, voxeljet leased two 3D printers (2018: two 3D printers and 2017: one 3D printer) to customers under operating leases. Rental income is recognized on a straight-line basis over the term of the lease as revenue and is reported within the Systems segment.

Financial instruments

IFRS 9 sets out requirements for recognizing and measuring financial assets, financial liabilities and some contracts to buy or sell non-financial items. This standard replaced IAS 39, Financial Instruments.

The Company has applied the exemption not to restate comparative information for prior periods with respect to classification and measurement (including impairment) requirements. Differences in the carrying amounts of financial assets and financial liabilities resulting from the adoption of IFRS 9 are recognized in retained earnings and reserves as of January 1, 2018. Accordingly, the information presented for 2017 does not reflect the requirements of IFRS 9 but rather those of IAS 39.

The details of accounting policies under IFRS 9 and the nature and effect of the changes to previous accounting policies are set out below.

Classification and measurement of financial assets and financial liabilities

IFRS 9 largely retains the existing requirements in IAS 39 for the classification and measurement of financial liabilities. However, it eliminates the previous IAS 39 categories for financial assets of held to maturity, loans and receivables and available for sale.

Under IFRS 9, on initial recognition, a financial asset is classified as measured at: amortized cost, fair value through other comprehensive income (FVOCI), or fair value through profit or loss (FVTPL). The classification of financial assets under IFRS 9 is generally based on the business model in which a financial asset is managed and its contractual cash flow characteristics.

A financial asset is measured at amortized cost if it meets both of the following conditions and is not designated as at FVTPL:

- it is held within a business model whose objective is to hold assets to collect contractual cash flows; and
- its contractual terms give rise on specified dates to cash flows that are solely payments of principal and interest on the principal amount outstanding

On initial recognition of an equity investment that is not held for trading, the Company may irrevocably elect to record subsequent changes in the investment's fair value in OCI. This election is made on an investment-by-investment basis.

[Table of Contents](#)

All financial assets not classified as measured at amortized cost or FVOCI as described above are measured at FVTPL. This includes all derivative financial assets. On initial recognition, the Company may irrevocably designate a financial asset that otherwise meets the requirements to be measured at amortized cost or at FVOCI as at FVTPL if doing so eliminates or significantly reduces an accounting mismatch that would otherwise arise.

A financial asset (unless it is a trade receivable without a significant financing component that is initially measured at the transaction price) is initially measured at fair value plus, for an item not at FVTPL, transaction costs that are directly attributable to its acquisition.

Under IFRS 9, our investments in bond funds are classified as fair value through other comprehensive income (FVOCI). As permitted by IFRS 9, the Company has designated these investments at the date of initial application as measured at FVOCI.

Under IAS 39 as well as upon adoption of IFRS 9, our derivative financial instruments have been designated as at FVTPL.

Impairment of financial assets

IFRS 9 replaces the 'incurred loss' model in IAS 39 with an 'expected credit loss' (ECL) model. The new impairment model applies to financial assets measured at amortized cost, FVOCI and contract assets. Under IFRS 9, credit losses are recognized earlier than under IAS 39.

The Company's financial assets at amortized cost consist of trade receivables and cash and cash equivalents. For cash and cash equivalents the adoption of IFRS 9 did not have any impact regarding impairment.

Under IFRS 9, loss allowances are measured on either of the following bases:

- 12-months ECLs: these are ECLs that result from possible default events within the 12 months after the reporting date; or
- lifetime ECLs: these are ECLs that result from all possible default events over the expected life of a financial instrument.

When determining whether the credit risk of a financial asset has increased significantly since initial recognition and when estimating ECLs, the Company considers reasonable and supportable information that is relevant and available without undue cost or effort. This includes both quantitative and qualitative information and analysis, based on the Group's historical experience and informed credit assessment and including forward-looking information.

The Company considers an investment to have low credit risk when its credit risk rating is equivalent to the globally understood definition of 'investment grade'. The Company limits its exposure to credit risk by investing only in bond funds which are fully guaranteed by the financial institutions and therefore represents short term credit rating of A-3 based on Standard & Poor's or P-2 based on Moody's.

Trade receivables

The Company considers trade receivables which are in default individually prior to the application of the ECL model to the remaining population. The Company measures loss allowances for trade receivables at an amount equal to lifetime ECLs. ECLs are a probability-weighted estimate of credit losses. The Company calculates the ECL based on the risk scoring its customers' according to an external rating agency. Following the risk score of each customer, the trade receivables are clustered into different grades. For each grade, the ECL is calculated after deducting from trade receivables a loss allowance based on actual credit loss experience. In addition the Company uses qualitative assessment of the trade receivables, where default has occurred.

Debt securities

The Group considers debt securities to have low credit risk when its credit risk rating is equivalent to the globally understood definition of 'investment grade'. The Group limits its exposure to credit risk by investing only in

[Table of Contents](#)

bond funds which are fully guaranteed by the financial institutions and therefore represents short term credit rating of A-3 based on Standard & Poor's or P-2 based on Moody's.

Presentation of impairment

Loss allowances for financial assets measured at amortized cost are deducted from the gross carrying amount of the assets and presented within other operating expenses.

Impairment losses on financial assets classified as FVTPL and FVOCI are presented within the finance expense and other comprehensive income, respectively.

Impact of the impairment model

For assets in the scope of the IFRS 9 impairment model, impairment losses are generally expected to increase and become more volatile. The following tables provide information about the exposure to credit risk and ECLs for trade receivables as of December 31, 2019 and 2018, respectively. This was calculated after a specific assessment of the trade receivables and after recording a specific debt allowance.

December 31, 2019						
Grades		Equivalent to external credit rating (Standard & Poor's)	Weighted-average loss rate	Gross carrying amount	Impairment loss allowance	Net carrying amount
(€ in thousands)						
Grades 1-4:	Low risk	BBB+ to AAA	0.2%	2,400	4	2,396
Grades 5-7:	Fair risk	B+ to BBB	1.3%	3,132	42	3,090
Grades 8-9:	Substandard	CCC- to B	7.0%	233	16	217
Grade 10:	Doubtful	C to CC	25.0%	283	71	212
Grade 11:	Loss	D	100.0%	--	--	--
				6,048	133	5,915

December 31, 2018						
Grades		Equivalent to external credit rating (Standard & Poor's)	Weighted-average loss rate	Gross carrying amount	Impairment loss allowance	Net carrying amount
(€ in thousands)						
Grades 1-4:	Low risk	BBB+ to AAA	0.2%	3,274	5	3,269
Grades 5-7:	Fair risk	B+ to BBB	1.3%	2,171	29	2,142
Grades 8-9:	Substandard	CCC- to B	7.0%	648	45	603
Grade 10:	Doubtful	C to CC	25.0%	22	6	16
Grade 11:	Loss	D	100.0%	72	72	--
				6,187	157	6,030

Cash and cash equivalents

Cash and cash equivalents are short-term bank deposits and are not subject to a significant risk of change in value.

Leases

The Group has initially adopted IFRS 16 Leases from January 1, 2019. IFRS 16 introduced a single, on-balance sheet accounting model for lessees. As a result, the Group, as a lessee, has recognized right-of-use assets representing its rights to use the underlying assets and lease liabilities representing its obligation to make lease payments. Lessor accounting remains similar to previous accounting policies.

The Group has applied IFRS 16 using the modified retrospective approach, under which the cumulative effect of initial application is recognized in retained earnings as of January 1, 2019. Accordingly, the comparative information presented for 2018 has not been restated and is therefore presented as previously reported, under IAS 17 and related

interpretations. The details of changes in accounting are disclosed below. Additionally, the disclosure requirements in IFRS 16 have not generally been applied to the comparative information.

Definition of a lease

Previously, the Company determined at contract inception whether an arrangement was or contained a lease under IFRIC 4 Determining Whether an Arrangement contains a Lease. The Company now assesses whether a contract is or contains a lease based on the new definition of a lease. Under IFRS 16, a contract is, or contains, a lease if the contract conveys a right to control the use of an identified asset for a period of time in exchange for consideration.

On transition to IFRS 16, the Company elected to apply the practical expedient to grandfather the assessment of which transactions are leases. It applies IFRS 16 only to contracts that were previously identified as leases. Contracts that were not identified as leases under IAS 17 and IFRIC 4 were not reassessed. Therefore, the definition of a lease under IFRS 16 has been applied only to contracts entered into or changed on or after January 1, 2019.

At inception or on reassessment of a contract that contains a lease component, the Company allocates the consideration in the contract to each lease and non-lease component on the basis of their relative stand-alone prices.

The Company as a lessee

The Company leases assets, including properties, production equipment and vehicles. As a lessee, the Company previously classified leases as operating or finance leases based on its assessment of whether the lease transferred substantially all of the risks and rewards of ownership. Under IFRS 16, the Company recognizes right-of-use assets and lease liabilities for most leases. These leases are on-balance sheet.

However, the Company has elected not to recognize right-of-use assets and lease liabilities for some leases of low-value assets (e.g. tools) as well as short-term leases (leases with less than 12 months of lease term). The Company recognizes the lease payments associated with these leases as an expense on a straight-line basis over the lease term.

The Company presents right-of-use assets in “property, plant and equipment”, in the same line item as it presents underlying assets of the same nature that it owns. The carrying amounts of right-of-use assets are as below:

	Property, plant and equipment			
	Property	Production equipment	Others	Total
	(€ in thousands)			
Balance at January 1, 2019	3,109	112	280	3,501
Balance at December 31, 2019	3,658	72	254	3,984

The Company presents lease liabilities within “financial liabilities” in the condensed consolidated statements of financial position.

Leases under IFRS 16

The Company recognizes a right-of-use asset and a lease liability at the lease commencement date. The right-of-use asset is initially measured at an amount equal to the lease liability, and subsequently at cost less any accumulated depreciation and impairment losses, and adjusted for certain remeasurements of the lease liability.

The lease liability is initially measured at the present value of the lease payments that are not paid at the commencement date, discounted using the Company’s incremental borrowing rate.

The lease liability is subsequently measured at amortized cost using the effective interest method. It is remeasured when there is a change in the future lease payments arising from a change in an index or rate, a change in the estimate of the amount expected to be payable under a residual value guarantee, or as appropriate, changes in the assessment of whether it will exercise a purchase, extension or termination option.

The Company has applied judgement to determine the lease term for some lease contracts in which it is a lessee that include renewal options. The assessment of whether the Company is reasonably certain to exercise such options impacts the lease term, which significantly affects the amount of lease liabilities and right-of-use assets recognized.

[Table of Contents](#)

Transition

Previously, the Company classified property plant and equipment leases as operating leases under IAS 17. These include manufacturing facilities. The leases typically run for a period of three to ten years. Some leases include an option to renew the lease for an additional three to five years after the end of the non-cancelable period.

At transition, for leases classified as operating leases under IAS 17, lease liabilities were measured at the present value of the remaining lease payments, discounted at the Company's incremental borrowing rates for similar assets as of January 1, 2019. Right-of-use assets are measured at an amount equal to the lease liability, adjusted by the amount of any prepaid or accrued lease payments.

The Company used the following practical expedients when applying IFRS 16 to leases previously classified as operating leases under IAS 17:

- Applied a single discount rate to a portfolio of leases with reasonably similar characteristics.
- Applied the exemption not to recognize right-of-use assets and liabilities for leases with less than 12 months of lease term.
- Used hindsight when determining the lease term if the contract contains options to extend or terminate the lease.

The Company leases a small number of items of production equipment. These leases were classified as finance leases under IAS 17. For these finance leases, the carrying amount of the right-of-use asset and the lease liability at January 1, 2019 were determined at the carrying amount of the lease asset and lease liability under IAS 17 immediately before that date.

The Company as a lessor

The Company leases out a small number of 3D printers. Those leases have been classified as operating leases.

The accounting policies applicable to the Company as a lessor are not different from those under IAS 17.

The Company is not required to make any adjustments on transition to IFRS 16 for leases in which it acts as a lessor.

Impacts on financial statements

Impacts on transition

On transition to IFRS 16, the Company recognized additional right-of-use assets, including property, plant and equipment and additional lease liabilities. The impact on transition is summarized below.

	Impact on adopting IFRS 16 at January 1, 2019 (€ in thousands)
Right-of-use assets presented in property plant and equipment	3,501
Lease liabilities as presented in financial liabilities	3,574

When measuring lease liabilities for leases that were classified as operating lease, the Company discounted lease payments using its incremental borrowing rates as of January 1, 2019. The weighted-average rate applied is 4.55%.

[Table of Contents](#)

	January 1, 2019
	(€ in thousands)
Operating lease commitment at December 31, 2018, as disclosed in the Group's consolidated financial statements	2,584
Discounted using the incremental borrowing rate at January 1, 2019	2,021
Finance lease liability recognized as at December 31, 2018	105
Recognition exemption for leases with less than 12 months of lease term at transition	(84)
Extension options reasonably certain to be exercised	1,532
Lease liabilities recognized at January 1, 2019	3,574

Impacts for the period

As a result of initially applying IFRS 16, in relation to the leases that were previously classified as operating leases, the Company recognized kEUR 3,984 of right-of-use assets and kEUR 3,610 of lease liabilities as of December 31, 2019.

Also in relation to those leases under IFRS 16, the Company has recognized depreciation and interest costs, instead of operating lease expenses. During the twelve months ended December 31, 2019, the Company recognized kEUR 765 of depreciation expenses and kEUR 190 of interest expense from these leases.

Within the statement of cash flows, cash payments for the principal portion of lease payments, as well as for the interest portion, have been classified as financing activities. Payments for short-term leases have been classified as operating activities.

Research and development expenses

All research and development costs are charged to expense as incurred.

Government grants

Government grants awarded for project funding are recorded within other operating income in the consolidated statement of comprehensive loss if the related research and development costs have been incurred and provided that the conditions for the funding have been met. Until then, amounts received under government grants are recorded as deferred income in the statements of financial position.

Employee stock option plan

In April 2017, the Supervisory Board adopted and approved Option Plan 2017. The plan authorizes to grant shares of equity-settled stock options to employees and members of the management board. The Company's stock-based compensation expense is estimated at the grant date based on the fair value of the award and is recognized as expense ratably over the requisite service period of the award. The Company calculates the fair value of each option award on the date of grant under the Monte Carlo simulation model. The determination of the grant date fair value of the awards using a simulation model is affected by our stock price as well as assumptions regarding a number of complex and subjective variables. These variables include the expected stock price volatility over the expected life of the awards, risk-free interest rates, and expected dividends. The risk free interest rate is equal to the U.S. Treasury constant maturity rates for the period equal to the expected life. The Company does not currently pay cash dividends on common stock and does not anticipate doing so in the foreseeable future. Accordingly, the expected dividend yield is zero.

Foreign currencies

The financial statements are presented in Euros, the functional currency of voxeljet AG.

Monetary transactions denominated in foreign currencies are translated to Euros at the exchange rates prevailing on the transaction date.

The financial statements of foreign subsidiaries are translated using the concept of the functional currency in accordance with IAS 21. The assets and liabilities of foreign subsidiaries are translated at the spot rate at the end of the period, while their income statement items are translated at average exchange rates for the respective periods. All resulting exchange differences are recognized in other comprehensive income. Gains and losses on foreign currency

[Table of Contents](#)

transactions are shown within other operating income and other operating expenses, respectively, in the consolidated statement of comprehensive loss.

The loans provided to voxeljet AG's subsidiaries are not considered as net investments in foreign operations. Therefore, gains or losses from foreign exchange differences thereon are recognized in the statement of other comprehensive loss as "other operating income or expenses".

The exchange rates that are most relevant for voxeljet's consolidated financial statements are as follows:

Average exchange rates to Euro

December 31,	Average Rate			
	USD	GBP	INR	CNY
2019	1.1195	0.8778	78.8361	7.7355
2018	1.1810	0.8847	80.7332	7.8081
2017	1.1297	0.8767	73.5324	7.6290

Year end exchange rates to Euro

December 31,	Year End Rate			
	USD	GBP	INR	CNY
2019	1.1234	0.8508	80.1870	7.8205
2018	1.1450	0.8945	79.7298	7.8751

Income Tax

Income tax expense (benefit) consists of current and deferred tax expense and benefit in accordance with IAS 12.

Current income tax expense (benefit) is based on taxable profit (loss) for the year. Taxable profit (loss) differs from profit (loss) as reported in the statements of comprehensive income (loss) because it excludes items of income or expense that are taxable or deductible in other years and further excludes items that are never taxable or deductible. Current income tax expense (benefit) is calculated using tax rates that have been enacted or substantively enacted by the end of the respective reporting period.

Current tax comprises the expected tax payable or receivable on the taxable income or loss for the year and any adjustment to the tax payable or receivable in respect of previous years. The amount of the current tax payable or receivable is the best estimate of the tax amount to be paid or received that reflects uncertainty related to income tax, if any. It is measured using tax rates enacted or substantively enacted at the reporting date.

Deferred income tax expense (benefit) is recognized on temporary differences between the carrying amounts of assets and liabilities in the statement of financial position and the corresponding tax basis used in the computation of taxable profit (loss).

Deferred tax liabilities are generally recognized for all taxable temporary differences and deferred tax assets, including for carry forward losses to the extent that it is probable that taxable profits will be available against which deductible temporary differences can be utilized. The carrying amount of deferred tax assets is reviewed at the end of each reporting period and reduced to the extent that it is no longer more probable than not that sufficient taxable profits will be available to allow all or a part of the assets to be recovered.

Deferred tax expense (benefit) is calculated at the tax rates that are expected to apply in the periods when the liability is settled or the asset is realized, based on tax rates (and tax regulations) that have been enacted or substantively enacted by the end of the reporting period. The measurement of deferred tax liabilities and assets reflects the tax consequences that would follow from the manner in which the Company expects, at the end of the reporting period, to recover or settle the carrying amount of its assets and liabilities. Deferred tax expense (benefit) is charged or credited to profit or loss, except when it relates to items charged or credited directly to equity, in which case the deferred taxation is also recorded to equity.

[Table of Contents](#)

Deferred tax assets and liabilities are offset when there is a legally enforceable right to set off tax assets against tax liabilities and when they relate to income taxes levied by the same taxation authority and the Company intends to settle its current tax assets and liabilities on a net basis.

Intangible Assets

Intangible assets, including software, licenses and customer relationships, that are acquired by the Company and have a finite useful life are measured at cost less accumulated amortization and any impairment losses. Amortization for intangible assets with finite useful lives is recognized on a straight-line basis over their useful lives.

The amortization of licenses is allocated to the cost of inventory and is included in cost of sales as 3D printers are sold; the amortization of software is mainly included in selling and administrative expenses.

The estimated useful economic lives of acquired intangible assets are presented in the following table:

USEFUL LIFE OF INTANGIBLE ASSETS

Software	3-5 years
Licenses	6-8 years

An intangible asset is derecognized upon disposal or when no future economic benefits are expected to arise from the continued use of the asset. Any gain or loss arising on derecognition of the asset (calculated as the difference between the net disposal proceeds and the carrying amount of the item) is included in profit or loss in the period in which the item is derecognized.

Property, Plant and Equipment

Property, plant and equipment is carried at acquisition or manufacturing cost (for internally manufactured printers used in the Services segment or the research and development function) and depreciated on a straight-line basis over the estimated useful lives of the related assets, taking into account estimated residual values. Except the sale of used printers, realized gains and losses are recognized upon disposal or retirement of the related assets and are reflected within other operating income or other operating expenses in the consolidated statement of comprehensive loss. Subsequent expenditures are capitalized only if it is probable that voxeljet will receive additional economic benefits from the particular asset associated with these expenditures, and the costs can be determined reliably. In those cases the assets are depreciated over their useful lives. Repair and maintenance expenditures are expensed as incurred. Land is not depreciated. Additions to property, plant and equipment relating to self-constructed 3D printers are considered non-cash transactions.

The estimated useful economic lives of items of property, plant and equipment are as follows:

USEFUL LIFE OF PROPERTY, PLANT AND EQUIPMENT

Leasehold improvements	6-9 years
Buildings	33 years
Plant and machinery	7-8 years
Printers leased to customers under operating lease	7-8 years
Other facilities, machinery and factory equipment	2-20 years
Office equipment	3-12 years

Useful lives, depreciation methods and residual values are reviewed at least annually and, if they change significantly, depreciation charges for current and future periods are adjusted accordingly.

Inventories

Raw materials and merchandise

Raw materials are measured at the lower of acquisition cost, as determined on the weighted average costs method, and net realizable value. Obsolete inventories are written off directly into cost of sales.

[Table of Contents](#)

Work in progress

Work in progress is measured at the lower of manufacturing cost and net realizable value. Manufacturing costs comprise all costs that are directly attributable to the manufacturing process, such as direct material and labor, and production related overheads (based on normal operating capacity and normal consumption of material, labor and other production costs), including depreciation charges. Net realizable value is defined as the estimated selling price in the ordinary course of business less the estimated costs of completion and the estimated costs of the sale. For purposes of determining net realizable value, selling expenses include all costs expected to be incurred to make the sale, primarily shipping, packaging and handling as well as commissions.

We also use our own printers in our service centers. Unfinished printers are generally available to be sold if a customer requests a product with a specification which can be met by one of the products in progress. Accordingly, we classify printers as inventory until we remove a finished printer from our manufacturing warehouse to use it in a service center. The reclassification as property, plant and equipment, as a non-cash transaction, occurs at cost and depreciation starts at inception of service.

We evaluate the adequacy of our inventory reserves on a periodic basis in order to determine the need for an inventory reserve.

Impairment of non-financial assets

The Company assesses at the end of each reporting period whether there is an indication that a non-financial asset may be impaired. Such assets are tested for impairment if there are indicators that the carrying amounts may not be recoverable. An impairment loss is recognized in the amount by which the asset's carrying amount exceeds its recoverable amount. The recoverable amount is defined as the higher of an asset's fair value less cost to sell and its value in use. As individual assets do not generate largely independent cash flows, impairment testing is performed at the cash generating unit level. An individual fixed asset within a CGU cannot be written down below fair value less cost incurred to sell the individual asset.

Earnings (loss) per share

Basic earnings per share amounts are calculated by dividing profit (loss) by the weighted average number of ordinary shares outstanding. There are no dilutive instruments issued and outstanding.

	<u>2019</u>	<u>2018</u>
	<u>(in thousands of shares)</u>	
Issued ordinary shares at 1 January	4,836	3,720
Effect of shares issued on October 17, 2018	--	192
Effect of shares issued on November 8, 2018	--	29
Weighted-average number of ordinary shares at 31 December	4,836	3,941

4. New standards and interpretations not yet adopted

The IASB issued a number of new IFRS standards or amendments to existing standards which are required to be adopted in annual periods beginning after December 31, 2019.

Others	01/2020	Amendments to References to the Conceptual Framework in IFRS Standards
IFRS 3	01/2020	Definition of a Business (Amendments to IFRS 3)
IAS 1, IAS 8	01/2020	Definition of Material (Amendments to IAS 1 and IAS 8)
IFRS 9, IAS 39 and IFRS 7	01/2020	Interest Rate Benchmark Reform (Amendments to IFRS 9, IAS 39 and IFRS 7)
IFRS 17	01/2021	Insurance Contracts
IAS 1	01/2022	Classifications of Liabilities as Current or Non-Current (Amendment to IAS 1)
IFRS 10, IAS 28	indefinite	Amendment Sale or Contribution of Assets between Investor and its Associate or Joint Venture

The Company has not yet determined what impact the new standards, amendments or interpretations will have on the financial statements.

5. Critical accounting judgment and key sources of estimation and uncertainty

In the process of applying the Company's accounting policies, Management is required to make judgments, estimates and assumptions about the carrying amounts of assets and liabilities that are not readily apparent from other sources. These estimates and associated assumptions are based on the knowledge available as of the preparation date of the financial statements and historical experiences as well as other factors that are considered to be relevant. The estimates and underlying assumptions are reviewed on an ongoing basis.

Developments outside management's control may cause actual amounts to differ from the original estimates. In that case, the underlying assumptions and, if necessary, the carrying amounts of the pertinent assets and liabilities are adjusted accordingly. Revisions to accounting estimates are recognized in the period in which the estimate is revised, if the revision affects only that period, or in the period of the revision and future periods, if the revision affects both current and future periods.

The assumptions and estimates refer primarily to the assessment of the Company of the ability to continue as a going concern (see further discussion in Note 2), recognition of revenue, and the consideration of the renewal options of the lease contracts in determining the appropriate lease terms.

The key assumptions concerning the future and other key sources of estimation uncertainty at the end of the reporting period, that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next fiscal year are discussed below.

Revenue recognition

Revenue is measured based on the consideration specified in a contract with a customer. The Group recognizes revenue when it transfers control over a good or service to a customer.

Revenue on the sale of new or refurbished 3D printers is recognized at the point in time after completed installation of 3D printers at the customer site and evidenced through final acceptance by the customer. Customers obtain control of the 3D printers when the customers have accepted the assets.

The Company recognizes revenue on the maintenance contracts for 3D printers by applying the input method to measure the progress that depicts the transfer of control of the goods or services to the customer toward complete satisfaction of a performance obligation over time. The determination of the expected number of service visits and goods to be provided under a contract require significant judgment and have been estimated by the Company's service department based on historical experience.

Lease term as a lessee

The Company leases certain property leases which contain extension options exercisable by the Company after the end of the non-cancellable contract period. The extension options held are exercisable only by the Company and not by the lessors. The Company assesses at lease commencement date whether it is reasonably certain to exercise the extension options. The Company reassesses whether it is reasonably certain to exercise the options if there is a significant event or significant changes in circumstances within its control.

6. Share based payment arrangements

Share option plan

On April 7, 2017, voxeljet AG established a share option plan that entitles key management personnel and senior employees of voxeljet AG and its subsidiaries to purchase shares of the parent company.

[Table of Contents](#)

Total options available under the share option plan are 372,000. 279,000 options (75%, Tranche 1) were granted on April 7, 2017. 93,000 options (25%, Tranche 2) were granted on April 12, 2018.

The vesting conditions include a service condition (the options vest after a period of four years of continued service from the respective grant date) and a market condition (the options may only be exercised if the share price exceeds the exercise price over a period of 90 consecutive days by at least 20% in the period between the grant date and the respective exercise time frame) of which both conditions must be met.

The fair value of the employee share option plan has been measured for Tranches 1 and 2 using a Monte Carlo simulation. The market condition has been incorporated into the fair value at grant date.

The inputs used in the measurement of the fair value at grant date are as follows:

	Tranche 1	Tranche 2
Parameter		
Share price at grant date	USD 13.80	USD 16.15
Exercise price	USD 13.90	USD 16.15
Expected volatility	55.00%	58.40%
Expected dividends	--	--
Risk-free interest rate	2.49%	2.85%
Fair value at grant date	USD 8.00	USD 9.74

	December 31,			
	2019		2018	
	Number of options	Weighted-average exercise price (USD)	Number of options	Weighted-average exercise price (USD)
Outstanding at January 1	353,400	14.46	279,000	13.90
Granted during the year	--	--	93,000	16.15
Exercised during the year	--	--	--	--
Forfeited during the year	--	--	(18,600)	14.46
Outstanding at December 31	353,400	14.46	353,400	14.46
Exercisable at December 31	--	--	--	--

The respective expected volatility has been based on an evaluation of the historical volatility of the Company's share price as at the grant date. As at December 31, 2019 no options are exercisable and 353,400 options are outstanding. The weighted-average contractual life of the options at December 31, 2019 amounts to 7.5 years (December 31, 2018: 8.5 years).

The expense recognized in the statement of comprehensive loss totaled kEUR 671, kEUR 604 and kEUR 386 for the years ended December 31, 2019, 2018 and 2017, respectively.

Increase of minority shareholding of voxeljet China

On March 1, 2019, voxeljet China moved into a new facility. The minority shareholder of voxeljet China has increased its shareholding in the entity from 4.175% to 30% through an in-kind capital contribution of a lease contract on the new facility. The lease term under IFRS 16 of the contract is six years, including a rent-free period during the first three years. The transaction is accounted for as a share-based payment transaction under IFRS 2 and resulted in an increase of non-controlling interest of kEUR 216 and capital reserves of kEUR 604. The Company also recorded a right-of-use asset of kEUR 813 and the corresponding lease liability on the commencement date of the lease. The fair value of the lease contract was measured based on the market observable lease payment of comparable properties in close proximity from the voxeljet China facility.

7. Trade receivables

Credit terms provided to customers are determined individually and are dependent on already existing customer relationships and the customer's payment history.

Change in the allowance for doubtful accounts

	Year Ended December 31,	
	2019	2018
	(€ in thousands)	
Balance at beginning of period	383	545
Provisions	38	227
Write-offs	(102)	(351)
Release to income	(132)	(38)
Balance at end of period	187	383

8. Inventories

Inventories consisted of the following for the years reported:

INVENTORIES BY CATEGORY

	December 31,	
	2019	2018
	(€ in thousands)	
Raw materials and merchandise	4,109	4,628
Work in progress	8,350	5,436
Total	12,459	10,064

The reserve for slow-moving inventory regarding work in progress was kEUR 1 and kEUR 22 in 2019 and 2018, respectively.

9. Restructuring

voxeljet AG

At the end of 2019, a provision of kEUR 453 was made to cover the costs associated with a restructuring program announced by Management in November 2019 for the German operation. This program includes the reduction of headcount mainly in production in order to adjust the capacity but also in further functions. Estimated restructuring costs mainly include employee termination benefits based on a voluntary program which has started on February 17, 2020. This program has been agreed with the workers' council in a company agreement. On April 16, 2020, the voluntary

[Table of Contents](#)

program expired with the result that the desired reduction in headcount has been completely achieved through the voluntary program, and therefore the cost saving targets have been fully implemented.

Line items in statement of comprehensive loss / Components of restructuring charges	Twelve months ended December 31, 2019
	(€ in thousands)
Cost of sales	302
Employee termination costs	302
Selling expenses	77
Employee termination costs	77
Administrative expenses	45
Employee termination costs	45
Research and development expenses	29
Employee termination costs	29
Impact of restructuring	453

voxeljet UK

The Company decided to consolidate 3D printing to serve all customers in Europe from the German service center and restructure the voxeljet UK entity. The restructuring includes reduction in headcount and disposal of certain assets. Consequently the lease of the Milton Keynes facility has been early-terminated and will end at the end of May 2020.

Line items in statement of comprehensive loss / Components of restructuring charges	Twelve months ended December 31, 2019
	(€ in thousands)
Cost of sales	312
Loss on disposal of assets	226
Employee termination costs	67
Impairment of Inventories	19
Selling expenses	42
Loss on disposal of assets	20
Employee termination costs	16
Write-off right-of-use asset	6
Administrative expenses	274
Loss on disposal of assets	81
Employee termination costs	35
Lease maintenance costs	100
Settlement of agreements	14
Legal Consulting	25
Write-off right-of-use asset	19
Impact of restructuring	628

10. Intangible assets and property, plant and equipment

Intangible assets

	December 31,	
	2019	2018
	(€ in thousands)	
Software	611	787
Licenses	83	109
Prepayments made on intangible assets	662	524
Total	1,356	1,420

The increase in prepayments made on intangible assets is due to capitalized customizing cost in connection with our ERP system. The decrease related to software is related to the scheduled amortization partially offset by additions.

Property, plant and equipment

	December 31,	
	2019	2018 ⁽¹⁾
	(€ in thousands)	
Land, buildings and leasehold improvements	20,045	17,085
Plant and machinery (2018 includes assets under finance lease)	5,779	9,072
Other facilities, factory and office equipment	1,459	1,502
Assets under construction and prepayments made	60	16
Total	27,343	27,675
Thereof pledged assets of Property, Plant and Equipment	6,618	6,691
Leased assets included in Property, Plant and Equipment:	--	357
Printers leased to customers under operating lease	--	208
Other factory equipment	--	149

⁽¹⁾ The Company has initially applied IFRS 16 as of January 1, 2019, using the modified retrospective approach. Under this approach, comparative information is not restated and the cumulative effect of initially applying IFRS 16 is recognized in retained earnings at the date of initial application. For further information, see Note 3 of the consolidated financial statements.

The pledged assets consist of the new office building and the new production hall, which were completed in 2017, as well as eight (in 2018: six) 3D printers that serve as collateral for certain credit lines and loan agreements. In March 2020, voxeljet pledged land and facilities located in Friedberg, Germany in favor of the EIB. For further information, see Note 19 and Note 25.

Amounts added to plant and machinery relating to self-constructed 3D printers are considered non-cash transactions, which totaled to kEUR 883 and kEUR 2,531 in the years ended December 31, 2019 and 2018, respectively.

[Table of Contents](#)

The following table presents the composition of, and annual movement in, intangible assets and property, plant and equipment for the years 2019 and 2018, respectively:

2019

	(€ in thousands)															Carrying amount
	Acquisition and manufacturing cost							Accumulated depreciation and amortization								
	01/01/2019 ⁽¹⁾	Recognition of right-of-use asset on initial application of IFRS 16	Adjusted balance at 01/01/2019	Additions	Disposals	Revaluation	Transfer	FX	12/31/2019	01/01/2019	Current year	Disposals	Transfer	FX	12/31/2019	
Intangible assets																
Software	1,446	--	1,446	94	--	--	10	1	1,551	659	280	--	--	1	940	611
Licenses	245	--	245	--	--	--	--	--	245	136	26	--	--	--	162	83
Prepayments made on intangible assets	524	--	524	148	--	--	(10)	--	662	--	--	--	--	--	--	662
Total	2,215	--	2,215	242	--	--	--	1	2,458	795	306	--	--	1	1,102	1,356
Property, plant and equipment																
Land, buildings and leasehold improvements	18,909	3,109	22,018	1,651	369	(534)	--	119	22,885	1,824	1,095	83	--	4	2,840	20,045
Plant and machinery	19,211	112	19,323	1,194	6,769	(1)	40	245	14,032	10,164	2,198	4,162	13	40	8,253	5,779
Other facilities, factory and office equipment	3,801	280	4,081	449	411	(1)	--	24	4,142	2,423	608	356	--	8	2,683	1,459
Assets under construction and prepayments made	16	--	16	59	16	--	--	1	60	--	--	--	--	--	--	60
Subtotal	41,937	3,501	45,438	3,353	7,565	(536)	40	389	41,119	14,411	3,901	4,601	13	51	13,776	27,343
Leased products	203	--	203	--	41	--	(163)	1	--	54	4	18	(40)	--	--	--
Total	42,140	3,501	45,641	3,353	7,606	(536)	(123)	390	41,119	14,465	3,905	4,619	(27)	51	13,776	27,343

2018

	(€ in thousands)															Carrying amount
	Acquisition and manufacturing cost							Accumulated depreciation and amortization								
	01/01/2018	Additions	Disposals	Transfer	FX	12/31/2018	01/01/2018	Current year	Disposals	Transfer	FX	12/31/2018	12/31/2018 ⁽¹⁾			
Intangible assets																
Software	1,004	230	--	211	1	1,446	431	228	--	--	--	659	787			
Licenses	245	--	--	--	--	245	109	27	--	--	--	136	109			
Prepayments made on intangible assets	402	333	--	(211)	--	524	--	--	--	--	--	--	524			
Total	1,651	563	--	--	1	2,215	540	255	--	--	--	795	1,420			
Property, plant and equipment																
Land, buildings and leasehold improvements	18,703	152	--	--	54	18,909	1,288	533	--	--	3	1,824	17,085			
Plant and machinery	16,328	3,836	2,964	1,909	102	19,211	8,065	2,128	1,494	1,425	40	10,164	9,047			
Other facilities, factory and office equipment	3,484	329	19	--	7	3,801	2,005	427	12	--	3	2,423	1,378			
Assets under construction and prepayments made	8	17	--	(9)	--	16	--	--	--	--	--	--	16			
Subtotal	38,523	4,334	2,983	1,900	163	41,937	11,358	3,088	1,506	1,425	46	14,411	27,526			
Leased products	2,098	2	--	(1,900)	3	203	1,314	163	--	(1,425)	2	54	149			
Total	40,621	4,336	2,983	--	166	42,140	12,672	3,251	1,506	--	48	14,465	27,675			

⁽¹⁾ The Company has initially applied IFRS 16 as of January 1, 2019, using the modified retrospective approach. Under this approach, comparative information is not restated and the cumulative effect of initially applying IFRS 16 is recognized in retained earnings at the date of initial application. For further information, see Note 3 of the consolidated financial statements.

11. Other liabilities and provisions

	December 31,	
	2019	2018
	(€ in thousands)	
Liabilities from VAT	32	24
Employee bonus	397	413
Accruals for vacation and overtime	190	210
Accruals for licenses	62	69
Liabilities from payroll	301	298
Accruals for commissions	38	47
Accruals for compensation of Supervisory board	180	180
Accrual for warranty	241	240
Accrual for restructuring	604	--
Others	284	387
Total	2,329	1,868

The accruals for restructuring amounting to kEUR 604 relate to voxeljet AG (kEUR 453) and voxeljet UK (kEUR 151). For further information, see Note 9 of the consolidated financial statements.

	(€ in thousands)				
	January 1, 2019	Usage	Addition	Reversal	December 31, 2019
Accrual for warranty	240	(240)	241	--	241

The Group expects to settle the majority of the other liabilities and provisions over the next year.

12. Financial instruments

Fair value is the price that would be received upon the sale of an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. The fair value hierarchy defines the following levels:

- Level 1: Quoted prices of the respective financial asset or financial liability in active markets
- Level 2: Inputs other than quoted prices included in Level 1 that are observable for the asset or liability, either directly (i.e. as prices) or indirectly (i.e. derived from prices).
- Level 3: Input parameters not based on observable market data

Under IFRS 9 there are the following categories:

- (I) FVOCI
- (II) Mandatorily at FVTPL
- (III) Amortized cost

[Table of Contents](#)

Further, for the current year the fair value disclosure of lease liabilities is not required.

Trade receivables and trade payables classified as held-for-sale are included in the table below. Their carrying amount is a reasonable approximation of the fair value.

The following table shows the carrying amounts and fair values of financial assets and financial liabilities, including their levels in the fair value hierarchy.

12/31/2019	Carrying amount					Fair Value			
	FVTPL	FVOCI	Assets at amortized cost	Liabilities at amortized cost	Total carrying amount	Level 1	Level 2	Level 3	Total
Financial assets measured at fair value									
<u>Non-current assets</u>									
Derivative financial instruments	2,014	--	--	--	2,014	--	2,014	--	2,014
Equity securities	--	5	--	--	5	--	--	5	5
<u>Current assets</u>									
Bond funds	--	3,667	--	--	3,667	3,667	--	--	3,667
Bond funds (restricted)	--	2,000	--	--	2,000	2,000	--	--	2,000
Note receivable	--	1,278	--	--	1,278	1,278	--	--	1,278
Financial assets not measured at fair value									
<u>Current assets</u>									
Cash and cash equivalents	--	--	4,368	--	4,368	4,368	--	--	4,368
Restricted Cash	--	--	463	--	463	463	--	--	463
Trade and other receivables	--	--	5,915	--	5,915	--	--	--	--
Financial liabilities not measured at fair value									
<u>Non-current liabilities</u>									
Long-term debt	--	--	--	6,682	6,682	--	6,148	--	6,148
<u>Current liabilities</u>									
Long-term debt	--	--	--	10,864	10,864	--	10,858	--	10,858
Trade payables	--	--	--	2,797	2,797	--	--	--	--

[Table of Contents](#)

	Carrying amount					Fair Value			
	FVTPL	FVOCI	Assets at amortized cost	Liabilities at amortized cost	Total carrying amount	Level 1	Level 2	Level 3	Total
12/31/2018									
Financial assets measured at fair value									
<u>Non-current assets</u>									
Derivative financial instruments	2,229	--	--	--	2,229	--	2,229	--	2,229
Equity securities	--	5	--	--	5	--	--	5	5
<u>Current assets</u>									
Bond funds	--	12,905	--	--	12,905	12,905	--	--	12,905
Financial assets not measured at fair value									
<u>Current assets</u>									
Cash and cash equivalents	--	--	7,402	--	7,402	7,402	--	--	7,402
Trade and other receivables	--	--	6,030	--	6,030	--	--	--	--
Financial liabilities not measured at fair value									
<u>Non-current liabilities</u>									
Long-term debt	--	--	--	16,250	16,250	--	15,231	--	15,231
Finance lease obligation	--	--	--	71	71	--	69	--	69
<u>Current liabilities</u>									
Long-term debt	--	--	--	816	816	--	809	--	809
Finance lease obligation	--	--	--	34	34	--	34	--	34
Trade payables	--	--	--	2,945	2,945	--	--	--	--

The financial assets with a carrying amount of kEUR 9,427 reported on the Company's statement of financial position at December 31, 2019 were comprised of investments in four bond funds (kEUR 5,667, thereof kEUR 2,000 restricted), one note receivable (kEUR 1,278) and restricted cash (kEUR 463), all reported as current financial assets, an equity forward (kEUR 2,014) and equity securities (kEUR 5) reported as a noncurrent asset.

The financial assets with a carrying amount of kEUR 15,139 reported on the Company's statement of financial position at December 31, 2018 were comprised of investments in seven bond funds (kEUR 11,847) and one note receivable (kEUR 1,058), all reported as current financial assets, an equity forward (kEUR 2,229) and equity securities (kEUR 5) reported as a noncurrent asset.

The fair value of the Company's investments in the bond funds was determined based on the unit prices quoted by the respective fund management company. The funds pursue the goal of daily liquidity and invest in short-term notes. The funds are open-ended; the units can be redeemed to the fund on a daily basis. Unit prices updated by the fund management company on a daily basis represent a quoted price in an active market.

The fair value of long-term debt was determined using discounted cash flow models based on the relevant forward interest rate yield curves. The fair value of finance lease obligations was determined using discounted cash flow models based on market interest rates available to the Company for similar transactions at the relevant date.

The fair value of the derivative financial instruments was determined based on the Company's stock price and the risk-free interest rate for the remaining term of the derivative using a forward pricing formula.

13. Cost of sales

Cost of sales includes personnel expenses, cost of material, purchased services, cost for finished goods and allocated indirect costs related to production.

COST OF SALES

	Year Ended December 31,		
	2019	2018 ⁽¹⁾	2017 ⁽²⁾
	(€ in thousands)		
Personnel expenses	(5,583)	(5,404)	(4,344)
Material costs	(6,796)	(7,082)	(6,443)
Depreciation	(2,686)	(2,197)	(2,071)
Other expenses	(2,382)	(2,598)	(1,510)
Allowance for slow-moving inventory	21	417	515
Total	(17,426)	(16,864)	(13,853)

⁽¹⁾ The Company has initially applied IFRS 16 as of January 1, 2019, using the modified retrospective approach. Under this approach, comparative information is not restated and the cumulative effect of initially applying IFRS 16 is recognized in retained earnings at the date of initial application. For further information, see Note 3 of the consolidated financial statements.

⁽²⁾ Comparative figures for the year ended December 31, 2017 were restated for immaterial errors.

In 2019, other expenses primarily consisted of cost of maintenance (kEUR 535), travel expenses (kEUR 312), expenses related to insurances (kEUR 269) rental and building expenses (kEUR 149) and license fees (kEUR 57).

In 2018, other expenses primarily consisted of rental and building expenses (kEUR 491), travel expenses (kEUR 294) and license fees (kEUR 92).

In 2017, other expenses primarily consisted of license fees (kEUR 404), rental and building expenses (kEUR 463) and travel expenses (kEUR 296).

14. Other operating income and expense

The details of other operating income and expenses are presented for the years reported in the tables below:

OTHER OPERATING INCOME

	Year Ended December 31,		
	2019	2018	2017
	(€ in thousands)		
Government grant income	21	11	120
Amortization of gain on sale and leaseback transactions	--	119	206
Reimbursement of transaction costs	127	121	254
Gains from foreign exchange transactions	1,657	794	135
Other	338	252	286
Total	2,143	1,297	1,001

Other operating income includes an amount of kEUR 132 (2018: kEUR 38, 2017: kEUR 33) for the movement of impairment on trade receivables.

OTHER OPERATING EXPENSE

	Year Ended December 31,		
	2019	2018	2017
	(€ in thousands)		
Impairment loss on trade receivables	60	224	240
Losses from foreign exchange transactions	880	511	1,585
Other	5	16	19
Total	945	751	1,844

15. Financial result

The details of financial result are presented for the years reported in the table below:

	Year Ended December 31,		
	2019	2018	2017
	(€ in thousands)		
Interest expense	(1,458)	(1,143)	(190)
Interest expense on lease liability (2018: Finance lease obligations)	(190)	(69)	(45)
Long-term debt	(993)	(944)	(100)
Expense from revaluation of derivative financial instruments	(215)	--	--
Other	(60)	(130)	(45)
Interest income	144	1,952	365
Payout of bond funds	126	58	11
Income from revaluation of derivative financial instruments	--	1,877	352
Other	18	17	2
Financial result	(1,314)	809	175

16. Income taxes

Income taxes consist of the following for the years reported:

Income tax (expense) benefit

	Year Ended December 31,		
	2019	2018	2017
	(€ in thousands)		
Current tax expense	--	--	--
Deferred tax (expense) benefit	(9)	(11)	(80)
Total	(9)	(11)	(80)

Deferred tax assets and liabilities

The components of net deferred income taxes at the end of the respective reporting periods were as follows:

SOURCES OF DEFERRED TAX ASSETS AND LIABILITIES

	December 31,		2018	
	2019	(€ in thousands)		
	Deferred tax assets	Deferred tax liabilities	Deferred tax assets	Deferred tax liabilities
Trade receivables	--	(8)	1	(18)
Other receivables and current assets	1,050	(118)	959	(62)
Inventories	11	--	22	(10)
Property, Plant & Equipment	99	(603)	329	(85)
Trade liabilities	206	--	231	--
Current financial liabilities	1,020	(110)	209	--
Current financial assets	--	(710)	3	(624)
Other current liabilities and provisions	19	(887)	204	(729)
Contract liabilities	247	(247)	17	(141)
Non-current financial liabilities	--	--	--	(76)
Intangible assets	--	(1)	--	(1)
Tax losses carried forward	227	--	113	--
Valuation allowance	(265)	--	(418)	--
Tax assets (liabilities)	2,615	(2,684)	1,670	(1,746)
Set off of tax	(2,615)		(1,670)	1,670
Net tax	--	(69)	--	(76)

At December 31, 2019 voxeljet had gross loss carry-forwards for corporation tax and trade tax losses of kEUR 37,988 and kEUR 37,222, respectively, for which no deferred taxes have been recognized. These tax losses can be carried forward without restriction for future offset against taxable profits. In addition, there are foreign tax loss carry-forwards of kEUR 17,357, primarily related to our subsidiary in the UK.

Reconciliation of profit before income taxes to income tax

The reconciliation between profit before income taxes and income tax benefit (expense) for the reporting periods presented was as follows:

RECONCILIATION OF INCOME TAX BENEFIT (EXPENSE)

	Year Ended December 31,		
	2019	2018 ⁽¹⁾	2017 ⁽²⁾⁽³⁾
	(€ in thousands)		
Loss before tax	(14,222)	(8,753)	(8,474)
Tax expense at prevailing statutory rate (28%)	3,982	2,451	2,373
Non-deductible expenses	(447)	(196)	(326)
Non-taxable income	--	242	266
Tax-rate related differences	(198)	(128)	(139)
Unrecognized temporary differences and tax losses	(3,346)	(2,380)	(2,254)
Income tax expense	(9)	(11)	(80)

17. Personnel expenses

Personnel expenses included in cost of sales, research and development, and selling and administrative expenses are comprised of the following:

PERSONNEL EXPENSES

	Year Ended December 31,		
	2019	2018	2017
	(€ in thousands)		
Wages and salaries	13,885	12,772	10,769
Employee stock option plan	671	604	386
Social security contributions	2,710	2,527	2,197
Total	17,266	15,903	13,352

voxeljet AG offers to its employees a defined contribution plan called “MetallRente”. The contributions paid by the Company amounted to kEUR 66, kEUR 61 and kEUR 62 for the years ended December 31, 2019, 2018 and 2017, respectively and is presented within social security contributions. The employer’s contribution into the mandatory German state plan amounted to kEUR 889, kEUR 849 and kEUR 710 for the years ended December 31, 2019, 2018, and 2017, respectively.

18. Segment reporting

voxeljet operates in two reportable segments—Systems and Services—which reflect the internal organizational and management structure according to the distinct nature of the two businesses. The Systems business derives its revenues from the manufacture and sale of 3D printers, from the sale of consumables, as well as from lease, maintenance and extended warranty agreements with customers, while the Services business provides customized printed products to customers.

The Management Board of voxeljet is the chief operating decision maker. The chief operating decision maker mainly monitors the Company’s revenues and gross profit, as the performance indicators.

The following table summarizes segment reporting for each of the reporting periods ended December 31. As management’s controlling instruments are mainly revenue-based, the reporting information does not include a detailed breakdown of all assets and liabilities by category. The sum of the amounts for the two segments equals the total for the Company for each of the years presented.

SEGMENT REPORTING

	Year Ended December 31,					
	2019		2018 ⁽¹⁾		2017 ⁽¹⁾⁽²⁾⁽³⁾	
	(€ in thousands)					
	SYSTEMS	SERVICES	SYSTEMS	SERVICES	SYSTEMS	SERVICES
Revenues	13,454	11,148	12,248	13,761	11,534	11,644
Gross profit	4,284	2,892	3,708	5,437	4,258	5,067
Gross profit in %	31.8%	25.9%	30.3%	39.5%	36.9%	43.5%
PPE	13,093	14,250	11,804	15,871	13,070	14,628

⁽¹⁾ The Company has initially applied IFRS 16 as of January 1, 2019, using the modified retrospective approach. Under this approach, comparative information is not restated and the cumulative effect of initially applying IFRS 16 is recognized in retained earnings at the date of initial application. For further information, see Note 3 of the consolidated financial statements.

⁽²⁾ Comparative figures for the year ended December 31, 2017 were restated for immaterial errors.

⁽³⁾ The Company has initially applied IFRS 15 and IFRS 9 as of January 1, 2018. Under the transition methods chosen, comparative information has not been restated.

[Table of Contents](#)

Systems revenues include revenues from the sales of used 3D printers of kEUR 2,007, kEUR 1,489, and kEUR 2,556 for the years ended December 31, 2019, 2018, and 2017, respectively.

Geographic information**REVENUES BY GEOGRAPHICAL REGION**

voxeljet's revenues and non-current assets are presented below by geographic region. For purposes of this presentation, revenues are based on the geographic location of customers and assets are based on their geographic location.

voxeljet's revenues were generated in the following geographical regions for the years reported:

	Year Ended December 31,		
	2019	2018	2017
	(€ in thousands)		
EMEA	11,265	14,673	14,832
Germany	4,474	6,605	5,677
France	1,314	2,667	2,611
Great Britain	1,224	1,050	1,459
Others	4,253	4,351	5,085
Asia Pacific	6,302	5,450	2,526
Indonesia	55	1,819	--
China	3,993	2,134	1,549
South Korea	1,242	888	721
Others	1,012	609	256
Americas	7,035	5,886	5,820
United States	6,843	5,802	5,474
Others	192	84	346
Total	24,602	26,009	23,178

NON-CURRENT ASSETS BY GEOGRAPHICAL REGION

	December 31,	
	2019	2018
	(€ in thousands)	
EMEA	22,951	26,651
Germany	22,948	25,104
Great Britain	3	1,547
Asia Pacific	2,095	1,090
Americas	5,746	3,675
United States	5,746	3,675
Total	30,792	31,416

19. Financial risk management

The Company's Management Board is responsible for implementing the finance policy and for ongoing financial risk management. Therefore the Management Board has established a Risk Management Committee, which is responsible for developing and monitoring of the Group's risk management policies, especially regarding financial risks. Generally the committee provides an overview of financial risks on a quarterly basis to the Management Board as part of the Company's quarterly management reporting procedures.

The Company's principal financial instruments are comprised of short-term bank deposits at commercial institutions, bond funds, lease obligations and long-term debt. The main purpose of the financial asset instruments is to provide a return on investments with minimal risk. The main purpose of the financial liability instruments is to help fund the Company's operations. The Company has various other financial assets and liabilities including trade receivables and trade payables, which arise directly from its operations.

[Table of Contents](#)

The main purpose of the financial liability instruments is to fund the Company's operations and research and development activities. A portion of the long-term debt includes a derivative financial instrument related to a future interest payment which is linked to the Company's stock price (Performance Participation Interest).

The main risks arising from the Group's financial instruments are foreign exchange risk, credit risk and equity price risks. The measures taken by Management to manage each of these risks are summarized below.

Transactions related to activities in the area of financial instruments require the prior approval of the Chief Financial Officer. The Company did not enter into any derivative financial instruments for hedging purposes in 2019.

Management receives a weekly reporting of the current liquidity of the Group by entity. Furthermore, a monthly cash flow plan meeting has been established, where Management reviews the cash forecasts and the future development of flows of funds on an ongoing basis.

Foreign exchange risk

The Company is exposed to foreign exchange risk to the extent that there is a difference between the currencies in which sales, purchases and borrowings are denominated and the respective functional currencies of subsidiaries of the Group. The functional currencies of the parent company voxeljet AG and its subsidiaries are Euro, U.S. Dollars, British Pound Sterling, Indian rupee and Chinese yuan renminbi. The majority of the sale, purchase and borrowing transactions are denominated in the functional currency of the parent company or its subsidiaries. The Company's most significant foreign exchange risk relates to intercompany loans made to subsidiaries, as described below.

voxeljet has provided intercompany loans to its subsidiaries to finance their operations. The loans were granted in the local currency of the subsidiaries. Gains and losses from movements in exchange rates are recorded within other operating income or expense in the consolidated statement of comprehensive loss. As of December 31, 2019 the amount loaned to voxeljet UK by voxeljet AG totaled GBP 7.8 million (€ 9.1 million). A relative increase in the value of the Euro against British Pound Sterling of 10% would lead to a loss of € 0.8 million. The amount of loaned to voxeljet America totaled to USD 5.6 million (€ 5.0 million) as of December 31, 2019. An increase in the value of the Euro against U.S. Dollars of 10% would lead to a loss of € 0.5 million.

For the year ended December 31, 2019, voxeljet generated 30.6% of its revenues in the eurozone. Additionally, the majority of the Company's sourcing transactions are also transacted in Euros in that zone.

The Company invoiced 62% in 2019, 70% in 2018 and 70% in 2017 of total revenues in Euro. As revenues in foreign currency usually correspond to costs which are incurred in the same currency, we consider the risk as minor.

The significant exchange rates which have been applied during the years presented are disclosed in Note 3.

Interest rate risk

voxeljet's principal interest-bearing positions are liabilities for bank borrowings and lease liabilities. These liabilities are entirely at a fixed interest rate, with one exception. As such, changes in market interest rates have no material effect on future interest expenses. A change of 10% in interest rates would increase or decrease interest expense less than kEUR 2.

In connection with the first tranche of the loan received by the EIB amounting to € 10.0 million, the Company issued a warrant, Performance Participation Interest (PPI), accounted for separately as derivative financial instruments from the host contract (loan financial liability), with changes in fair value reported in the consolidated statements of comprehensive loss until the derivative financial instruments settle or expire. The loan is accounted for according to the effective interest method. The effective interest rate of the loan with the EIB is 7.58%, which is imputed based on the fair value of the derivative financial instruments on the date of the loan disbursement. Changes in the market interest will not affect the loan accounting. However, the derivative instrument is affected by changes in the risk-free rate. Increases in the risk-free rate will lead to a decrease of the fair value of the derivative instrument; decreases in the risk-free rate will lead to an increase in the fair value of the derivative instrument.

Equity price risk

The Company is also exposed to equity price risks which arise from derivative financial instruments (PPI) associated with the loan received by the EIB which depend upon the Company's share price. Changes in the Company's share price will affect the value of an equity forward derivative instrument (increasing share prices as compared to the share price at disbursement date will lead to a negative fair value of the derivative, decreasing share prices will lead to a positive fair value of the derivative). An increase/decrease of the price per ADR by USD 1.00 leads to an increase/decrease of the derivative financial instrument by € 1.1 million.

Credit risk

Credit risk is the risk of the Company suffering a financial loss as the result of its counterparties being unable to perform their obligations. The Company is exposed to credit risk from its operating activities (mainly trade receivables) and from its financing activities, including deposits and investments with financial institutions. Therefore, the carrying amount of cash and cash equivalents, financial assets, and trade receivables represents the maximum credit exposure of € 17.7 million (2018: € 26.4 million).

The Company's exposure to credit risk is influenced by the individual characteristics of each customer. However, Management also considers factors that influence the credit risk of its customer base, including the default risk of the industry and the country in which the customer operates. voxeljet seeks to minimize such risk by entering into transactions with counterparties that are believed to be creditworthy business partners or with financial institutions which meet high credit rating requirements. In addition, the portfolio of receivables and customer advances is monitored on a continuous basis. Credit risk is limited to a specified amount with regard to individual receivables. There were no customer loans outstanding as of December 31, 2019 and 2018. Since 2018, the Company calculates an expected credit loss (ECL) based on the risk scoring its customers' according to an external rating agency. Following the risk score of each customer, the trade receivables are clustered into different grades. For each grade, the ECL is calculated after deducting from trade receivables a loss allowance based on actual credit loss experience.

The Group limits its exposure to credit risk by investing only in bond funds which are fully guaranteed by the financial institutions and therefore represents short term credit rating of A-3 based on Standard & Poor's or P-2 based on Moody's.

The bank deposits are held with financial institutions, which are rated BBB to A2 based on Standard & Poor's and Moody's.

Reconciliation of movements of liabilities to cash flows arising from financing activities

<i>(€ in thousands)</i>	Liabilities			Equity				Total
	Other loans and borrowings	Finance lease liabilities	Lease liabilities	Subscribed capital	Capital reserves	Accumulated deficit	Non-controlling interests	
Balance at January 1, 2019	17,066	105	—	4,836	86,803	(46,400)	35	62,445
Adjustment on initial application of IFRS 16	—	(105)	3,574	—	—	—	—	3,469
Restated balance at January 1, 2019	17,066	—	3,574	4,836	86,803	(46,400)	35	65,914
Changes from financing cash flows								
Proceeds from loans and borrowings	529	—	—	—	—	—	—	529
Repayment of borrowings	(969)	—	—	—	—	—	—	(969)
Payment of lease liabilities	—	—	(397)	—	—	—	—	(397)
Proceeds from issuance of shares	—	—	—	—	—	—	—	—
Total changes from financing cash flows	(440)	—	(397)	—	—	—	—	(837)
Other changes								
Liability-related								
New leases	—	—	954	—	—	—	—	954
Reclassification	920	—	(521)	—	—	—	—	399
Interest expense	993	—	190	—	—	—	—	1,183
Interest paid	(993)	—	(190)	—	—	—	—	(1,183)
Total liability-related other changes	920	—	433	—	—	—	—	1,353
Total equity-related other changes	—	—	—	—	1,274	(13,967)	(48)	(12,741)
Balance at December 31, 2019	17,546	—	3,610	4,836	88,077	(60,367)	(13)	53,689

(€ in thousands)	Liabilities			Equity				Total
	Bank overdrafts used for cash management purposes	Other loans and borrowings	Finance lease liabilities	Subscribed capital	Capital reserves	Accumulated deficit ⁽¹⁾⁽²⁾	Non-controlling interests	
Restated balance at January 1, 2018	58	17,038	479	3,720	76,227	(37,672)	71	59,921
Changes from financing cash flows								
Proceeds from loans and borrowings	—	1,639	—	—	—	—	—	1,639
Repayment of borrowings	(58)	(2,764)	—	—	—	—	—	(2,822)
Payment of finance lease liabilities	—	—	(361)	—	—	—	—	(361)
Proceeds from issuance of shares	—	—	—	1,116	9,972	—	—	11,088
Total changes from financing cash flows	(58)	(1,125)	(361)	1,116	9,972	—	—	9,544
Other changes								
Liability-related								
Capitalized borrowing costs	—	—	—	—	—	—	—	—
Reclassification	—	1,152	(13)	—	—	—	—	1,139
Interest expense	—	944	69	—	—	—	—	1,013
Interest paid	—	(943)	(69)	—	—	—	—	(1,012)
Total liability-related other changes	—	1,153	(13)	—	—	—	—	1,140
Total equity-related other changes	—	—	—	—	604	(8,728)	(36)	(8,160)
Balance at December 31, 2018	—	17,066	105	4,836	86,803	(46,400)	35	62,445

⁽¹⁾ Restated balance at January 1, 2018 includes restatement for immaterial errors.

⁽²⁾ Restated balance at January 1, 2018 includes impact of the adoption of IFRS 9 and IFRS 15.

Liquidity risk

Liquidity risk is the risk that voxeljet might not have sufficient cash to meet its payment obligations associated with its financial liabilities that are settled by delivering cash or another financial asset. The Company's approach to managing liquidity is to ensure, as far as possible, that it will have sufficient liquidity to meet its liabilities when they are due, under both normal and stressed conditions, without incurring unacceptable losses or risking damage to the reputation of the Company. Liquidity risk is countered by systematic, day-by-day liquidity management whose fundamental requirement is that solvency must be guaranteed at all times. A major responsibility of management is to monitor the cash balances and to set up and update cash planning on a monthly basis to ensure liquidity. At all times cash and cash equivalents are projected on the basis of a regular financial and liquidity planning. The monitoring includes the expected cash inflows on trade and other receivables together with expected cash outflows from trade and other payables. For further discussion see note 2.

The following table provides an overview of all outstanding loans voxeljet entered into:

	Currency	Nominal interest rate	Year of maturity	December 31, 2019		December 31, 2018	
				Face value	Carrying amount	Face value	Carrying amount
(€ in thousands)							
Secured bank loan	EUR	3.27%	2020	800	73	700	215
Secured bank loan	EUR	2.29%	2021	700	254	700	395
Secured bank loan	EUR	2.35%	2021	1,000	278	1,000	481
Secured bank loan	EUR	2.47%	2038	2,000	1,774	2,000	1,850
Secured bank loan	EUR	2.72%	2038	1,000	887	1,000	924
Secured bank loan	EUR	2.42%	2038	500	448	500	466
Secured bank loan	EUR	2.73%	2046	500	446	500	465
Secured bank loan	EUR	1.75%	2042	1,000	899	1,000	935
Secured bank loan	EUR	2.48%	2022	675	376	675	511
Secured bank loan	EUR	2.49%	2024	500	429	500	--
Unsecured bank loan	EUR	3.92%	2025	29	24	--	--
Unsecured bank loan	USD	2.90%	2022	40	17	40	25
Unsecured bank loan	EUR	0.00%	2022	10,000	11,641	10,000	10,798
Lease liabilities (2018: finance lease liabilities)	EUR	1.6%-9.3%	2020-2029	3,988	3,610	210	106
Total interest-bearing liabilities				22,732	21,156	18,825	17,171

The secured bank loans are secured over land and buildings, machinery and equipment and pledged bond funds with a carrying amount of kEUR 5,000 (2018: kEUR 5,000), kEUR 1,618 (2018: kEUR 1,691) and kEUR 2,000 (2018: kEUR 0), respectively.

In 2016, voxeljet concluded new loan agreements with Kreissparkasse Augsburg, Germany, to finance the construction of new office and production facilities in Friedberg: (i) in May 2016, the Company entered into a € 1.0 million loan agreement due April 30, 2021. Interest is payable at a fixed rate of 2.35%; (ii) in September 2016, the Company entered into a € 2.0 million loan agreement due May 31, 2038. Interest is payable at a fixed rate of 2.47%; (iii) In October 2016, the Company entered into a € 0.7 million loan agreement due September 30, 2021. Interest is payable at a fixed rate of 2.29%; and (iv) in December 2016, the Company entered into a € 1.0 million loan agreement due January 31, 2038. Interest is payable at a fixed rate of 2.72%. Among other terms, the loan agreements contain (i) certain covenants, including that voxeljet deposit € 2.0 million with Kreissparkasse Augsburg until it has reached a certain ratio with respect to its ability to service the debt by the end of fiscal year 2019, and (ii) change of control provisions concerning the ownership of the Company by its executive officers, Dr. Ingo Ederer and Rudolf Franz. As of December 31, 2019, voxeljet was in non-compliance with that ratio and therefore pledged € 2.0 million of bond funds for the benefit of the lender. In addition, the land owned by voxeljet upon which the facilities will be built as well as three 3D printers will serve as collateral under the loan agreements.

On November 9, 2017, the EIB and the Company entered into a Finance Contract and Synthetic Warrant Agreement to support the Company's undertaking of research and development projects for growth from 2017 to 2020. The contract provides a credit of up to € 25 million in three tranches of € 10 million, € 8 million, and € 7 million.

Under the Contract, the Company may borrow under the credit up to € 25 million, subject to a limit of 50% of the total research and development expenditures and manufacturing capital expenditures from 2017 to 2020. The interest rates for the three tranches are 0%, 7% and 3%, respectively. The Company may borrow the second and third tranche only if certain revenue and EBITDA levels are met. The Contract also includes a financial covenant that requires the Company to meet certain minimum financial ratios from 2019 to 2025. Under a First Demand Guarantee Agreement the Finance Contract is guaranteed by the voxeljet USA subsidiary.

At the time the first tranche of € 10 million was received on December 22, 2017, the EIB under the Synthetic Warrant Agreement was entitled to receive as consideration cash equal to the market value of 195,790 ordinary shares of the Company (or equivalent number of ADS of the Company) at the maturity date (5 years after draw down), after the occurrence of a trigger event, or on the expiration date (10 years after draw down). Under the anti-dilution protection clause of the agreement the number of ordinary shares under the Synthetic Warrant Agreement was increased to 254,527 as a result of the capital increase effective October 17, 2018 and November 1, 2018.

[Table of Contents](#)

The Company has breached its Total Net Financial Debt to EBITDA ratio financial covenant and was in non-compliance with the letters of credit limit under the Finance Contract with the European Investment Bank (“EIB”) as of December 31, 2019, under which the Company has to comply with certain minimum thresholds. As a result of the breach, the Company has reclassified the face value of the loan of kEUR 10,000 from a non-current liability to a current liability as of December 31, 2019. After negotiations with the EIB, which started in July 2019, in March 2020, voxeljet received a waiver for the covenant breach in 2019 and also a grace period until March 31, 2021, for which voxeljet can rectify the breach and during which the EIB cannot demand immediate repayment. In return, the Company registered a first rank land charge amounting to kEUR 10,000 on its land and facility located in Friedberg, Germany as collateral in favor of the EIB in March 2020.

In April 2019, voxeljet entered into a loan agreement with Kreissparkasse Augsburg, Germany, to finance self-manufactured 3D printers which are operated in the German service center amounting to kEUR 500. The maturity date is five years after draw down and the drawn down occurred at the end of April 2019. The fixed interest rate amounts to 2.49%. voxeljet pledged two 3D printers from property plant and equipment as collateral.

The following are the remaining contractual maturities of financial liabilities and trade payables at the reporting date. The amounts are gross and undiscounted and include contractual interest payments.

		December 31, 2019 (€ in thousands)					
		Contractual cash flow					
	carrying amount	Total	2 months or less	2-12 months	1-3 years	3-5 years	More than 5 years
Long-term debt	17,546	(19,132)	(178)	(10,818)	(1,252)	(2,378)	(4,506)
Lease liability	3,610	(4,409)	(102)	(447)	(1,054)	(1,307)	(1,499)
Trade payables	2,797	(2,797)	(2,797)	--	--	--	--
Total	23,953	(26,338)	(3,077)	(11,265)	(2,306)	(3,685)	(6,005)

		December 31, 2018 (€ in thousands)					
		Contractual cash flow					
	carrying amount	Total	2 months or less	2-12 months	1-3 years	3-5 years	More than 5 years
Long-term debt	17,066	(22,529)	(160)	(799)	(1,518)	(15,251)	(4,801)
Finance lease obligations	105	(109)	(9)	(27)	(56)	(17)	--
Trade payables	2,945	(2,945)	(2,945)	--	--	--	--
Total	20,116	(25,583)	(3,114)	(826)	(1,574)	(15,268)	(4,801)

In spite of the significant cash outflow in 2019 and 2018, the Company’s short liquidity needs are currently covered. This is supported through the current liquidity forecast including certain sensitivities. The 24-months business plan includes the raising of additional capital through additional debt, equity or other alternatives to ensure the cash requirements of the Company. As the cash position of the Company has significantly decreased within the last years, the mid-term liquidity risk is considered as high.

20. Capital management

Management’s aim is to maintain a sufficient capital base so as to maintain investor, creditor and market confidence and to sustain future development of the business.

Equity is monitored by the Company using financial ratios. The equity used as a basis for determining the equity ratio corresponds to the equity disclosed in the Consolidated Statement of Financial Position.

[Table of Contents](#)

voxeljet's capital structure as of the end of the reporting periods 2019 and 2018 was as follows:

CAPITAL STRUCTURE

	December 31,	
	2019	2018
	(€ in thousands)	
Equity	33,331	46,475
Share of total equity and liabilities	53.5%	67.0%
Current financial liabilities	11,290	850
Non-current financial liabilities	9,866	16,321
Total financial liabilities	21,156	17,171
Share of total equity and liabilities	34.0%	24.8%
Total equity and liabilities	62,305	69,352

21. Leases

The Group has initially adopted IFRS 16, *Leases* on January 1, 2019. For further information, see Part III, Item 18. Financial Statements, Note 3 “Summary of significant accounting policies” to the consolidated financial statements.

Leases as lessee

The Company leases assets, including properties, production equipment and vehicles. As a lessee, the Company previously classified leases as operating or finance leases based on its assessment of whether the lease transferred substantially all of the risks and rewards of ownership. Under IFRS 16, the Company recognizes right-of-use assets and lease liabilities for most leases. These leases are on-balance sheet.

However, the Company has elected not to recognize right-of-use assets and lease liabilities for some leases of low-value assets (e.g. tools) as well as short-term leases (leases with less than 12 months of lease term). The Company recognizes the lease payments associated with these leases as an expense on a straight-line basis over the lease term.

Right-of-use assets:

	Property, plant and equipment			Total
	Property	Production equipment	Others	
	(€ in thousands)			
Balance at January 1, 2019	3,109	112	280	3,501
Depreciation charge of the year	(578)	(39)	(148)	(765)
Additions to the right-of-use assets	1,645	--	123	1,768
Revaluations to the right-of-use assets	(513)	(1)	(2)	(516)
Derecognition of the right-of-use assets	(24)	--	--	(24)
FX	19	--	1	20
Balance at December 31, 2019	3,658	72	254	3,984

The revaluation of kEUR 516 to the right-of-use assets is due to the early termination of the lease agreement of the facility in Milton Keynes, related to the restructuring of voxeljet UK.

Amounts recognized in profit or loss:

	2019
	(€ in thousands)
2019: Leases under IFRS 16	
Interest on lease liabilities	190
Expenses relating to short-term-leases	39
Depreciation charge of the year	765
2018: Operating leases under IAS 17	
Lease expense	528

[Table of Contents](#)

Amounts recognized in statement of cash flows:

	2019 (€ in thousands)
Total cash outflow for leases	(397)

Some property leases contain extension options exercisable by the Group up to one year before the end of the non-cancellable contract period. Where practicable, voxeljet seeks to include extension options in new leases to provide operational flexibility. The extension options held are exercisable only by the Group and not by the lessors. The Group assesses at lease commencement date whether it is reasonably certain to exercise the extension options. The Group reassesses whether it is reasonably certain to exercise the options, if there is a significant event or significant changes in circumstances within its control.

For all existing extension options, voxeljet assessed that the exercise of those is reasonably certain. Therefore the impact is already included within the lease liabilities.

Leases as lessor

The Company leases out a small number of 3D printers. Those leases have been classified as operating leases.

Lease income from operating lease:

(€ in thousands)	
2019 - Operating lease under IFRS 16	
Less than one year	38
2018 - Operating lease under IAS 17	
Less than one year	94

22. Commitments, contingent assets and liabilities

In connection with the enforcement of voxeljet's intellectual property rights, the acquisition of third-party intellectual property rights, or disputes related to the validity or alleged infringement of the Company's or a third-party's intellectual property rights, including patent rights, voxeljet has been and may in the future be subject or party to claims, negotiations or complex, protracted litigation.

In March 2018, ExOne GmbH, a subsidiary of ExOne, notified voxeljet of its intent not to pay its annual license fees under an existing intellectual property-related agreement and asserted its rights to claim damages pursuant to an alleged material breach of the agreement. At this time, the Company cannot reasonably estimate a contingency, if any, related to this matter.

23. Related party transactions

Related party transactions at voxeljet mainly consist of transactions with individuals on the Management Board and Supervisory Board.

Key management is defined as those individuals having authority and responsibility for planning, directing and controlling the activities of the Company within their function and within the interest of the Company.

[Table of Contents](#)

The following table presents the amount and components of Management Board compensation:

MANAGEMENT COMPENSATION

	Year Ended December 31,		
	2019	2018	2017
	(€ in thousands)		
Fixed compensation	782	781	778
Compensation from stock option plan	353	360	231
Total	1,135	1,141	1,009

Management Board remuneration currently consists of a fixed monetary remuneration, other fixed benefits (including Company car allowances and contributions to a defined contribution plan) as well as the participation in a stock options plan, which was executed on April 7, 2017. There were no variable compensations for the years 2017, 2018 and 2019.

Transactions with related parties

A related party relationship could have an effect on the profit and loss and financial position of the Company. Defined as related parties are individuals or other third parties with whom voxeljet has common control relationships.

OTHER RELATED PARTIES

Name	Nature of relationship	Duration of relationship
Franz Industriebeteiligungen AG, Augsburg	Lessor	10/01/2003-Current
Schlosserei und Metallbau Ederer, Dießen	Supplier	05/01/1999-Current
Andreas Schmid Logistik AG	Supplier	05/01/2017-Current
Suzhou Meimai Fast Manufacturing Technology Co., Ltd	Minority shareholder of voxeljet China, Customer	04/11/2016-Current
Simon Franz	Employee	04/11/2017-07/31/2019
DSCS Digital Supply Chain Solutions GmbH	Customer	05/11/2017-Current

Transactions with Franz Industriebeteiligungen AG comprise the rental of office space in Augsburg, Germany. Rental expenses amounted to kEUR 2, in each of 2019, 2018 and 2017. The rental of office space is ongoing and will continue in 2020. In addition, Franz Industriebeteiligungen AG received payments related to the use of certain paintings which are placed in the administrative building in Friedberg. Associated rental expenses amounted to kEUR 2 in each of 2018 and 2017. At the beginning of 2019, voxeljet acquired those paintings at a price of kEUR 2 and consequently the rental agreement pertaining to the paintings was terminated.

Further, voxeljet acquired goods amounting to kEUR 0, kEUR 7, and kEUR 15 in 2019, 2018 and 2017 from 'Schlosserei und Metallbau Ederer', which is owned by the brother of Dr. Ingo Ederer, the Chief Executive Officer of voxeljet.

In addition, voxeljet received logistics services amounting to kEUR 56, kEUR 74 and kEUR 43 in 2019, 2018 and 2017 from 'Andreas Schmid Logistik', where the member of our supervisory board Dr. Stefan Söhn serves as the Chief Financial Officer.

Moreover, voxeljet received orders amounting to kEUR 164, kEUR 175 and kEUR 244 in 2019, 2018 and 2017 from 'Suzhou Meimai Fast Manufacturing Technology Co., Ltd., which is our minority shareholder for voxeljet China.

Further, voxeljet received orders amounting to kEUR 13, kEUR 0 and kEUR 0 in 2019, 2018 and 2017 from 'DSCS Digital Supply Chain Solutions GmbH', which is an associated company where we own 33.3%.

In addition, voxeljet employed Simon Franz as an intern, who is the son of voxeljet's CFO Rudolf Franz. He received a salary of kEUR 9, kEUR 12 and kEUR 3 in 2019, 2018 and 2017, respectively.

24. Equity

At December 31, 2019, 4,836,000 no-par value ordinary shares were issued and outstanding. There is only a single class of ordinary shares with the same rights, preferences and restrictions. Each share entitles the holder to one vote at the shareholders' meeting. Shareholders participate in the profits according to their share in the share capital, based on their number of shares held. The general shareholders' meeting resolves the appropriation of the balance sheet profit established in the annual financial statements and the dividends.

On October 17, 2018, voxeljet issued 972,000 ordinary shares, equivalent to 4,860,000 American Depository Shares ("ADS"), at an offering price of USD 2.57 per ADS (the "Public Offering Price"). The Company received net proceeds of approximately € 9.7 million. Members of the Management Board, who are also significant shareholders, purchased an aggregate number of 233,462 ADSs in this offering at the Public Offering Price. On November 8, 2018, voxeljet closed the over-allotment transaction in which it issued additional 144,000 ordinary shares, equivalent to 720,000 ADSs, upon the exercise of the over-allotment option exercised by the underwriter on November 1, 2018. The Company received net proceeds of approximately € 1.4 million.

Incremental costs of € 0.6 million directly attributable to the issue of ordinary shares are recognized as a deduction from equity.

The Articles of Association authorize the Management Board, subject to the consent of the Supervisory Board, to increase the Company's registered share capital in one or more tranches by up to kEUR 2,418 by issuing up to 2,418,000 new no par value ordinary shares against contribution in cash or in kind until May 28, 2024.

On April 20, 2020, we received a notice from the New York Stock Exchange ("NYSE") stating that we were not in compliance with 802.01C of the NYSE's Listed Company Manual, which requires that we maintain a minimum average closing price of at least \$1.00 per share during a consecutive 30 trading-day period (the "\$1.00 Price Standard"). As of April 17, 2020, the average closing price of our ADSs was less than \$1.00 per share over a consecutive 30 trading-day period. The Company must regain compliance with the \$1.00 Price Standard by the end of the six-month cure period, otherwise the NYSE will initiate delisting proceedings.

On August 23, 2019, the Company received a notice from the NYSE stating that the Company was not in compliance with the continued listing requirements established in Section 802.01B and, at the same time, the Company's shareholders' equity was less than \$50 million. On January 24, 2020, the Company received a notice from the NYSE, notifying it that the NYSE agreed to accept the Company's compliance plan, and continue the listing of the Company for 18 months starting from August 23, 2019.

Because the Securities and Exchange Commission (the "SEC") declared effective on April 21, 2020 a COVID-19-triggered NYSE proposal to toll compliance with NYSE's \$50 Million Market Capitalization Standard and \$1.00 Price Standard through June 30, 2020, the Company's cure period for both the \$50 Million Market Capitalization Standard and the \$1.00 Price Standard will recommence on July 1, 2020.

In addition, if the Company's average global market capitalization over a consecutive 30 trading-day period is less than \$15 million (the "\$15 Million Market Capitalization Standard"), the NYSE will promptly initiate suspension and delisting procedures; the Company will not have any opportunity to regain compliance and the Company's ADSs will be delisted. However, in light of market-wide declines caused by the COVID-19 pandemic, on March 20, 2020, the SEC granted the NYSE's proposed suspension of the enforcement of the \$15 Million Market Capitalization Standard, which suspension is to last until June 30, 2020.

25. Subsequent events

In March 2020, voxeljet received a waiver for the covenant breach in 2019 and also a grace period until March 31, 2021, for which voxeljet can rectify the breach and during which the EIB cannot demand immediate repayment. In return, the Company registered a first rank land charge on its land and facility located in Friedberg, Germany as collateral in favor of the EIB in March 2020. For further discussion see Note 2.

In late 2019 COVID-19 was identified in Wuhan, China, and has since spread globally, resulting in the ongoing COVID-19 pandemic. Many governments have declared states of emergency and imposed varying degrees of

[Table of Contents](#)

restrictions on social and commercial activities, to prevent and slow the spread of COVID-19. Such restrictive measures have resulted in significant disruption to business operations and a significant increase in economic uncertainty, with more volatile asset prices and currency exchange rates, and a marked decline in long-term interest rates in developed economies. These events and conditions create a level of uncertainty and risk that companies may not have encountered before, and may result in significant financial reporting implications for preparers of financial statements. Also, voxeljet expects adverse impacts from the COVID-19 pandemic, including decline in revenues for the Services segment and service and maintenance business of the Systems segment mainly during the second quarter of 2020. In addition, voxeljet expects some delays in installation of 3D printers at customers' facilities, which could lead to postponed revenue recognition for those transactions. Furthermore, voxeljet expects delays in payments from our customers related to receivables from the sale of 3D printers from the fourth quarter of 2019. However we currently do not expect payment defaults. In order to decrease the risk of contagion, most of the Company's administrative work is performed remotely. This could impede or slow down work processes caused by, among other things, increased difficulty in coordinating with other colleagues. However, voxeljet currently does not anticipate facing significant constraints and challenges with remote working as our employees are successfully utilizing advanced communication technology to work remotely and are highly flexible with work arrangements. Furthermore, we have implemented an initiative to promote telework and staggered work hours to ensure that our employees can continue to effectively perform their roles even if the COVID-19 pandemic continues to require protracted remote working. As the spread of COVID-19 is considered as a non adjusting subsequent event, the carrying amounts as of December 31, 2019 have not been adjusted.

**DESCRIPTION OF THE REGISTRANT'S SECURITIES
REGISTERED PURSUANT TO SECTION 12 OF THE
SECURITIES EXCHANGE ACT OF 1934**

The following description sets forth certain material terms and provisions of the securities of voxeljet AG (“voxeljet,” or the “Company,” “we,” “us,” and “our”) that are registered under Section 12 of the Securities Exchange Act of 1934, as amended (the “Exchange Act”). This description also summarizes relevant provisions of German corporate law, including the German Stock Corporation Act (Aktengesetz, or AktG). The following summary does not purport to be complete and is subject to, and is qualified in its entirety by reference to, the applicable provisions of German corporate law, [our rules of procedure of the supervisory board](#), [our rules of procedure of the management board](#), [our articles of association](#) and [Deposit Agreement](#) (as defined below), a copy of which is incorporated by reference as an exhibit to the Annual Report on 20-F of which this Exhibit is a part. We encourage you to read our articles of association and the applicable provisions of German law for additional information.

General

Our securities include (a) our ordinary shares, at no par value and €1.00 nominal value per share, and (b) our American Depositary Shares (the “ADSs”), each representing one-fifth of an ordinary share, €0.20 nominal value per share. Our ordinary shares are registered under the Exchange Act not for trading purposes, but only in connection with the registration of ADSs pursuant to the requirements of the Securities and Exchange Commission (the “Commission”).

Our ADSs are listed on the New York Stock Exchange (the “NYSE”) under the trading symbol “VJET.”

The following is a description of the rights of (i) the holders of ordinary shares and (ii) ADS holders. Ordinary shares underlying the outstanding ADSs are held by Citibank N.A., as depositary.

Ordinary Shares

The following is a summary of the rights of our holders of our ordinary shares as specified in our articles of association.

Type and Class of Securities

Each ordinary share has no par value and a nominal value of €1.00 per share.

Authorized Ordinary Shares

The articles of association authorize the management board, subject to the consent of the supervisory board, to increase the Company's registered share capital in one or more tranches by up to kEUR 2,418 by issuing up to 2,418,000 new no par value ordinary shares against contribution in cash or in kind until May 28, 2024. The outstanding shares of our ordinary share are duly authorized, validly issued, fully paid and nonassessable.

Subscription Rights

In principle, shareholders shall be granted subscription rights for new shares. Under German law, the statutory subscription right may also be offered in such a way that the new shares are taken over by a bank or by a financial institution which is then obligated to offer them indirectly to the shareholders for subscription.

Under our articles of association, with the consent of the supervisory board, the management board is authorized to exclude the shareholders' subscription rights in the following circumstances:

- to exclude fractional amounts resulting from the subscription ratio from the statutory subscription right of the shareholders;
- in the case of increases of the share capital against contributions in kind, in particular, but without limitation, to acquire companies, divisions of companies or interests in companies; or
- in the case that the increase of the share capital is against contributions in cash, and provided that the issue price of the new shares is not substantially lower (as defined in the German Stock Corporation Act) than the stock exchange price for our shares of the same class and having the same conditions already listed at the time of the final determination of the issue price, and further provided that the amount of the share capital represented by the shares issued under the exclusion of the statutory subscription right granted pursuant to German law does not exceed 10% of the share capital at the time of this authorization coming into effect or being exercised. The 10% threshold shall include new or treasury shares of the Company which are issued or transferred during the term of this authorized capital on another legal basis under the exclusion of the statutory subscription rights granted pursuant to German law.

According to the German Stock Corporation Act, every shareholder is generally entitled to subscription rights (commonly known as preemptive rights) to any new shares issued within the framework of a capital increase, including convertible bonds, bonds with warrants, profit-sharing rights or income bonds in proportion to the number of shares he or she holds in the corporation's existing share capital. Under German law, these rights do not apply to shares issued out of conditional capital. A minimum subscription period of two weeks must be provided for the exercise of such subscription rights.

Under German law, the shareholders' meeting may pass a resolution excluding subscription rights if at least three-quarters of the share capital represented adopts the resolution. To exclude subscription rights, the management board must also make a report available to the shareholders justifying the exclusion and demonstrating that the company's interest in excluding the subscription rights outweighs the shareholders' interest in having them. In addition to approval by the general shareholders' meeting, the exclusion of subscription rights requires a justification. The justification must be based on the principle that our interest in excluding subscription rights outweighs the shareholders' interest in their subscription rights and may be subject to judicial review. Accordingly, under German law, the exclusion of subscription rights upon the issuance of new shares is permitted, in particular, if we increase the share capital against cash contributions, if the amount of the capital increase does not exceed 10% of the existing share capital and the issue price of the new shares is not significantly lower than the market price of our shares.

The authorization of the management board to issue convertible bonds or other securities convertible into shares must be limited to a period not exceeding five years as of the respective shareholder resolution.

Shareholders' Meetings, Resolutions and Voting Rights

Pursuant to our articles of association, shareholders' meetings may be held at our registered offices, at the registered seat of a German stock exchange or in a German city with more than 100,000 inhabitants. In general, shareholders' meetings are convened by our management board. The supervisory board is additionally required to convene a shareholders' meeting in cases where this is required under binding statutory law (i.e., if this is in the best interest of the Company). In addition, shareholders who, individually or as a group, own at least 5% or €500,000 of our share capital may request that modified or additional items be added to the agenda and that these items be published before the shareholders' meeting take place, and that our management board convene a shareholders' meeting. If our management board does not convene a shareholders' meeting upon such a request, the shareholders may petition the competent German court for authorization to convene a shareholders' meeting.

Each share carries one vote at a shareholders' meeting.

Our articles of association provide that the resolutions of the shareholders' meeting are adopted by a simple majority of the votes cast. To the extent required by law, certain resolutions may have to be approved by a simple majority of share capital represented at the meeting, in addition to the majority of votes cast.

Neither the German laws nor our articles of association provide for a minimum participation for a quorum for our shareholders' meetings.

Under German law, certain resolutions of fundamental importance require the vote of at least three-quarters of the share capital present or represented in the voting at the time of adoption of the resolution. Resolutions of fundamental importance include, in particular, capital increases with exclusion of subscription rights, capital decreases, the creation of authorized or conditional share capital, the dissolution of a company, a merger into or with another company, split-offs and split-ups, the conclusion of inter-company agreements (*Unternehmensverträge*), in particular control agreements (*Beherrschungsverträge*) and profit and loss transfer agreements (*Ergebnisabführungsverträge*), and a change of the legal form of a company.

Dividend Rights

Under German law, distributions of dividends on shares for a given fiscal year are generally determined by a process in which the management board and supervisory board submit a proposal to our annual general shareholders' meeting held in the subsequent fiscal year and such annual general shareholders' meeting adopts a resolution. German law provides that a resolution concerning dividends and distribution thereof may be adopted only if the company's unconsolidated financial statements under the applicable law show net retained profits.

Shareholders participate in profit distributions in proportion to the number of shares they hold. Dividends on shares resolved by the general shareholders' meeting are paid annually, shortly after the general shareholders' meeting, in compliance with the rules of the respective clearing system. Dividend payment claims are subject to a three-year statute of limitation in the company's favor.

Liquidation Rights

Apart from liquidation as a result of insolvency proceedings, we may be liquidated only with a vote of the holders of at least three-quarters of the share capital represented at the shareholders' meeting at which such a vote is taken. If we are liquidated, any assets remaining after all of our liabilities have been paid off would be distributed among our shareholders in proportion to their holdings in accordance with German statutory law. The German Stock Corporation Act provides certain protections for creditors which must be observed in the event of liquidation.

Authorization to Acquire Treasury Shares

The shareholders' meeting adopted a resolution on May 22, 2015 authorizing us, for a period until May 22, 2020, to acquire treasury shares in the total amount of up to 10% of the share capital existing at the time the resolution was passed by the shareholders' meeting or – if lower – at the time the authorization is exercised. The shares acquired on the basis of this authorization and the other shares of the Company already acquired and still held by, or to be attributable to it pursuant to the provisions of the German Stock Corporation Act, must at no time exceed 10% of the relevant share capital. This authorization comprises the acquisition of ADRs of the Company listed on the NYSE, provided that, with regard to the limitation of the acquisition volume to 10% of the share capital, the number of ADRs shall be divided by the number of ADRs representing one share. The acquisition shall occur by means of purchase on the stock exchange on which the shares / respectively ADRs of the Company are traded.

We are authorized to utilize the treasury shares / respectively ADRs acquired on the basis of this authorization in accordance with the provisions of the German Stock Corporation Act for all other statutory permissible purposes, besides a sale on the stock exchange, particularly for the following:

- The treasury shares / respectively ADRs may be offered and transferred with the supervisory board's consent for non-cash consideration, particularly in the course of merger transactions or to (including indirectly) acquire companies, enterprises, parts of enterprises, participations and other assets or claims to
-

acquire assets, including receivables from the Company or companies affiliated thereto within the meaning as defined in the German Stock Corporation Act.

- The treasury shares / respectively ADRs may be sold with the supervisory board's consent also in another way than on the stock exchange if they are sold for cash consideration at a price that is not materially lower than the stock exchange price of the shares / respectively ADRs of the Company at the time of their sale. The relevant stock exchange price within the meaning of the provision above shall be the arithmetic mean of the closing price of the ADRs on NYSE during the last ten trading days prior to the day of the sale of treasury shares. The provision above shall apply to the sale of treasury shares with the proviso that, in the calculation of the permissible selling price, the stock exchange price of an ADR shall be multiplied by the number of ADRs representing one share.
- Treasury shares may be redeemed without requiring another resolution of the general meeting for the redemption or its enforcement. Redemption may be enforced by means of a capital decrease or without capital decrease by adjusting the proportionate amount of the remaining shares in the share capital. For this purpose, the management board is authorized to amend the number of shares in the articles of association.

The above authorizations may, in each case, be exercised independently of each other, once or repeatedly, individually or jointly, fully or partially, even by group companies or third parties acting for the account of the Company or its group companies. Any acquired treasury shares may also be transferred to group companies.

Squeeze-Out of Minority Shareholders

Under German law, the shareholders' meeting of a stock corporation may resolve upon request of a shareholder that holds at least 95% of the share capital that the shares held by any remaining minority shareholders be transferred to this shareholder against payment of "adequate cash compensation" (*Ausschluss von Minderheitsaktionären*). This amount must take into account the full value of the company at the time of the resolution, which is generally determined using the future earnings value method (*Ertragswertmethode*).

Preemptive and Other Rights

Under our articles of association, holders of our ordinary shares are not entitled to preemptive rights with respect to any shares which may be issued, and there are no conversion rights or redemption, purchase, retirement or sinking fund provisions with respect to our ordinary shares. Moreover, the management board is authorized to determine, subject to the consent of the supervisory board, the further details regarding the rights attached to the shares and the conditions of the share issue.

Certain Anti-Takeover Effects

Certain provisions of our articles of association, our rules of procedure of the supervisory board could have certain anti-takeover effects and may delay, deter or prevent a tender offer or takeover attempt that a stockholder might consider to be in its best interests, as discussed below:

Extraordinary Meeting of the Supervisory Board. Our rules of procedure of the supervisory board provide that the chairman of the supervisory board may, if required, convene an extraordinary meeting of the supervisory board if he is informed by the chairman of the management board of important events which are essential for the assessment of the situation and development as well as for the management of the Company. Each member of the supervisory board or the management board, indicating the purpose and the reasons for the request, shall be entitled to have the chairman of the supervisory board convene a meeting of the supervisory board without delay. Should this request be denied, the member of the supervisory board or the management board may provide an agenda and convene the supervisory board themselves.

Prior approval by the supervisory board. Our rules of procedure of the management board provide that, among other things, the following require prior approval by the supervisory board: i) the purchase or sale of legal entities, and ii) the purchase, sale, creation, extension, reduction or termination of business activities, including tangible or intangible assets and joint ventures, if the relevant price or value, in each case, exceeds €50,000.

Prior approval by the management board. Our rules of procedure of the management board provide that, among other things, the following require prior approval by the management board: fundamental organizational measures, such as the conclusion of or amendment to company transfer agreements (Section 291 et seqq. German Stock Corporation Act), transformation measures within the meaning of the German Transformation of Companies Act (*Umwandlungsgesetz*), sale or acquisition of material company assets as well as issues of strategy and business planning as set out in Section 90 para. 1 no. 1 German Stock Corporation Act.

No Cumulative Voting or Classified Board. Our articles of association do not provide for cumulative voting on the election of directors and we currently do not have a classified board.

American Depositary Shares

Depositary

We have appointed Citibank, N.A. (“Citibank”) as the depositary for the ADSs pursuant to a deposit agreement (the “Deposit Agreement”). Citibank’s depositary offices are located at 388 Greenwich Street, New York, New York 10013.

Provisions

Each ADS represents the right to receive, and to exercise the beneficial ownership interest in, one-fifth of an ordinary share on deposit with the custodian. An ADS also represents the right to receive any other property received by the depositary or the custodian on behalf of the owner of the ADS but that has not been distributed to the owners of ADSs because of legal restrictions or practical considerations.

The custodian, the depositary and their respective nominees will hold all deposited property for the benefit of the holders and beneficial owners of ADSs. The deposited property does not constitute the proprietary assets of the depositary, the custodian or their nominees. Beneficial ownership in the deposited property will under the terms of the Deposit Agreement be vested in the beneficial owners of the ADSs. The depositary, the custodian and their respective nominees will be the record holders of the deposited property represented by the ADSs for the benefit of the holders and beneficial owners of the corresponding ADSs. A beneficial owner of ADSs may or may not be the holder of ADSs. Beneficial owners of ADSs will be able to exercise beneficial ownership interests in the deposited property only through the registered holders of the ADSs, by the registered holders of the ADSs (on behalf of the applicable ADS owners) only through the depositary, and by the depositary (on behalf of the owners of the corresponding ADSs) directly, or indirectly through the custodian or their respective nominees, in each case upon the terms of the Deposit Agreement.

An owner of ADSs is not treated as one of our shareholders and will not have direct shareholder rights. The depositary will hold the shareholder rights attached to the ordinary shares on the owner’s behalf. An owner of ADSs will be able to exercise the shareholders rights for the ordinary shares represented by the owner’s ADSs through the depositary only to the extent contemplated in the Deposit Agreement. To exercise any shareholder rights not contemplated in the Deposit Agreement, the owner will need to arrange for the cancellation of ADSs and become a direct shareholder.

Dividends and Distributions

A holder of ADSs generally has the right to receive the distributions we make on the securities deposited with the custodian. Receipt of these distributions may be limited, however, by practical considerations and legal limitations. Holders of ADSs will receive such distributions under the terms of the Deposit Agreement in proportion to the number of ADSs held as of a specified record date, after deduction of the applicable fees, taxes and expenses.

Distributions of Cash

Whenever we make a cash distribution for the securities on deposit with the custodian, we will deposit the funds with the custodian. Upon receipt of confirmation of the deposit of the requisite funds, the depositary will arrange for

the funds to be converted into U.S. dollars and for the distribution of the U.S. dollars to the holders, subject to the laws and regulations of Germany.

The conversion into U.S. dollars will take place only if practicable and if the U.S. dollars are transferable to the United States. The depository will apply the same method for distributing the proceeds of the sale of any property (such as undistributed rights) held by the custodian in respect of securities on deposit.

The distribution of cash will be made net of the fees, expenses, taxes and governmental charges payable by holders under the terms of the Deposit Agreement. The depository will hold any cash amounts it is unable to distribute in a non-interest bearing account for the benefit of the applicable holders and beneficial owners of ADSs until the distribution can be effected or the funds that the depository holds must be escheated as unclaimed property in accordance with the laws of the relevant states of the United States.

Distributions of Ordinary Shares

Whenever we make a free distribution of ordinary shares for the securities on deposit with the custodian, we will deposit the applicable number of ordinary shares with the custodian. Upon receipt of confirmation of such deposit, the depository will *either* distribute to holders new ADSs representing the ordinary shares deposited *or* modify the ADS-to-ordinary shares ratio, in which case each ADS held will represent rights and interests in the additional ordinary shares so deposited. Only whole new ADSs will be distributed. Fractional entitlements will be sold and the proceeds of such sale will be distributed as in the case of a cash distribution.

The distribution of new ADSs or the modification of the ADS-to-ordinary shares ratio upon a distribution of ordinary shares will be made net of the fees, expenses, taxes and governmental charges payable by holders under the terms of the Deposit Agreement. In order to pay such taxes or governmental charges, the depository may sell all or a portion of the new ordinary shares so distributed.

No such distribution of new ADSs will be made if it would violate a law (*i.e.*, the U.S. securities laws) or if it is not operationally practicable. If the depository does not distribute new ADSs as described above, it may sell the ordinary shares received upon the terms described in the Deposit Agreement and will distribute the proceeds of the sale as in the case of a distribution of cash.

Distributions of Rights

Whenever we intend to distribute rights to purchase additional ordinary shares, we will give prior notice to the depository and we will assist the depository in determining whether it is lawful and reasonably practicable to distribute rights to purchase additional ADSs to holders.

The depository will establish procedures to distribute rights to purchase additional ADSs to holders and to enable such holders to exercise such rights if it is lawful and reasonably practicable to make the rights available to holders of ADSs, and if we provide all of the documentation contemplated in the Deposit Agreement (such as opinions to address the lawfulness of the transaction). Holders may have to pay fees, expenses, taxes and other governmental charges to subscribe for the new ADSs upon the exercise of their rights. The depository is not obligated to establish procedures to facilitate the distribution and exercise by holders of rights to purchase new ordinary shares other than in the form of ADSs.

The depository will *not* distribute the rights to the holders if:

- we do not timely request that the rights be distributed to the holders or we request that the rights not be distributed to the holders;
- we fail to deliver satisfactory documents to the depositary;
- the depositary determines that it is not reasonably practicable to distribute the rights; or
- any rights to be distributed are not exercised and appear to be about to lapse.

The depositary will sell the rights that are not exercised or not distributed if such sale is lawful and reasonably practicable. The proceeds of such sale will be distributed to holders as in the case of a cash distribution. If the depositary is unable to sell the rights, it will allow the rights to lapse.

Elective Distributions

Whenever we intend to distribute a dividend payable at the election of shareholders either in cash or in additional ADSs, we will give prior notice thereof to the depositary and will indicate whether we wish the elective distribution to be made available to the holders. In such case, we will assist the depositary in determining whether such distribution is lawful and reasonably practicable.

The depositary will make the election available to the holders only if it is reasonably practicable and if we have provided all of the documentation contemplated in the Deposit Agreement. In such case, the depositary will establish procedures to enable the holders to elect to receive either cash or additional ADSs, in each case as described in the Deposit Agreement.

If the election is not made available to the holders, the holders will receive either cash or additional ADSs, depending on what a shareholder in Germany would receive upon failing to make an election, as more fully described in the Deposit Agreement.

Other Distributions

Whenever we intend to distribute property other than cash, ordinary shares or rights to purchase ordinary shares, we will notify the depositary in advance and will indicate whether we wish such distribution to be made to the holders. If so, we will assist the depositary in determining whether such distribution to holders is lawful and reasonably practicable.

If it is reasonably practicable to distribute such property to the holders and if we provide all of the documentation contemplated in the Deposit Agreement, the depositary will distribute the property to the holders in a manner it deems practicable.

The distribution will be made net of fees, expenses, taxes and governmental charges payable by holders under the terms of the Deposit Agreement. In order to pay such taxes and governmental charges, the depositary may sell all or a portion of the property received.

The depositary will *not* distribute the property to holders and will sell the property if:

- we do not timely request that the rights be distributed to the holders or we request that the rights not be distributed to the holders;
- we fail to deliver satisfactory documents to the depositary; or
- the depositary determines that all or a portion of the distribution is not reasonably practicable.

The proceeds of such a sale will be distributed to holders as in the case of a cash distribution.

Changes Affecting Ordinary Shares

The ordinary shares held on deposit for ADSs may change from time to time. For example, there may be a change in nominal or par value, a split-up, cancellation, consolidation or any other reclassification of such ordinary shares or a recapitalization, reorganization, merger, consolidation or sale of assets of the Company.

If any such change were to occur, the ADSs would, to the extent permitted by law, represent the right to receive the property received or exchanged in respect of the ordinary shares held on deposit. The depositary may in such circumstances deliver new ADSs to the holders, amend the Deposit Agreement, the ADRs and the applicable registration statement(s), call for the exchange of the holders' existing ADSs for new ADSs and take any other actions that are appropriate to reflect as to the ADSs the change affecting the ordinary shares. If the depositary may not lawfully distribute such property to the holders, the depositary may sell such property and distribute the net proceeds as in the case of a cash distribution.

Withdrawal of Ordinary Shares Upon Cancellation of ADSs

Holders will be entitled to present their ADSs to the depositary for cancellation and then receive the corresponding number of underlying ordinary shares at the custodian's offices. Holders' ability to withdraw the ordinary shares may be limited by U.S. and German considerations applicable at the time of withdrawal. In order to withdraw the ordinary shares represented by the ADSs, holders will be required to pay to the depositary the fees for cancellation of ADSs and any charges and taxes payable upon the transfer of the ordinary shares being withdrawn. Holders assume the risk for delivery of all funds and securities upon withdrawal. Once canceled, the ADSs will not have any rights under the Deposit Agreement.

Holders will have the right to withdraw the securities represented by their ADSs at any time except for:

- temporary delays caused by closing the transfer books of the depositary or the Company or the deposit of ordinary shares in connection with voting at a shareholders' meeting or the payment of dividends;
- the payment of fees, taxes and similar charges;
- compliance with any U.S. or foreign laws or governmental regulations relating to the ADSs or the withdrawal of securities on deposit; or
- other circumstances specifically contemplated by Instruction I.A.(I) of the General Instructions to Form F-6 (as such General Instructions may be amended from time to time).

The Deposit Agreement may not be modified to impair a holder's right to withdraw the securities represented by the holder's ADSs except to comply with mandatory provisions of law.

Voting Rights

Holders generally have the right under the Deposit Agreement to instruct the depositary to exercise the voting rights for the ordinary shares represented by the ADSs. At our request, the depositary will distribute to the holders any notice of a shareholders' meeting together with information explaining how to instruct the depositary to exercise the voting rights of the securities represented by ADSs.

If the depositary timely receives voting instructions from a holder of ADSs, it will endeavor to vote the securities (in person or by proxy) represented by the holder's ADSs in accordance with such voting instructions.

Amendments and Termination

We may agree with the depositary to modify the Deposit Agreement at any time without holders' consent. We undertake to give holders 30 days' prior notice of any modifications that would materially prejudice any of their substantial rights under the Deposit Agreement. Holders will be bound by the modifications to the Deposit Agreement if they continue to hold our ADSs after the modifications to the Deposit Agreement become effective. The Deposit Agreement cannot be amended to prevent the holders from withdrawing the ordinary shares represented by the ADSs (except as permitted by law).

We have the right to direct the depository to terminate the Deposit Agreement. Similarly, the depository may in certain circumstances on its own initiative terminate the Deposit Agreement. In either case, the depository must give notice to the holders at least 30 days before termination. Until termination, holders' rights under the Deposit Agreement will be unaffected.

After termination, the depository will continue to collect distributions received (but will not distribute any such property until holders request the cancellation of their ADSs) and may sell the securities held on deposit. After the sale, the depository will hold the proceeds from such sale and any other funds then held for the holders of ADSs in a non-interest bearing account. At that point, the depository will have no further obligations to holders other than to account for the funds then held for the holders of ADSs still outstanding (after deduction of applicable fees, taxes and expenses).

Books of Depository

The depository will maintain ADS holder records at its depository office. Holders may inspect such records at the office during regular business hours, but solely for the purpose of communicating with other holders in the interest of business matters relating to the ADSs and the Deposit Agreement.

The depository will maintain in New York facilities to record and process the issuance, cancellation, combination, split-up and transfer of ADSs. These facilities may be closed from time to time, to the extent not prohibited by law.

Limitations on Obligations and Liabilities

The Deposit Agreement limits our obligations and the depository's obligations to the holders:

- we and the depository are obligated only to take the actions specifically stated in the Deposit Agreement without negligence or bad faith;
 - the depository disclaims any liability for any failure to carry out voting instructions, for any manner in which a vote is cast or for the effect of any vote, provided it acts in good faith and in accordance with the terms of the Deposit Agreement;
 - the depository disclaims any liability for any failure to determine the lawfulness or practicality of any action, for the content of any document forwarded to the holders on our behalf or for the accuracy of any translation of such a document, for the investment risks associated with investing in ordinary shares, for the validity or worth of the ordinary shares, for any tax consequences that result from the ownership of ADSs, for the credit-worthiness of any third party, for allowing any rights to lapse under the terms of the Deposit Agreement, for the timeliness of any of our notices or for our failure to give notice;
 - we and the depository will not be obligated to perform any act that is inconsistent with the terms of the Deposit Agreement;
 - we and the depository disclaim any liability if we or the depository are prevented or forbidden from or subject to any civil or criminal penalty or restraint on account of, or delayed in, doing or performing any act or thing required by the terms of the Deposit Agreement, by reason of any provision, any present or future law or regulation, or by reason of any present or future provision of our articles of association, or any provision of or governing the securities on deposit, or by reason of any act of God or war or other circumstances beyond our control;
 - we and the depository disclaim any liability by reason of any exercise of, or failure to exercise, any discretion provided for in the Deposit Agreement or in our articles of association or in any provisions of or governing the securities on deposit;
 - we and the depository further disclaim any liability for any action or inaction in reliance on the advice or information received from legal counsel, accountants, any person presenting ordinary shares for deposit, any holder of ADSs or authorized representatives thereof, or any other person believed by either of us in good faith to be competent to give such advice or information;
 - we and the depository also disclaim liability for the inability by a holder to benefit from any distribution, offering, right or other benefit that is made available to holders of ordinary shares but is not, under the terms of the Deposit Agreement, made available to the holders;
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- we and the depositary may rely without any liability upon any written notice, request or other document believed to be genuine and to have been signed or presented by the proper parties;
- we and the depositary also disclaim liability for any consequential or punitive damages for any breach of the terms of the Deposit Agreement; and no disclaimer of any liability under the Securities Act of 1933, as amended, is intended by any provision of the Deposit Agreement.

Notices and Reports

On or before the first date on which we give notice of any meeting of holders of ordinary shares or other securities on deposit, or of any adjourned meeting of such holders, or of the taking of any action by such holders other than at a meeting, or of the taking of any action in respect of any cash or other distributions or the offering of any rights in respect of the securities on deposit, we shall transmit to the depositary and the custodian a copy of the notice thereof in English but otherwise in the form given or to be given to the holders of ordinary shares or other securities on deposit. We shall also furnish to the custodian and the depositary a summary, in English, of any applicable provisions or proposed provisions of our articles of association that may be relevant or pertain to such notice of meeting or be the subject of a vote thereat.

We will also transmit to the depositary (a) an English version of the other notices, reports and communications which are made generally available by us to holders of ordinary shares or other securities on deposit, and (b) the English versions of our annual reports, provided that the requirement in clause (b) shall be deemed completed if we file such annual report with the Commission on the Electronic Data-Gathering, Analysis, and Retrieval (EDGAR) system. The depositary shall arrange, at our request and expense, to provide copies thereof to all ADS holders or make such notices, reports and other communications available to all ADS holders. We have delivered to the depositary and the custodian a copy of our articles of association, and, promptly upon any amendment thereto or change therein, we shall deliver to the depositary and the custodian a copy of such amendment thereto or change therein. The depositary may rely upon such copy for all purposes of the Deposit Agreement.

Fees and Charges

ADS holders will be required to pay the following fees under the terms of the Deposit Agreement:

Service	Fees
(1) Issuance of ADSs upon deposit of shares (excluding issuances as a result of distributions of shares described in (4) below)	Up to U.S. 5¢ per ADS issued
(2) Cancellation of ADSs	Up to U.S. 5¢ per ADS canceled
(3) Distribution of cash dividends or other cash distributions (<i>i.e.</i> , sale of rights or other entitlements)	Up to U.S. 5¢ per ADS held
(4) Distribution of ADSs pursuant to (i) stock dividends or other free stock distributions or (ii) exercise of rights to purchase additional ADSs	Up to U.S. 5¢ per ADS held
(5) Distribution of securities other than ADSs or rights to purchase additional ADSs (<i>i.e.</i> , spin-off shares)	Up to U.S. 5¢ per ADS held

(6) ADS Services

Up to U.S. 5¢ per ADS held on the applicable record date(s) established by the depositary

ADS holders will also be responsible to pay certain charges such as:

- taxes (including applicable interest and penalties) and other governmental charges;
- the registration fees as may from time to time be in effect for the registration of ordinary shares on the share register and applicable to transfers of ordinary shares to or from the name of the custodian, the depositary or any nominees upon the making of deposits and withdrawals, respectively;
- certain cable, telex and facsimile transmission and delivery expenses;
- the expenses and charges incurred by the depositary in the conversion of foreign currency;
- the fees and expenses incurred by the depositary in connection with compliance with exchange control regulations and other regulatory requirements applicable to ordinary shares, ADSs and ADRs; and
- the fees and expenses incurred by the depositary, the custodian, or any nominee in connection with the servicing or delivery of deposited property.

In the event of refusal to pay the depositary fees, the depositary may, under the terms of the Deposit Agreement, refuse the requested service until payment is received or may set off the amount of the depositary fees from any distribution to be made to the ADS holder.

Note that the fees and charges the holders may be required to pay may vary over time and may be changed by us and by the depositary.

Subsidiaries of voxeljet AG

Business-Entity	First consolidation date	Shares
voxeljet America Inc.	February 5, 2014	100.00%
voxeljet UK Ltd.	October 1, 2014	100.00%
voxeljet India Pvt. Ltd.	January 21, 2016	100.00%
voxeljet China Pvt. Ltd.	April 11, 2016	70.00%

**CERTIFICATION OF CHIEF EXECUTIVE OFFICER
PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002**

I, Dr. Ingo Ederer, certify that:

1. I have reviewed this Annual Report on Form 20-F of voxeljet AG;
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 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 cause 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 period covered by the annual report that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting.
5. The registrant's other certifying officer 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 other 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.

/s/ DR. INGO EDERER

Dr. Ingo Ederer
Chief Executive Officer
(Principal Executive Officer)

Dated: May 7, 2020

**CERTIFICATION OF CHIEF FINANCIAL OFFICER
PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002**

I, Rudolf Franz, certify that:

1. I have reviewed this Annual Report on Form 20-F of voxeljet AG;
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 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 cause 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 period covered by the annual report that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting.
5. The registrant's other certifying officer 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 other 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.

/s/ RUDOLF FRANZ
Rudolf Franz
Chief Financial Officer
(Principal Financial Officer)

Dated: May 7, 2020

**CERTIFICATION OF CHIEF EXECUTIVE OFFICER
PURSUANT TO 18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the Annual Report on Form 20-F of voxeljet AG (the "Company") for the year ended December 31, 2019 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), the undersigned, Dr. Ingo Ederer, Chief Executive Officer of the Company, hereby certifies, pursuant to 18 U.S.C. Section 1350, that:

- (1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ DR. INGO EDERER

Dr. Ingo Ederer
Chief Executive Officer
(Principal Executive Officer)

Dated: May 7, 2020

**CERTIFICATION OF CHIEF FINANCIAL OFFICER
PURSUANT TO 18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the Annual Report on Form 20-F of voxeljet AG (the "Company") for the year ended December 31, 2019 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), the undersigned, Rudolf Franz, Chief Financial Officer of the Company, hereby certifies, pursuant to 18 U.S.C. Section 1350, that:

- (1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ RUDOLF FRANZ

Rudolf Franz

Chief Financial Officer

(Principal Financial Officer)

Dated: May 7, 2020

Consent of Independent Registered Public Accounting Firm

The Supervisory Board
voxeljet AG:

We consent to the incorporation by reference in the registration statement (No. 333-217450) on Form S-8 and registration statement (No. 333-219965) on Form F-3 of voxeljet AG (the Company) of our report dated May 7, 2020, with respect to the consolidated statements of financial position of voxeljet AG as of December 31, 2019 and 2018, the related consolidated statements of comprehensive loss, changes in equity, and cash flows for each of the years in the three-year period ended December 31, 2019, and the related notes, which report appears in the December 31, 2019 annual report on Form 20-F of voxeljet AG.

Our audit report dated May 7, 2020 contains an explanatory paragraph that states that the Company has suffered recurring losses from operations, negative cash flows from operations, and has breached debt covenants which raises substantial doubt about its ability to continue as a going concern. The consolidated financial statements do not include any adjustments that might result from the outcome of the uncertainty.

Our audit report also refers to a change to the method of accounting for leases as of January 1, 2019 due to the adoption of IFRS 16 Leases.

/s/ KPMG AG Wirtschaftsprüfungsgesellschaft

Munich, Germany
May 7, 2020

May 7, 2020

Securities and Exchange Commission
Washington, D.C. 20549

Ladies and Gentlemen:

We are currently the principal accountants for voxeljet AG (the “Company”) and under the date of May 7, 2020, we reported on the consolidated financial statements of voxeljet AG and its subsidiaries as of and for the years ended December 31, 2019 and 2018. On January 15, 2020, we were notified that the Company’s Supervisory Board recommended the appointment of PricewaterhouseCoopers GmbH Wirtschaftsprüfungsgesellschaft (“PwC”) to serve as its principal accountant for the year ending December 31, 2020 and that KPMG AG Wirtschaftsprüfungsgesellschaft (“KPMG”) will be dismissed upon completion of the audit of the Company’s consolidated financial statements as of and for the year ended December 31, 2019 and the issuance of our report thereon. We have read the Company statements included under Item 16F on Form 20-F to be filed May 7, 2020, and we agree with such statements, except that we are not in a position to agree or disagree with the Company’s statement that subject to approval at its 2020 Annual General Meeting the Company anticipates that the Audit Committee will appoint PwC. We are also not in a position to agree or disagree with the Company’s statement that PwC was not engaged regarding the application of accounting principles to a specified transaction or the type of audit opinion that might be rendered by PwC on the Company’s consolidated financial statement, or the effectiveness of internal control over financial reporting. Nor are we in a position to agree or disagree with the Company’s statement that PwC did not provide any written or oral advice that was an important factor considered by the Company in reaching a decision as to any such accounting, auditing or financial reporting matter or any matter being the subject of disagreement or defined as a reportable event or any other matter as defined in Item 16F(a)(1)(v) of Form 20-F.

Very truly yours,

/s/ KPMG AG Wirtschaftsprüfungsgesellschaft

Munich, Germany
