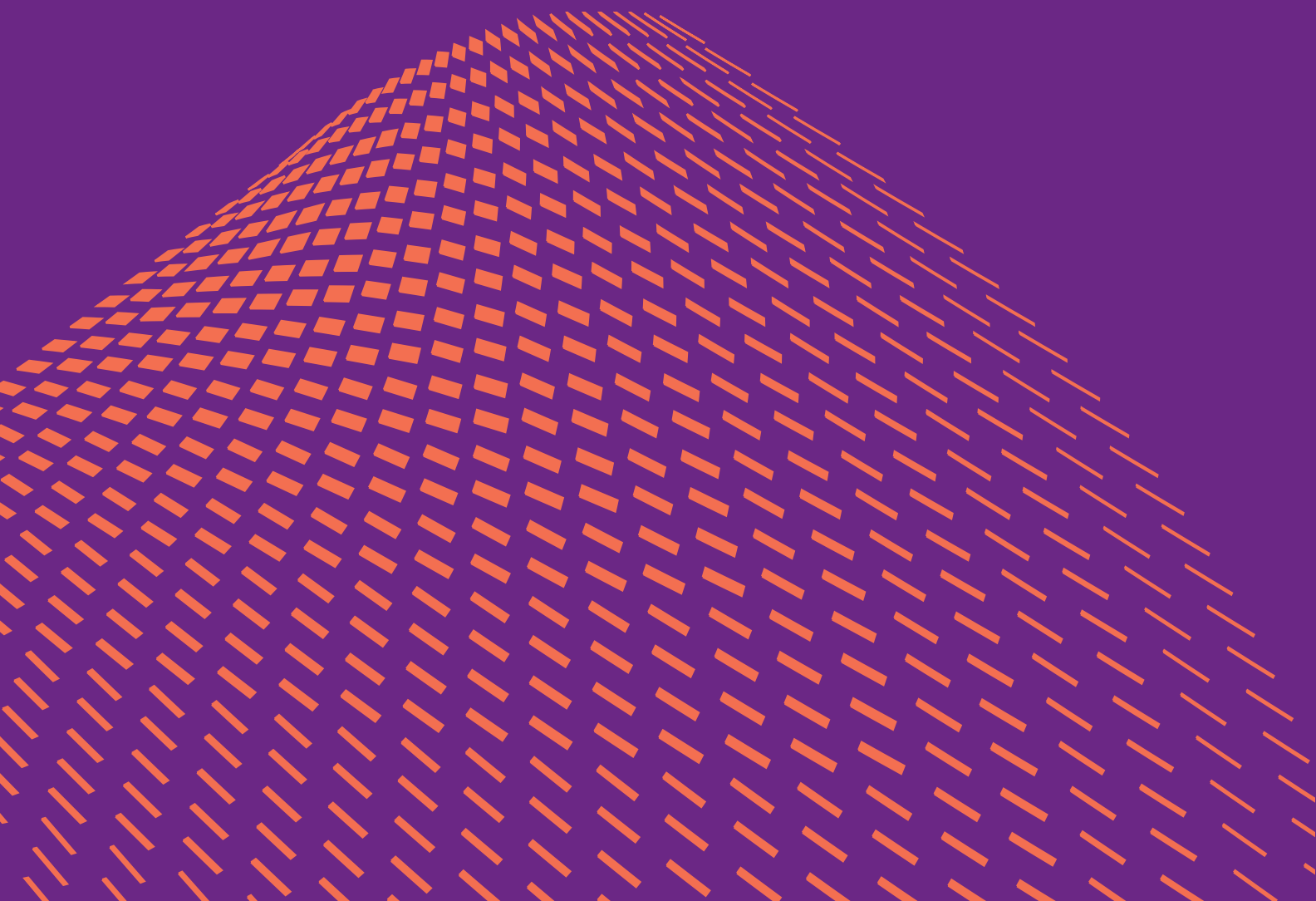
2018 UK Annual Report

LivaNova

Health innovation that matters



Annual Report 2018

LivaNova

Health innovation that matters

We are transforming our company to change lives, advancing new and established technologies to improve the standard of care.

We are sharpening our focus on the head and the heart, positioning our company to grow as market leaders in neuromodulation and cardiac surgery.

We are improving performance and delivering on our near-term commitments, while investigating in our pipeline to drive future growth.

We are LivaNova.

This UK Annual Report of LivaNova PLC comprises the Strategic Report, Directors' Report, and Drectors' Remuneration Report and the LivaNova PLC consolidated and company UK GAAP Financial Statements in respect of the year ended 31 December 2018 contained herein.

This UK Annual Report has been prepared to satisfy the reporting requirements of the Companies Act 2006 and will be included in the 2019 Annual General Meeting materials made available to shareholders.

Cautionary statement

Certain statements made in this UK Annual Report are forward looking. Such statements are based on current expectations and are subject to a number of risks and uncertainties that could cause actual results to differ materially from any expected future events or results referred to in the forward looking statements. Unless otherwise required by applicable laws, regulations or accounting standards, LivaNova do not undertake any obligation to update or revise any forward looking statements, whether as a result of new information, future developments or otherwise. Nothing in this UK Annual Report should be regarded as a profit forecast.

- Trademarks for LivaNova's VNS therapy systems, the VNS Therapy® System, the VITARIA®TM System and LivaNova's proprietary Pulse generators products: Model 102 (PulseTM), Model 102R (Pulse DuoTM), Model 103 (Demipulse®), Model 104 (Demipulse Duo®), Model 105 (AspireHC®), Model 106 (AspireSR®) and Model 1000 (SenTiva™).
- Trademarks for LivaNova's Oxygenators product systems: InspireTM, HeartlinkTM and ConnectTM.
- Trademarks for LivaNova's line of surgical tissue and mechanical valve replacements and repair products: MitroflowTM, Crown PRTTM, Solo SmartTM, PercevalTM, Top HatTM, Reduced Series Aortic ValvesTM, Carbomedics Carbo-SealTM, Carbo-Seal ValsalvaTM, Carbomedics StandardTM, OrbisTM and OptiformTM, and Mitral valve repair products: Memo 3DTM, Memo 3D ReChordTM, AnnuloFloTM and AnnuloFlexTM.
- Trademarks for LivaNova's implantable cardiac pacemakers and associated services: REPLY 200TM, ESPRITTM, KORA 100TM, KORA 250TM, SafeRTM, the REPLY CRT-PTM, the remedé® System.
- Trademarks for LivaNova's Implantable Cardioverter Defibrillators and associated technologies: the INTENSIATM, PLATINIUMTM, and PARADYM® product families.
- Trademarks for LivaNova's cardiac resynchronisation therapy devices, technologies services: SonR®, SonRtipTM, SonR CRTTM, the INTENSIATM, PARADYM RFTM, PARADYM 2TM and PLATINIUMTM product families and the Respond CRTTM clinical trial.
- Trademarks for heart failure treatment product: Equilia®TM.
- Trademarks for LivaNova's bradycardia leads: BEFLEXTM (active fixation) and XFINETM (passive fixation).

These trademarks and trade names are the property of LivaNova or the property of LivaNova's consolidated subsidiaries and are protected under applicable intellectual property laws. Solely for convenience, LivaNova's trademarks and trade names referred to in this Annual Report may appear without the ® or TM symbols, but such references are not intended to indicate in any way that LivaNova will not assert, to the fullest extent under applicable law, LivaNova's rights to these trademarks and trade names.

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STRATEGIC REPORT

Introduction

At LivaNova, we strive to help where it really counts, where it truly matters the most.

Where every single effort, of each one of us, is transformational and expected to leave a lasting mark.

That is why at LivaNova we make each innovation count: global, accessible, relevant and breakthrough.

Transforming medical innovation into meaningful solutions, into a sustainable healthcare system and ultimately into healthier and – importantly - better lives.

Sharp, responsive and effective – at LivaNova, we serve health and improve lives.

Day by day.

Life by life.

Business Overview

LivaNova at a glance

Improving Quality of Life Through Innovation. Every Patient. Every day

2018 HIGHLIGHTS

NET GLOBAL REVENUE*

$1.1 bln

NEUROMODULATION

$48 mln increased revenue

12.8%

CARDIOVASCULAR

$46.3 mln increased revenue

7.3%

COUNTRIES WHERE WE SERVE PATIENTS

100+

EMPLOYEES

3,904**

MANUFACTURING AND R&D FACILITIES

9+

* *net sales*
** *at 31 December 2018*

WHO WE ARE

Headquartered in London, we are a global medical device company focused on the development and delivery of important therapeutic solutions for the benefit of patients, healthcare professionals and healthcare systems throughout the world.

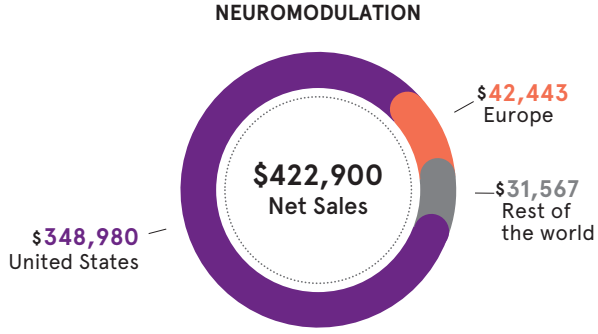
OUR MISSION

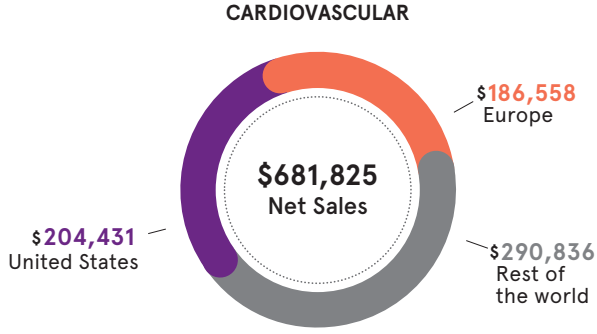
We are committed to developing treatments and innovations that improve patients' quality of life everyday. This commitment to patients and those who care for them drives everything we do. We design, develop, manufacture and sell innovative therapeutic solutions in the field of Neuromodulation and Cardiovascular that are consistent with our mission to improve our patients' quality of life, increase the skills and capabilities of healthcare professionals and minimize healthcare costs globally.

OUR STRATEGY

1. Sales and markets
2. Innovation through research and development
3. Advance our strategic portfolio

GEOGRAPHIC NET REVENUE BY BUSINESS FRANCHISE (in thousands)





LivaNova has had another very strong year, having achieved our main targets for 2018, with both Neuromodulation and Cardiovascular showing strong growth. 2018 was a transformative year for LivaNova, marked by a successful growth strategy as well as by the achievement of strong sales growth, increased R&D investment to support our product pipeline and finally, continued integration of our recent acquisitions.

Neuromodulation saw net sales increase by **$48 million** or 12.8%, whilst Cardiovascular registered an increase in net sales of **$46.3 million** or 7.3% for the year ended 31 December 2018 when compared to 2017.

Other 2018 Highlights

- We exceeded our annual goal for gross margin improvement
- R&D represents 13.9% as a percentage of net sales which is one of the highest within the medical device industry, enabling us to advance our innovation pipeline
- Our focus on upgrading customers' Heart-Lung-Machines (HLM) from the older S3® HLM to our market-leading S5® HLM led to a record number of shipments in 2018 and double-digit year-over-year growth.

A Global Business

LivaNova has a direct presence in over 33 countries and conducts business operations in over 100 countries globally.

Our Strategy

1

Sales and Markets

- continued development of our three largest markets for our medical devices (the U.S., Europe, and Japan)
- increased focus on emerging markets
- continued emphasis on building patient awareness

2

Innovation through Research and Development

- R&D efforts directed toward maintaining technological leadership to help ensure that patients using our devices and therapies receive the most advanced and effective treatment possible
- committed to developing technological enhancements for existing products, creating less invasive and new technologies for new and emerging markets to address unmet patient needs
- continued focus on optimizing innovation and assessing the ability of our R&D programs to deliver economic value to the customer.

3

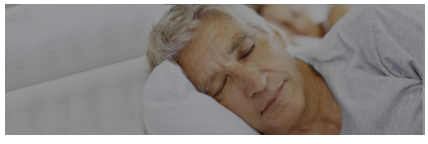
Advance our Strategic Portfolio

- continued reliance on acquisitions, investments and alliances to provide access to new technologies in both new and existing markets
- we expect to further our strategic objectives and strengthen our existing businesses by making future acquisitions or investments in areas where we believe we can stimulate the development of new technologies and products

Acquisitions and Investments

We continuously assess opportunities for investment in order to enhance and add value to our portfolio and product pipeline. We work relentlessly at building our business and investing in innovative and cutting-edge technology.

Caisson Interventional, LLC	ImThera Medical, Inc.	TandemLife
In May 2017, we acquired the remaining 51% equity interest in Caisson, a clinical-stage medical device company focused on the design, development and clinical evaluation of a novel Transcatheter Mitral Valve Replacement (TMVR) implant device. The device is designed for treating Mitral Regurgitation (MR) through replacement of the native mitral valve using a fully transvenous delivery system.	In January 2018, we acquired the remaining 86% outstanding interest in ImThera. ImThera is focused on neurostimulation for the treatment of obstructive sleep apnea. ImThera manufactures an implantable device that stimulates multiple tongue muscles via the hypoglossal nerve, which opens the airway while a patient is sleeping.	In April 2018, we acquired CardiacAssist, Inc., doing business as TandemLife. TandemLife is focused on the delivery of leading-edge temporary life support systems, including cardiopulmonary and respiratory support solutions.



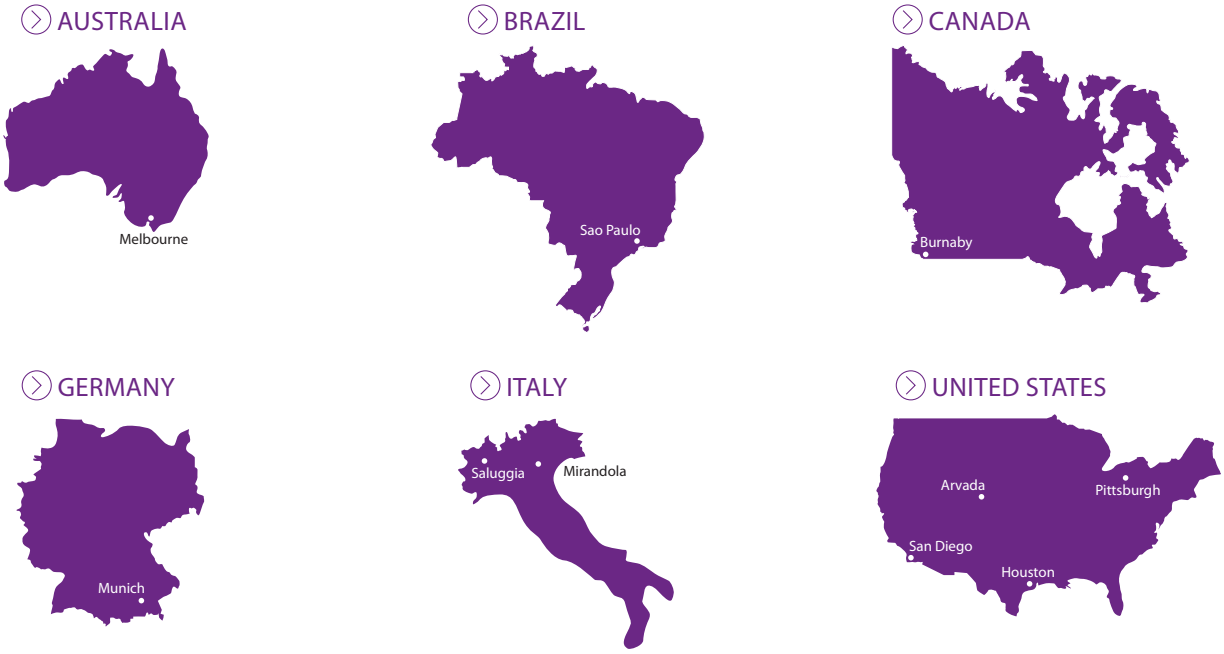
Research and Development

Research and development is at the core of our growth strategy. We remain committed to developing technological enhancements and new uses for existing products and less invasive technologies for new and emerging markets to address unmet patient needs. This commitment leads us to conduct many clinical trials each year as the demand for clinical and economic evidence remains high. We also expect our development activities to help reduce patient care costs and the length of hospital stays in the future. Our R&D efforts are directed towards maintaining or achieving technological leadership in each of the markets we serve to help ensure that patients using our devices and therapies receive the most advanced and effective treatment possible.

Approximately 16% of our employees work in R&D improving existing products and therapies, expanding their uses and applications and developing new products. We continue to focus on optimizing innovation and assessing the ability of our R&D programs to deliver economic value to the customer. More specifically, our current R&D expense reflects product design and development efforts, clinical study programs and regulatory activities, all of which are essential to our strategic portfolio initiatives, including those involving TMVR, Treatment Resistant Depression ("TRD") and heart failure.

In 2018, our R&D investment grew significantly, reaching 13.9% of net sales which is one of the highest levels within the medical device industry. This commitment to research and development is designed to strengthen our pipeline and thus enable us to deliver the next generation of medical solutions within our Neuromodulation and Cardiovascular business franchises.

Our manufacturing and research facilities are located in Brazil, Canada, Germany, Italy, Australia and the U.S. and have a surface area of approximately 1.2 million square feet. Approximately 24% of the manufacturing facilities are located within the U.S. and approximately 90% are owned by us with the balance being leased.



Our Business Model

Neuromodulation

We operate in the $4.1 billion neuromodulation market where our Vagus Nerve Stimulation devices help patients suffering from drug-resistant epilepsy and treatment-resistant depression.

- VNS for treatment of epilepsy
- VNS treatment for drug-resistant depression
- Obstructive Sleep Apnea

Cardiovascular

We have a global presence, providing cardiovascular solutions with an established leadership position in heart-lung machines and cardiopulmonary bypass.

- Heart-Lung Machines
- Heart valves
- Oxygenators and perfusion tubing systems

Our Business Franchises

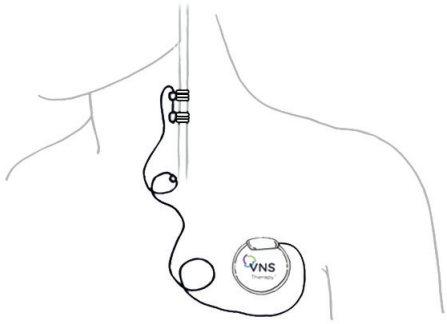
Neuromodulation

Our Neuromodulation business franchise designs, develops and markets medical devices for the treatment of epilepsy, depression and obstructive sleep apnea. We are also focused on the development and clinical testing of the VITARIA System for treating heart failure through vagus nerve stimulation.

Neuromodulation Products

Our seminal Neuromodulation product, the VNS Therapy System, is an implantable device authorized for the treatment of drug-resistant epilepsy and treatment-resistant depression ("TRD"). The VNS Therapy System consists of: an implantable pulse generator and connective lead that work to stimulate the vagus nerve, surgical equipment to assist with the implant procedure; equipment and instruction manuals enabling a treating physician to set parameters for a patient's pulse generator; and for epilepsy, magnets to manually suspend or induce nerve stimulation. The VNS therapy pulse generator and lead are surgically implanted in a subcutaneous pocket in the upper left chest area, generally during an out-patient procedure; the lead, which does not need to be removed to replace a generator with a depleted battery, is connected to the pulse generator and tunneled under the skin to the vagus nerve in the lower left side of the patient's neck.

VNS therapy for the treatment of epilepsy



Globally, there are several broad types of treatment available to patients with epilepsy: multiple seizure medications, various forms of the ketogenic diet, vagus nerve stimulation, resective brain surgery, trigeminal nerve stimulation; responsive intracranial neurostimulation; and deep brain stimulation. Seizure medications typically serve as a first-line treatment and are prescribed for virtually all patients diagnosed with epilepsy. After two seizure medications fail to deliver seizure control, the epilepsy is defined as drug-resistant, at which point, adjunctive non-drug options are considered, including VNS therapy, brain surgery and a ketogenic diet.

Our VNS Therapy System was the first medical device treatment approved by the U.S. Food and Drug Administration ("FDA") in 1997 for refractory, drug-resistant epilepsy in adults and adolescents over 12 years of age and is indicated for use as an adjunctive therapy in reducing the frequency of seizures. In June 2017, the FDA approved our VNS Therapy device for use in patients who are at least four years of age and have partial onset seizures that are refractory to antiepileptic medications. In addition, in June 2017, we received FDA approval, and in August 2017, we received CE Mark approval, for our VNS therapy device for expanded magnetic resonance imaging ("MRI") labelling affirming VNS Therapy as the only epilepsy device approved by the FDA for MRI scans. Currently, SenTiva, AspireHC and AspireSR models of VNS therapy technology provide for this expanded MRI access. Other worldwide regulatory bodies have also approved the VNS Therapy System for the treatment of epilepsy, many without age restrictions or seizure-type limitations.

We sell a number of VNS Therapy System product models for the treatment of epilepsy, including our Model 102 (Pulse), Model 102R (Pulse Duo), Model 103 (Demipulse), Model 104 (Demipulse Duo), Model 105 (AspireHC) and Model 106 (AspireSR) and the Model 1000 (SenTiva) pulse generators. Our AspireSR generator provides the benefits of VNS Therapy, with an additional feature: automatic stimulation in response to detection of changes in heart rate potentially indicative of a seizure. The SenTiva generator is the smallest and lightest device capable of delivering responsive therapy for epilepsy.

VNS for the treatment of depression

In July 2005, the FDA approved the VNS Therapy System for the adjunctive treatment of chronic or recurrent depression for patients 18 years or older who are experiencing a major depressive episode and have not had an adequate response to four or more antidepressant treatments. In May 2007, the U.S. Centers for Medicare and Medicaid Services ("CMS") issued a national determination of non-coverage within the U.S. with respect to reimbursement of the VNS Therapy System for patients with TRD, significantly limiting access to this therapeutic option for most patients. In May 2018, CMS published a tracking sheet to reconsider its National Coverage Determination ("NCD") of our VNS Therapy System for TRD in response to a letter that we submitted to CMS requesting a formal reconsideration of the NCD. We requested this review after a significant body of new evidence emerged about TRD and the role of VNS Therapy in its treatment. In February 2019, we announced that CMS had finalized its NCD to expand Medicare coverage for VNS Therapy for TRD. With the decision, CMS initiated coverage for Medicare beneficiaries through Coverage with Evidence Development when offered in a CMS-approved, double-blind, randomized, placebo-controlled trial with a follow-up duration of at least one year, with the possibility of extending the study to a prospective longitudinal study. We intend to commence a clinical study that meet these requirements. Enrollment will likely begin in the third quarter of 2019 and could take as long as 18 months to enroll approximately 500 patients.

Obstructive Sleep Apnea

In January 2018, we acquired ImThera Medical, Inc. ("ImThera"), a privately-held emerging-growth company developing an implantable neurostimulation device system for the treatment of obstructive sleep apnea. The Neuromodulation product line now includes ImThera's implantable device for the treatment of obstructive sleep apnea that stimulates multiple tongue muscles via the hypoglossal nerve, which opens the airway while a patient is sleeping. ImThera has a commercial presence in the European market, and an FDA pivotal study is ongoing in the U.S.

Cardiovascular

During conventional coronary artery bypass graft procedures and heart valve surgery, the patient's heart is temporarily stopped, or arrested. The patient is placed on an extracorporeal circulatory support system that temporarily functions as the patient's heart and lungs and provides blood flow to the body. Our products include systems to enable cardiopulmonary bypass, including heart-lung machines, oxygenators, perfusion tubing sets, cannulae and accessories, as well as related equipment and disposables for autotransfusion and autologous blood washing for neonatal, pediatric and adult patients.

Cardiopulmonary

Heart-lung machines

The HLM product group includes heart-lung machines, heater coolers, related cardiac surgery equipment and maintenance services.

Oxygenators and perfusion tubing systems

The oxygenators product group, which includes oxygenators and other disposable devices for extracorporeal circulation, includes the Inspire systems. The Inspire range of products, comprised of 12 models, provides perfusionists with a customizable approach for the benefit of patients.

Connect is our perfusion charting system. Focused on real time and retrospective calculations and trending tools, Connect assists perfusionists with data management during and after cardiopulmonary bypass.

Autotransfusion systems are one of the key elements for a complete blood management strategy is autologous blood transfusion, which involves the collection, processing and reinfusion of the patient's own blood lost at the surgical site during the peri-operative period.

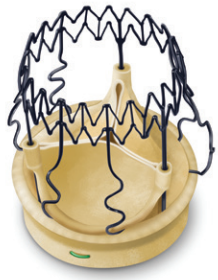
Our **Cannulae** product family, part of the oxygenator product group, is used to connect the extracorporeal circulation to the heart of the patient during cardiac surgery.

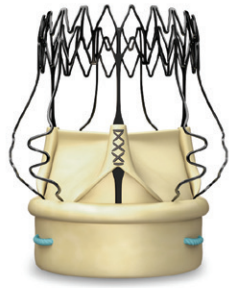
Heart Valves and Repair Products

We offer a comprehensive line of products to treat a variety of heart valve disorders, including a complete line of surgical tissue and mechanical valve replacements and repair products for damaged or diseased heart valves. Our heart valves and repair product offerings include:

Self-anchoring tissue heart valves

Perceval is LivaNova's sutureless bioprosthetic device designed to replace a diseased native valve or a malfunctioning prosthetic aortic valve using either traditional or minimally invasive heart surgery techniques. Perceval incorporates a unique technology that allows sutureless positioning and anchoring at the implantation site. This, in turn, offers the potential benefit of reducing the time the patient spends in cardiopulmonary bypass.





Tissue heart valves

Our tissue valves include the Mitroflow aortic pericardial tissue valve with phospholipid reduction treatment which is designed to mitigate valve calcification, and the Crown Phospholipid Reduction Treatment ("PRT") and Solo Smart aortic pericardial tissue valves. Our Solo Smart aortic pericardial tissue valve is an innovative, completely biological aortic heart valve with no synthetic material and a removable stent. Solo Smart provides the ease of implantation of a stented valve with the hemodynamic performance of a stentless valve.

Mechanical heart valves

Our wide range of mechanical valve offerings includes the Carbomedics Standard, Top Hat and Reduced Series Aortic Valves, as well as the Carbomedics Carbo-Seal and Carbo-Seal Valsalva aortic prostheses. We also offer the Carbomedics Standard, Orbis and Optiform mechanical mitral valves and Bicarbon Slimline, Bicarbon Fitline and Bicarbon Overline aortic and mitral valves.

Heart valve repair products

Mitral valve repair is a well-established solution for patients suffering from a leaky mitral valve, or mitral regurgitation. We offer a wide range of mitral valve repair products, including the Memo 3D and Memo 3D ReChord, AnnuloFlo and AnnuloFlex.

Modern Employer

Our people are an integral part of our growth strategy and are behind every aspect of our success. We are committed to being a modern employer, attracting and retaining the best talent.

Our Talent

As of December 2018, we employed more than 3,900 employees worldwide. Our employees are vital to our success, and we are engaged in an ongoing effort to identify, hire, manage and maintain the talent necessary to meet our business objectives. We believe that we have been successful in attracting and retaining qualified personnel in a highly competitive labor market due, in large part, to our competitive compensation and benefits, our rewarding work environment and by fostering employee professional training and development.

Rewarding performance

We retain our employees through globally competitive compensation and benefits programs that include harmonizing policies through our Global Total Rewards Centre of Excellence; identifying top talent and high potential employees and providing commensurate performance development and remuneration; working closely with our trade unions and works councils to ensure that we are inclusive of the interests of our workers in our policies and decisions; and regularly updating individual development plans for our employees and succession plans for our leadership.

To ensure alignment with the fair pay standards, we monitor and benchmark our payment policies and practices in every jurisdiction, ensuring that LivaNova continues to be a fair and diverse employer, free from discrimination.

Developing great people

In the last year, we continued to take important steps to create a vibrant working environment and to attract top talent.

In 2018, we offered 21 undergraduate and graduate students the opportunity to join our **internship** scheme in our Houston office in the following areas: R&D, Regulatory Affairs, Clinical Affairs (Data Science), Marketing, Operations and Manufacturing and IT.

Our internships typically last from three to six months and offer interns the opportunity to gain practical work and research-related experience.

Apprenticeships are, in many jurisdictions, a recognized alternative for high school students who might not want to pursue an academic path. We offer such a program in Munich, Germany to develop skills and knowledge in the field of industrial mechanics. These apprenticeships last for three years, and historically, our apprentices have joined the Company as employees upon successful completion of their program. We are exploring the possibility of extending our apprenticeship scheme to other locations as well.

We believe in continuing education and development regardless of nationality and origins, which is why we support the **Mountbatten** Program. In 2018, we welcomed three Mountbatten Fellows at our headquarters in London and at our International headquarters in Maidenhead, UK. We offer our Mountbatten Fellows the opportunity to gain valuable experience, across various sectors, such as Legal, Procurement, Sales and Marketing and International. The program operates over one year and aims to connect top, global businesses with some of the brightest candidates around the globe.

Strategic Leadership Experience

In 2018, we developed and implemented with the London Business School our **LivaNova Strategic Leadership Experience** program. This program was designed to enhance the leadership ability, strategic thinking, and creativity of LivaNova's top 100 senior Leaders. The program was held in London and Houston and attendees represented a cross section of leaders across all business functions and LivaNova's geographies.

The London Business School program culminated in attendees identifying and proposing 26 different experiments across the company to unlock different ways of achieving strategic growth. Over the course of the ensuing four months, attendees continued to pursue their experiments; and the results were presented at the first annual Global Leadership Conference in November 2018.

We continue to invest in our leaders with an ongoing commitment to conducting a second phase of the program in 2019, involving 50 new, emerging leaders in the organization.

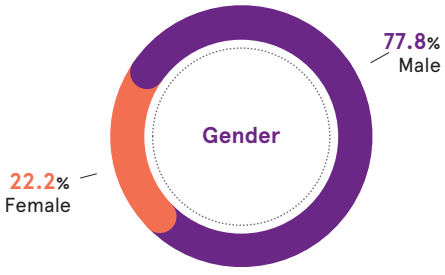
Mentoring & Women's Networking

LivaNova strongly believes that developing our future talent is key to the success of our business. LivaNova Women's Network is an organic, grassroots mentorship program by women and for women within our organization. This mentorship program provides mentees with new perspectives and an opportunity for more personalized development. At LivaNova, we aim to set up women for success by building strong relationships and creating opportunities to grow and develop.

Gender Diversity

At 31 December 2018, LivaNova had nine members on the Board of Directors, of whom seven (78%) were male and 2 (22%) were female.

BOARD OF DIRECTORS



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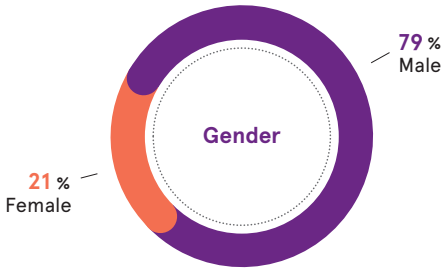
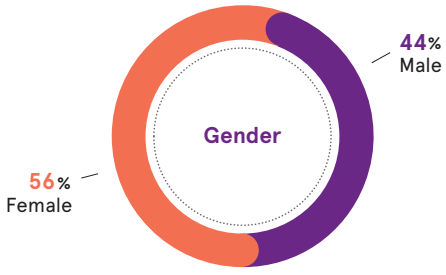
SENIOR MANAGERS



LivaNova had 91 senior managers (consisting of the executive leadership team and vice-presidents), of whom 72 (79%) were male and 19 (21%) were female.

GLOBAL EMPLOYEES



LivaNova had 3,904 employees, of whom 1,716 (44%) were male and 2,188 (56%) were female.

Social, Community and Human Rights

We are committed to human rights and the pursuit of compliance with the United Nations Universal Declaration of Human Rights not only within our own operations but also by encouraging compliance among our suppliers. We are committed to ensuring that our supply chain is free of from the use of force, coercion, abuse and deception for those working in it. Our UK Modern Slavery Act Statement and California Transparency in Supply Chains Act are available on our website, www.livanova.com.

We also support the United Nations Sustainable Development (UNSD) goals, and we have taken important steps in making a contribution towards helping communities. In 2018, LivaNova established an initiative, LivaNova International Fellowship ("LIFE"), designed to develop and deliver health innovation where there is an unmet community need, typically, though not always, in developing countries.

LIFE gives back to our global community through a wide range of actions, including:

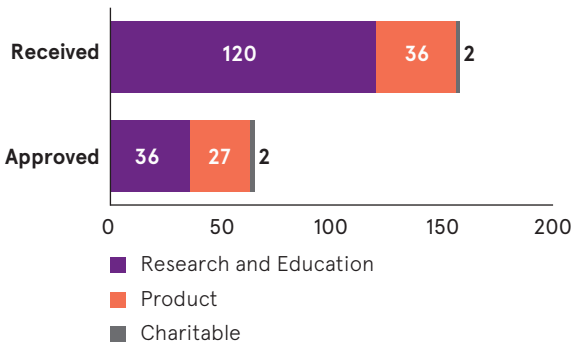
i) monetary donations;
ii) product donations and in-kind donations;
iii) community disease awareness donations; and
iv) emergency relief response.

In December 2018, LIFE initiated three projects that are scheduled to be completed in 2019 and on which we will report in the 2019 Annual Report.

LivaNova is committed to giving back to the global community, broadening access to healthcare and ensuring that more people can benefit from the innovative medical solutions that we bring to the world. We are excited to have LIFE as an integral part of our company.

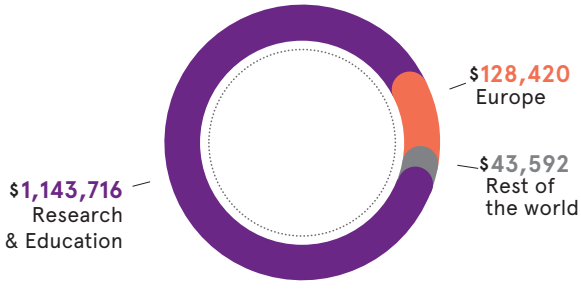
In 2018, across both Neuromodulation and Cardiovascular, LivaNova received 158 requests for research and education grants, product or Charitable donations. We are determined to be an important part of the community and endeavour to support researchers and patients who cannot afford medical treatment. In 2018, LivaNova has approved 65 such requests across Neuromodulation and Cardiovascular.

Requests Received and Approved



In 2018, LivaNova donated in excess of $1.1 million in grants for research and education, over $120,000 in product donations and more than $43,000 in Charitable donations.

When agreeing to donate products, especially medical devices that require surgery, to those who cannot afford surgery, LivaNova also helps identify appropriate surgeons who are willing to give their time in order to ensure those patients can receive the necessary full treatment.



Ethics and Integrity

Anti-Corruption and Anti-Bribery

Trust is one of our most valuable assets - and it is one of the most fragile. At LivaNova, our integrity is the foundation of that trust. Not only is 'what' we do important but 'how' we do it. We are subject to anti-corruption laws in all of the countries in which we operate. These laws can vary in approaches and standards, but we do not commit, or become involved in, bribery or corruption in any form. We want to be successful because of the quality, performance, and price of the products and services we provide; not because the decision to purchase these was influenced in some other way.

Our commitment to integrity starts with our Code of Business Conduct & Ethics ("Code") which sets out the key expectations of behaviour for our directors, officers, employees and contractors. We have also implemented a comprehensive set of policies and procedures to provide a firm foundation for our compliance program to provide handrails and guidance for employees to help ensure compliance with applicable laws, rules and regulations.

Regular training is provided across the company, in the form of online modules, webex and face-to-face training, to ensure individuals understand the risks, understand the processes and controls. This is particularly important for higher risk roles engaging with healthcare professionals and other government officials. We continuously review our training to ensure it remains relevant and engaging for the audience.

At LivaNova, every director, officer, and employee is responsible for being familiar with and following our Code, policies and procedures. Any waivers or exceptions granted are documented and, where requested, approved in advance by our Audit and Compliance Committee. We work with the internal audit function to monitor and audit key risk areas. In identifying issues, we also improve our system of internal controls and remedy any weaknesses identified.

Like most companies, we work with a large number of third parties. We conduct thorough due diligence with key intermediaries including distributors and agents to help manage the risk represented by these engagements.

The reporting of issues is a key part of an effective compliance culture, and while we encourage colleagues to raise issues with their managers or with functions such as Human Resources or Legal, we also provide a Speak Up helpline which gives a further avenue for individuals both inside the Company and outside of the company to raise concerns on either a named or anonymous basis. Any concerns reported are taken seriously and are followed up appropriately in accordance with the nature of the report. Follow up of issues reported is dealt with confidentially, in a timely manner and fairly to all parties involved. There is no presumption of guilt, and it is LivaNova's policy that any form of retaliation against a person reporting a matter in good faith is not tolerated. Oversight of all reports is managed by our Ethics and Integrity team.

It is extremely important that our compliance program continues to evolve as the external environment changes. In 2019, we will be conducting a full review of all components of the program to ensure it remains both relevant and effective.

Environment Sustainability

LivaNova is committed to conducting business in a manner respectful of the environment and our natural resources.

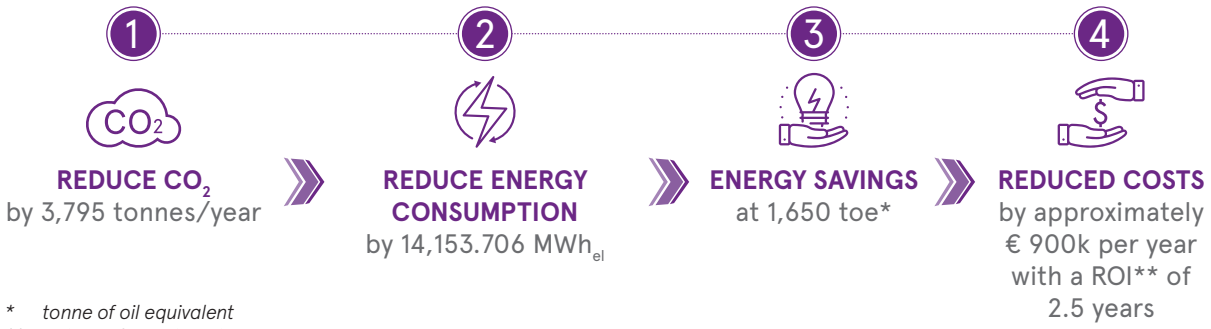
We aim to minimize the environmental impact of our business and products by reducing our carbon footprint and by using resources and energy efficiently.

As we innovate and develop technologies for our medical devices, we face the constant challenge of finding the right balance between the life-changing benefits that we bring to our patients and the need to protect the environment.

In 2018, we refreshed our approach to sustainability and implemented in our plant in Mirandola, Italy a new system, **TRIGENERATION.**

- represents the simultaneous production of electrical, thermal and cold energy
- elevated global efficiency, allowing for higher savings of primary energy (natural gas)

TRIGENERATION is designed to ➲



* *tonne of oil equivalent*
** *Return of Investment*

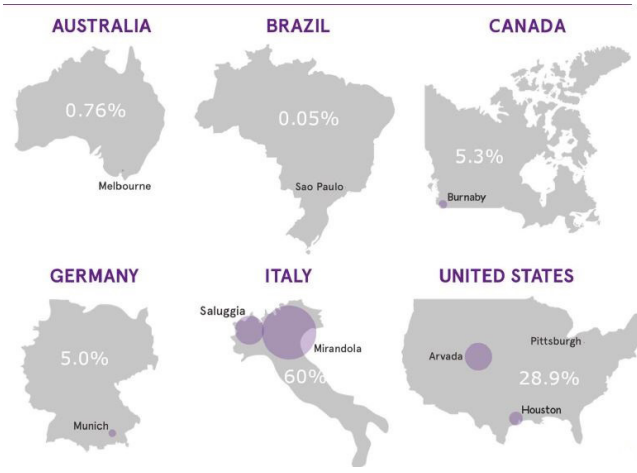
Other Environmental highlights for 2018

- We moved from using oil to methane, reducing considerably the air pollution in our plant in Saluggia (Italy).
- Our Saluggia plant was awarded ISO 14001 certification, becoming our second ISO-certified plant alongside Munich, Germany.
- We completed a significant project in our plant in Arvada, US and Mirandola, Italy replacing fluorescent light with LED with the aim of reducing overall energy consumption.

2018 Greenhouse Gas Report

	2018	2017 (base year)
Tonnes of carbon dioxide equivalent – tCO2(e)		
Scope 1	5,540	5,487
Scope 2	20,220	20,907
TOTAL	**25,760**	**26,394**
Intensity ratios		
Scope 1 and Scope 2 emissions/net sales (tonnes CO_2e/£m)	23.3	26.1
Scope 1 and Scope 2 emissions/FTE (tonnes CO_2e/FTE)	6.6	6.8

2018 Greenhouse Gas emissions by Country



Scope 1 (direct emissions)

Activities owned by our organization that release emissions straight into the atmosphere, for example the combustion of fuels in Company-owned equipment and fugitive emissions.

Scope 2 (indirect emissions)

Emissions released into the atmosphere associated with our consumption of purchased electricity, heat and steam.

Changes in emissions

As a result of our continuous focus on energy efficiency measures, our emissions have reduced by 2.4% compared with the previous year's figure. In light of the various acquisitions and divestitures which took place throughout 2018, we also recalculated our GHG emissions for 2017 in order to allow for an accurate comparison.

Methodology and approach

We have reported on all the emission sources required under the Companies Act 2006 (Strategic Report and Directors' Reports) Regulations 2013. The emissions reported are location-based which are obtained using emission factors published by the Department for Environment, Food & Rural Affairs (DEFRA) for UK locations, from the United States Environmental Protection Agency (EPA) for US locations and from the International Energy Agency (IEA) for the remaining locations.

Organisational boundary

The figures reported in the table cover emissions for LivaNova PLC using the financial control approach. Main operations where LivaNova has operational control have also been included.

Reporting period

The reporting period is defined as 1 January 2018 to 31 December 2018, in line with our financial year.

We will further our efforts to develop an effective framework and sustainability strategy in order not only to reduce our impact but to enhance the environment we all share.

Sustainability and Health and Safety

We manufacture a majority of our products at our manufacturing facilities located in Italy, Germany, the U.S., Canada, Brazil and Australia. We purchase raw materials and many of the components used in our manufacturing facilities from numerous suppliers in various countries. For quality assurance, sole source availability or cost effectiveness purposes, we may procure certain components and raw materials from a sole supplier. We work closely with our suppliers to ensure continuity of supply while maintaining high quality and reliability.

The quality systems we utilize in the design, production, warehousing and distribution of our products are designed to ensure that our products are safe and effective. Some of the governmental agencies and quality system regulations with which we are required to comply are as follows:

- The FDA's Quality System Regulation under section 520 of the federal Food, Drug and Cosmetic Act and its implementing regulations at 21 C.F.R. Part 820.
- The International Standards Organization - EN ISO 13485:2012, Medical devices - Quality management systems.
- The independent certification bodies, DEKRA, LNE/G-MED and TUV SUD, which act as our notified bodies to ensure that our manufacturing quality systems comply with ISO 13485:2003.
- The European Council Directives 93/42/EEC and 90/385/EEC, ISO 13485, which relates to medical devices and active implantable medical devices.

In addition, we utilize environmental management systems and safety programs to protect the environment and our employees. Some of the regulations and governmental agencies with which we comply are as follows:

- The U.S. Environmental Protection Agency
- The Occupational Health and Safety Assessment System
- The European Union Registration, Evaluation, Authorization and Restriction of Chemicals
- Italian regulations under the Integrated Environmental Authorization acts
- ISO 14001 certification

Industry Trends and Other Considerations

Our medical devices are subject to regulation by numerous government agencies, including the FDA and counterpart agencies outside the U.S. Each of these agencies require us to comply with laws and regulations governing the research, development, testing, manufacturing, labelling, pre-market clearance or approval, marketing, distribution, advertising, promotion, record keeping, reporting, tracking, and importing and exporting of medical devices. Our business is also affected by privacy and security laws, cost containment initiatives, and environmental health and safety laws and regulations worldwide.

The environment in which we operate is continually changing as economic trends change, technology evolves and society changes. The laws applicable to us also change to adapt to that environment. If a governmental authority were to conclude that we are not in compliance with applicable laws and regulations, we and our officers and employees could be subject to severe civil and criminal penalties, including substantial fines and damages, and exclusion from participation as a supplier of product to beneficiaries covered by government programs, among other potential enforcement actions.

Product Approval and Monitoring

In many countries, the medical devices we sell are subject to approval and other regulatory requirements regarding performance, safety and quality of our products. The following provides a brief overview of the oversight and requirements to which we are subject for the commercial distribution of our products in the U.S., Europe and Japan, the largest markets for our medical devices.

Each medical device we seek to distribute commercially in the U.S. must receive 510(k) clearance or pre-market approval ("PMA") from the FDA, unless specifically exempted by the agency. The first, known as pre-market notification or the 510(k) process, requires us to demonstrate that our new medical device is substantially equivalent to a legally marketed medical device. The second, and more rigorous PMA process, requires us to independently demonstrate that a medical device is safe and effective for its intended use. The PMA process is generally much more time-consuming and expensive than the 510(k) process. One or more clinical studies may be required to support a 510(k) application and are almost always required to support a PMA application.

In the European Union ("EU"), a single regulatory approval process exists, and conformity with the legal requirements is represented by the CE Mark. To obtain a CE Mark, defined products must meet minimum standards of performance, safety and quality (i.e., the essential requirements), and then, according to their classification, comply with one or more of a selection of conformity assessment routes. To demonstrate compliance with the essential requirements, we must undergo a conformity assessment procedure, which varies according to the type of medical device and its classification. As a general rule, demonstration of conformity of medical devices and their manufacturers with the essential requirements must be based, among other things, on the evaluation of clinical data supporting the safety and performance of the products during normal conditions of use. The competent authorities of the EU countries separately regulate the clinical research for medical devices and the market surveillance of products once they are placed on the market and manufacturers with CE marked devices are subject to regular inspections to monitor compliance with the applicable directives and essential requirements. A new Medical Device Regulation ("Reg MDR") was published by the EU in 2017, which will impose significant additional premarket and postmarket requirements. The regulation has a three-year implementation period. At the end of this transition period, national competent authorities and manufacturers must implement and ensure compliance with the changes enacted in Reg MDR. Among other things, this new regulation imposes additional reporting requirements on manufacturers of high-risk medical devices and provides for more strict clinical evidence requirements. We have initiated activities to ensure compliance with Reg MDR in the applicable timeframes.

To be sold in Japan, our medical devices must undergo thorough safety examinations and demonstrate medical efficacy before they are granted approval. The Japanese government, through the ministry of Health, Labour and Welfare, regulates medical devices under the Pharmaceutical Affairs Law ("PAL"). Penalties for a company's non-compliance with PAL can be severe, including revocation or suspension of a company's business license and criminal sanctions. Japanese regulatory bodies also assess the quality management systems of the manufacturer and product conformity to the requirements of PAL. We are subject to compliance investigations by these agencies.

Many countries in which we sell our products (outside of the U.S., the EU and Japan) have their own regulatory requirements for medical devices. Most of these countries require that product approvals be recertified on a regular basis, generally every four to five years. The recertification process requires that we evaluate any device changes and any new regulations or standards relevant to the device and, where needed, conduct appropriate testing to document continued compliance. Where recertification applications are required, they must be approved in order to continue selling our products in those countries.

The global regulatory environment is increasingly stringent and unpredictable. Several countries that did not have regulatory requirements for medical devices have established such requirements in recent years, and other countries have expanded, or plan to expand, their existing regulations. While harmonization of global regulations has been pursued, requirements continue to differ significantly among countries. We expect this global regulatory environment will continue to evolve, which could impact the cost, the time needed to approve, and ultimately, our ability to maintain existing approvals or obtain future approvals for our products.

Promotional Restrictions

Both before and after we release a product for commercial distribution, we have ongoing responsibilities under various laws and regulations governing medical devices. Regulations of the FDA and other regulatory agencies in and outside the U.S. impose extensive compliance and monitoring obligations on our business. These agencies review our design and manufacturing practices, labelling, record keeping, and manufacturers' required reports of adverse experiences and other information to identify potential problems with marketed medical devices. We are also subject to periodic inspections for compliance with applicable quality system regulations, which govern the methods used in, and the facilities and controls used for, the design, manufacture, packaging and servicing of finished medical devices intended for human use. In addition to FDA regulatory requirements, the FDA and other U.S. regulatory bodies (including the Federal Trade Commission, the Office of the Inspector General of the Department of Health and Human Services, the Department of Justice and various state Attorneys General) monitor the manner in which we promote and advertise our products. Although physicians are permitted to use their medical judgement to employ medical devices for indications other than those cleared or approved by the FDA, we are prohibited from promoting products for such "off-label" uses and can only market our products for cleared or approved uses.

Any adverse regulatory action, depending on its magnitude, may limit our ability to effectively market and sell our products, limit our ability to obtain future premarket approvals or result in a substantial modification to our business practices and operations.

Governmental Trade Regulations

The sale and shipment of our products and services across international borders, as well as the purchase of components and products from international sources, subjects us to extensive governmental trade regulations. A variety of laws and regulations apply to the sale, shipment and provision of goods, services and technology across international borders. Many countries control the export and re-export of goods, technology and services for public health, national security, regional stability, antiterrorism and other reasons. Some governments may also impose economic sanctions against certain countries, persons or entities. In certain circumstances, governmental authorities may require that we obtain an approval before we export or re-export goods, technology or services to certain destinations, to certain end-users and for certain end-uses. Because we are subject to extensive regulations in the countries in which we operate, we are subject to the risk that laws and regulations could change in a way that would expose us to additional costs, penalties or liabilities. These laws and regulations govern, among other things, our import and export activities.

We also sell and provide goods, technology and services to agents, representatives and distributors who may export such items to customers and end-users, and if these third parties violate applicable export control and economic sanctions laws and regulations when engaging in transactions involving our products, we may be subject to varying degrees of liability depending on the extent of our participation in the transaction. The activities of these third parties may cause disruption or delays in the distribution and sales of our products or result in restrictions being placed on our international distribution and sales of products, which may materially impact our business activities.

Privacy and Security Laws

We are subject to various laws worldwide that protect the confidentiality of certain patient health information, including patient medical records, and restrict the use and disclosure of patient health information by healthcare providers. Privacy standards, protecting personal information, in Europe and Asia are becoming increasingly strict, enforcement action and financial penalties related to privacy violations in the EU have increased significantly, and new laws and requirements are being passed. The management of cross-border transfers of information among and outside of EU member countries is becoming more complex, which may complicate the conduct of clinical research activities, as well as product offerings that involve transmission or use of clinical data. We continue our efforts to comply with those requirements and to adapt our business processes to those standards.

In the U.S., the Health Insurance Portability and Accountability Act of 1996 ("HIPAA"), as amended by the Health Information Technology and Clinical Health Act ("HITECH") and their respective implementing regulations impose specified requirements relating to the privacy, security and transmission of individually identifiable health information. Among other things, HITECH makes HIPAA's privacy and security standards directly applicable to "business associates," defined as independent contractors or agents of covered entities that create, receive, maintain or transmit protected health information in connection with providing a service for or on behalf of a covered entity. We may be deemed to operate as a business associate to covered entities in a limited number of instances. In those cases, the patient data that we receive may include protected health information, as defined under HIPAA. Enforcement actions can be costly and interrupt regular operations of our business. In addition, state laws govern the privacy and security of health information in certain circumstances, many of which differ from each other in significant ways, thus complicating compliance efforts.

In the EU, Regulation 2016/679 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data ("General Data Protection Regulation" or "GDPR") came into effect in May 2018. The GDPR replaces Directive 95/46/EC ("Data Protection Directive"). While many of the principles of the GDPR reflect those of the Data Protection Directive, for example in relation to the requirements relating to the privacy, security and transmission of individually identifiable personal information, there are a number of changes. In particular: (1) proactive compliance measures are introduced, such as the requirement to carry out a Privacy Impact Assessment and to appoint a Data Protection Officer where personal data is processed on a "large scale." Although "large scale" is not defined, it is likely that clinical trials involving substantial numbers of patients (or healthy volunteers if applicable) would mean that such requirements apply to us; and (2) the administrative fines

that can be levied are significantly increased, the maximum being the higher of €20 million (approximately $22.9 million), or 4%, of the total worldwide annual turnover of the group in the previous financial year.

Cost Containment Initiatives

Government and private sector initiatives to limit the growth of healthcare costs, including price regulation, competitive pricing, bidding and tender mechanics, coverage and payment policies, comparative effectiveness of therapies, technology assessments and managed-care arrangements are continuing in many countries where we do business. These changes are causing the marketplace to put increased emphasis on the delivery of more cost-effective medical devices and therapies. Government programs, private healthcare insurance and managed-care plans have attempted to control costs by limiting the extent of coverage or amount of reimbursement available for particular procedures or treatments, tying reimbursement to outcomes, shifting to population health management, and other mechanisms designed to constrain utilization and contain costs. Hospitals, which purchase implants, are also seeking to reduce costs through a variety of mechanisms, including, for example, creating centralized purchasing functions that set pricing and, in some cases, limit the number of vendors that can participate in the purchasing program. Hospitals are also aligning their interests with those of physicians through employment and other arrangements, such as gainsharing, whereby a hospital agrees with physicians to share certain realized cost savings resulting from the physicians' collective change in practice patterns, such as standardization of devices where medically appropriate, and participation in affordable care organizations. Such alignment has created increasing levels of price sensitivity among customers for our products.

Some third-party payers must also approve coverage and set reimbursement levels for new or innovative devices or therapies before they will reimburse healthcare providers who use the medical devices or therapies. Even though a new medical device may be cleared for commercial distribution, we may find limited demand for the device until coverage and sufficient reimbursement levels have been obtained from governmental and private third-party payers. In addition, some private third-party payers require that certain procedures or the use of certain products be authorized in advance as a condition of coverage.

For example, in the U.S., the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act (collectively, the "Affordable Care Act"), has the potential to substantially change healthcare financing and delivery by both governmental and private insurers, and significantly impact the pharmaceutical and medical device industries. The Affordable Care Act imposed, among other things, an annual excise tax of 2.3% on any entity that manufactures or imports medical devices offered for sale in the U.S. Due to subsequent legislative amendments, the excise tax has been suspended for the period 1 January 2016 to 31 December 2019, and, absent further legislative action, will be reinstated starting 1 January 2020.

International examples of cost containment initiatives and healthcare reforms in markets significant to our business include Japan, where the government reviews reimbursement rate benchmarks every two years. Such reviews may significantly reduce reimbursement for procedures using our medical devices or result in the denial of coverage for those procedures. As a result of our manufacturing efficiencies, cost controls and other cost-savings initiatives, we believe we are well-positioned to respond to changes resulting from this worldwide trend toward cost containment; however, uncertainty remains as to the nature of any future legislation or other reforms, making it difficult for us to predict the potential impact of cost-containment trends on future operating results.

Applicability of Anti-Corruption Laws and Regulations

Our worldwide business is subject to the U.S. Foreign Corrupt Practices Act of 1977 (the "FCPA"), the United Kingdom (the "UK") Bribery Act of 2010 (the "UK Bribery Act") and other anti-corruption laws and regulations applicable in the jurisdictions where we operate. The FCPA can be used to prosecute companies in the U.S. for arrangements with physicians or other parties outside the U.S. if the physician or party is deemed a government official of another country and prohibited payments are made to obtain or retain business. The UK Bribery Act prohibits both domestic and international bribery, as well as bribery across both public and private sectors. There are similar laws and regulations applicable to us outside the U.S. and the UK.

Health Care Fraud and Abuse Laws

We are also subject to U.S. federal and state government healthcare regulation and enforcement and government regulations in other countries in which we conduct our business.

The U.S. Anti-Kickback Statute (the "Anti-Kickback Statute") is subject to evolving interpretations. In the past, the U.S. government has enforced the Anti-Kickback Statute to reach large settlements with healthcare companies based on sham consulting and other financial arrangements with physicians. The majority of states in the U.S. also have anti-kickback laws with similar prohibitions, and in some cases may apply to items or services reimbursed by any third-party payor, including commercial insurers.

Additionally, violations of the U.S. False Claims Act (the "False Claims Act") can result in significant monetary penalties and treble damages. The federal government is using the False Claims Act, and the accompanying threat of significant financial liability, in its investigation and prosecution of device and biotechnology companies throughout the U.S., for example, in connection with the promotion of products for unapproved uses and other sales and marketing practices. The U.S. government has obtained multi-million and multi-billion-dollar settlements under the False Claims Act, in addition to individual criminal convictions under applicable criminal statutes. Given the significant size of actual and potential settlements, we anticipate that the U.S. government will continue to devote substantial resources to investigating healthcare providers' and manufacturers' compliance with applicable fraud and abuse laws.

HIPAA includes federal criminal statutes that prohibit, among other actions, knowingly and wilfully executing, or attempting to execute, a scheme to defraud any healthcare benefit program, including private third-party payors; knowingly and wilfully embezzling or stealing from a healthcare benefit program; wilfully obstructing a criminal investigation of a healthcare offense; and knowingly and wilfully falsifying, concealing or covering up a material fact or making any materially false, fictitious or fraudulent statement in connection with the delivery of or payment for healthcare benefits, items or services. Similar to the federal Anti-Kickback Statute, a person or entity does not need to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation.

There has also been a recent trend of increased federal and state regulation of payments made to physicians and other healthcare providers. The Affordable Care Act, among other things, imposes additional reporting requirements on certain device manufacturers for payments made by them to physicians and teaching hospitals, as well as ownership and investment interests held by physicians and their immediate family members. Failure to submit required information may result in civil monetary penalties of up to an aggregate of $150,000 per year (or up to an aggregate of $1 million per year for "knowing failures"), for all payments, transfers of value, or ownership or investment interests that are not timely, accurately and completely reported in an annual submission. Device manufacturers must submit reports to the government by the 90th day of each calendar year. Certain states also mandate implementation of compliance programs, impose restrictions on device manufacturer marketing practices and/or require the tracking and reporting of gifts, compensation and other remuneration to physicians.

The shifting commercial compliance environment and the need to build and maintain robust systems to comply with different compliance and/or reporting requirements in multiple jurisdictions increase the possibility that a healthcare company may violate one or more of the requirements. If our operations are found to be in violation of any of such laws or any other governmental regulations that apply to it, we may be subject to penalties, including, without limitation, civil and criminal penalties, damages, fines, the curtailment or restructuring of our operations, and exclusion from participation in federal and state healthcare programs, any of which could adversely affect our ability to operate our business and our financial results.

Environmental Health and Safety Laws

We are also subject to various environmental health and safety laws and regulations worldwide. Like other medical device companies, our manufacturing and other operations involve the use and transportation of substances regulated under environmental health and safety laws including those related to the transportation of hazardous materials. To the best of our knowledge at this time, we do not expect that compliance with environmental protection laws will have a material impact on our consolidated results of operations, financial position or cash flows.

Patents and Licenses

We rely on a combination of patents, trademarks, copyrights, trade secrets, and non-disclosure and non-competition agreements to protect our intellectual property. We generally file patent applications in the U.S. and countries where patent protection for our technology is appropriate and available. As of 31 December 2018, we held more than 1,200 issued patents worldwide, with approximately 250 pending patent applications that cover various aspects of our technology. Patents typically have a 20-year term from the application filing date. In addition, we hold exclusive and non-exclusive licenses to a variety of third-party technologies covered by patents and pending patent applications. There can be no assurance that pending patent applications will result in the issuance of patents, that patents issued to or licensed by us will not be challenged or circumvented by competitors, or that these patents will be found to be valid or sufficiently broad to protect our technology or to provide us with a competitive advantage. We have also obtained certain trademarks and trade names for our products and maintain certain details about our processes, products and strategies as trade secrets. In the aggregate, these intellectual property assets are considered to be of material importance to our business segments and operations. We regularly review third-party patents and patent applications in an effort to protect our intellectual property and avoid disputes over proprietary rights.

We rely on non-disclosure and non-competition agreements with employees, consultants and other parties to protect, in part, trade secrets and other proprietary technology. There can be no assurance that these agreements will not be breached, that we will have adequate remedies for any breach, that others will not independently develop equivalent proprietary information or that third parties will not otherwise gain access to our trade secrets and proprietary knowledge.

Industry Affiliations

To help navigate the complex compliance environment in which we operate, LivaNova has adopted the AdvaMed **Code of Ethics on Interactions with Health Care Professionals**, the APACmed **Code of Ethical Conduct, the Mecomed Code of Ethical Business Practice** and the MedTech Europe **Code of Ethical Business Practice**.

Business Review

LivaNova is reporting in its consolidated financial statements in this UK Annual Report the results from operations for the years ended 31 December 2018 and 31 December 2017. The basis of presentation, critical accounting estimates and significant accounting policies are set forth in "Note 2. Basis of Preparation, Use of Accounting Estimates and Significant Accounting Policies" to the consolidated IFRS financial statements contained in this UK Annual Report. Additionally, LivaNova reported US GAAP financial statements for the years ended 31 December 2018 and 31 December 2017 in the Annual Report on Form 10-K filed with the SEC on 18 March 2019.

LivaNova reported operating loss from continuing operations of $255.4 million on net sales of $1,107.0 million for the year ended 31 December 2018 and operating income from continuing operations of $87.7 million on net sales of $1,012.3 million for the year ended 31 December 2017. In the year ended 31 December 2018, LivaNova recorded a $294.0 million litigation provision, $15.9 million of restructuring expenses and $24.4 million of merger and integration expenses. These items totalled $334.4 million and are included in exceptional items in the consolidated statement of (loss) income. The year ended 31 December 2017 included $32.6 million in exceptional items, including restructuring expenses of $17.1 million and merger and integration expenses of $15.5 million.

Key Performance Indicators

The directors of LivaNova consider that the most important KPIs for 2018 are those set out below.

- **Net sales growth (on a constant currency basis, or adjusted net sales)**

Due to the number of currencies in which LivaNova's sales are invoiced to customers, the directors believe that constant currency sales growth is a more appropriate way to measure operational performance. Constant currency growth measures the change in sales between any particular year and the immediate prior year using average foreign exchange rates during the immediate prior year. Net sales include revenue earned from customers from sales of products and services net of customer discounts and estimated sales returns.

- **Adjusted operating income from continuing operations**

Income from operations, as measured under U.S. GAAP and adjusted for non-cash transactions and non-recurring costs, measures LivaNova's management of sales and normalized operating expenses.

- **Adjusted net income from continuing operations**

Adjusted net income represents our measure of the totality of LivaNova's income statement. It is calculated as U.S. GAAP net

income adjusted for non-cash transactions and non-recurring costs, unusual costs from finance-related matters and minority investments, and are adjusted for the related tax effects.

- **Adjusted earnings per share from continuing operations**

Earnings per share, as adjusted for the items referred to above, is a measure often used by investors to arrive at a value for each share issued by a company, including the dilutive effect of incentive shares issued to management.

- **Share price**

An important KPI to be evaluated over a period longer than one year is the share price, which reflects not only the management of LivaNova's earnings on a consistent basis, but also management's ability to articulate medium and longer term strategy and communicate both of these to investors.

Results of Operations

In this Annual Report, LivaNova and its consolidated subsidiaries report results for the years ended 31 December 2018 and 31 December 2017 as follows:

(In thousands, except per share amounts)	Year Ended 31 December 2018	Year Ended 31 December 2017
Net sales	$ 1,106,961	$ 1,012,277
Costs and expenses:		
Cost of sales	364,843	360,045
Product remediation	10,680	7,254
Selling, general and administrative	498,423	409,749
Research and development	154,039	114,983
Exceptional items	334,356	32,584
Operating (loss) income from continuing operations	(255,380)	87,662
Finance income	847	1,318
Finance expense	(9,825)	(7,797)
Gain on acquisitions	4,212	39,428
Impairment of investments	—	(8,565)
Foreign exchange and other (losses) gains	(1,925)	1,084
Share of losses from equity accounted investments	(644)	(16,719)
(Loss) income from continuing operations before tax	(262,715)	96,411
Income tax benefit	72,030	9,985
(Loss) income from continuing operations	(190,685)	106,396
Discontinued operations:		
(Loss) income from discontinued operations, net of tax	(9,954)	4,538
Impairment of discontinued operations, net of tax	—	(36,868)
Loss from discontinued operations	(9,954)	(32,330)
(LOSS) INCOME ATTRIBUTABLE TO OWNERS OF THE PARENT	**$ (200,639)**	**$ 74,066**

Net Sales

The table below illustrates net sales by operating segment for the years ended 31 December 2018 and 31 December 2017 (in thousands):

Revenues	Year Ended 31 December 2018	Year Ended 31 December 2017
Cardiovascular	$ 681,825	$ 635,517
Neuromodulation	422,990	374,976
Other	2,146	1,784
TOTAL	**$ 1,106,961**	**$ 1,012,277**

Cardiovascular

Cardiovascular net sales increased $46.3 million, or 7.3%, for the year ended 31 December 2018, as compared to the year ended 31 December 2017, primarily due to growth of $39.1 million in cardiopulmonary product revenue and $19.5 million from the acquisition of TandemLife on 4 April 2018, partially offset by a $12.2 million decline in heart valve net sales. Cardiopulmonary product sales increased year-over-year primarily due to strong heart-lung machine sales as customers continue to upgrade from our legacy S3 device to our current S5 device and as well as strong sales of the Inspire oxygenator. With respect to heart valves, the expected termination of a manufacturing contract resulted in a decrease in heart valve net sales of $8.4 million for the year ended 31 December 2018 as compared to 2017. Additionally, increased sales of our Perceval sutureless aortic heart valves were more than offset by a non-recurring sales return reserve of $3.4 million recorded during 2018 and continuing global declines in traditional tissue heart valve and mechanical heart valve sales.

Neuromodulation

Effective 1 January 2018, we began to include the results of heart failure within our Neuromodulation segment for internal reporting purposes in order to manage and evaluate business activities for purposes of allocating resources and assessing performance. Segment results for the years ended 31 December 2017 and 2016 have been recast to conform to the year ended 31 December 2018.

Neuromodulation net sales increased $48.0 million or 12.8% for the year ended 31 December 2018 compared to 2017 primarily due to strong adoption of the SenTiva VNS Therapy System in the U.S. Net sales in 2018 also benefited from increased sales in Europe following the approval and launch of the SenTiva VNS Therapy System in April 2018, and strong growth in the Rest of world region despite the short-term impact of business model changes.

The table below illustrates net sales by market geography for the years ended 31 December 2018 and 31 December 2017 (in thousands):

	Year Ended 31 December 2018			
	Cardiovascular	Neuromodulation	Other	Total
United States	$ 204,431	$ 348,980	$ —	$ 553,411
Europe[1]	186,558	42,443	—	229,001
Rest of world	290,836	31,567	2,146	324,549
TOTAL	**$ 681,825**	**$ 422,990**	**$ 2,146**	**$ 1,106,961**

	Year Ended 31 December 2017			
	Cardiovascular	Neuromodulation	Other	Total
United States	$ 177,805	$ 316,916	$ —	$ 494,721
Europe[1]	175,705	34,765	—	210,470
Rest of world	282,007	23,295	1,784	307,086
TOTAL	**$ 635,517**	**$ 374,976**	**$ 1,784**	**$ 1,012,277**

(1) Includes those countries in Europe where LivaNova has a direct sales presence. Countries where sales are made through distributors are included in Rest of world.

Cost of Sales and Expenses

The table below illustrates cost of sales and major expenses as a percentage of net sales:

	Year Ended 31 December 2018	Year Ended 31 December 2017
Cost of sales	33.0%	35.6%
Product remediation	1.0%	0.7%
Selling, general and administrative	45.0%	40.5%
Research and development	13.9%	11.4%
Exceptional items	30.2%	3.2%

Cost of Sales

Cost of sales as a percentage of net sales was 33.0% for the year ended 31 December 2018; a decrease of 2.6% as compared to 2017. This decrease was primarily due to product mix, pricing discipline and our focus on cost efficiencies.

Product Remediation

Product remediation as a percentage of net sales was 1.0% and 0.7% for the years ended 31 December 2018 and 2017, respectively. Product remediation expenses include internal labour costs, costs to remediate certain inspectional observations made by the FDA at our Munich facility and costs associated with the incorporation of the modification of the 3T device design into the next generation heater cooler device.

SG&A Expenses

SG&A expenses are comprised of sales, marketing, general and administrative activities. SG&A expenses exclude expenses incurred in connection with the merger between Cyberonics and Sorin, integration costs after the Mergers and restructuring costs under the Restructuring Plans initiated after the Mergers.

SG&A expenses as a percentage of net sales increased for the year ended 31 December 2018 as compared to 2017 primarily due to key growth driver investments in the U.S., including efforts to market directly to consumers within our NM business, acquisition costs and additional SG&A costs from the acquisitions of TandemLife and ImThera. Increased sales and marketing expenses internationally for general market expansion, increased litigation expenses primarily related to our 3T devices and the overall strengthening of our organizational capabilities to support growth also contributed to the increase in SG&A expenses as a percentage of net sales.

R&D Expenses

R&D expenses consist of product design and development efforts, clinical study programs and regulatory activities, which are essential to the Company's strategic portfolio initiatives, including TMVR, Treatment Resistant Depression and Heart Failure.

R&D expenses as a percentage of net sales increased for the year ended 31 December 2018 as compared to 2017 primarily due to additional R&D expenses for our development of next generation products, including heart-lung machines, the SenTiva VNS Therapy System and TandemLife and clinical trials and investments in TRD, TMVR, obstructive sleep apnea and heart failure.

Exceptional Items

Items that are material, either by size or incidence, are classified as exceptional items and include merger and integration expenses, restructuring expenses and litigation provision. Further details on these items are included below.

Merger and Integration Expenses

Merger and integration expenses consisted primarily of consulting costs associated with computer systems integration efforts, organization structure integration, synergy and tax planning, as well as the integration of internal controls for the two legacy organizations. In addition, integration expenses include retention bonuses, branding and renaming efforts and lease cancellation penalties in Milan and Brussels.

Merger and integration expenses as a percentage of net sales increased 0.7% to 2.2% for the year ended 31 December 2018 as compared to 2017, primarily due to costs associated with efforts to improve and standardize product pricing and procurement strategies.

We reported these expenses as a part of Exceptional Items separately in the LivaNova's consolidated statement of (loss) income.

Restructuring Expenses

Our 2015 and 2016 Reorganization Plans (the "Prior Plans") were initiated in October 2015 and March 2016, respectively, in conjunction with the completion of the merger of Sorin and Cyberonics. The Prior Plans included the Costa Rica manufacturing operation exit plan, initiated in December 2016 and completed during 2017, and the Suzhou, China exit plan, initiated in March 2017 and completed during 2018.

The decline in restructuring expenses for the years ended 31 December 2018 and 31 December 2017 as compared to the prior year was due to a decrease in restructuring activities.

We reported these expenses as a part of Exceptional Items separately in the LivaNova's consolidated statement of (loss) income.

Litigation Provision

During the year ended 31 December 2018, we recognized a $294.0 million litigation provision involving our 3T device. For further information, refer to "Note 25. Commitments and Contingencies" in our consolidated financial statements and accompanying notes.

Finance Expense

We incurred finance expense of $9.8 million for the year ended 31 December 2018, as compared to $7.8 million for 2017. The increase for the year 31 December 2018 as compared to 2017 was primarily due to increased debt borrowings in 2018.

Gain on Acquisitions

On 16 January 2018, we acquired the remaining outstanding interest of ImThera. As a result, we recognized an overall gain of $11.5 million for the fair value in excess of the cost of our investment of $14.1 million. $4.2 million of the overall gain is included in Gain on acquisitions on our consolidated statement of (loss) income for the year ended 31 December 2018.

$7.3 million of the overall gain is recorded as an opening balance adjustment to retained earnings (deficit) upon the adoption of IFRS 9.

On 2 May 2017, we acquired the remaining 51% equity interests in Caisson. On the acquisition date, we remeasured our notes receivable due from Caisson and our existing investment in Caisson at fair value and recognized a pre-tax non-cash gain of $1.3 million and $38.1 million, respectively.

Impairment of Investments

During December 2017, we impaired our cost-method investments in Respicardia and Rainbow Medical, in the amounts of $5.5 million and $3.0 million, respectively. Refer to "Note 13. Financial Assets" in our consolidated financial statements included in this Annual Report for additional information.

Foreign Exchange and Other

Due to the global nature of our operations, we are exposed to foreign currency exchange rate fluctuations. Foreign exchange and other losses were $1.9 million for the year ended 31 December 2018, consisting of net FX losses associated with intercompany debt and third-party financial assets and liabilities denominated in foreign currencies, net of the impact of foreign currency derivative contracts established to hedge against exchange rate movements.

Foreign exchange and other gains were $1.1 million for the year ended 31 December 2017, consisting of net FX losses of $2.1 million associated with intercompany debt and third-party financial assets and liabilities denominated in foreign currencies, net of the impact of foreign currency derivative contracts established to hedge against exchange rate movements, offset by a $3.2 million gain on a sale of our investment in Istituto Europeo di Oncologia S.R.L.

Income Taxes

LivaNova PLC is domiciled and resident in the UK. Our subsidiaries conduct operations and earn income in numerous countries and are subject to the laws of taxing jurisdictions within those countries, and the income tax rates imposed in the tax jurisdictions in which our subsidiaries conduct operations vary. As a result of the changes in the overall level of our income, the earnings mix in various jurisdictions and the changes in tax laws, our consolidated effective income tax rate may vary substantially from one reporting period to another.

Our effective income tax rate from continuing operations for the year ended 31 December 2018 was 27.4% compared with (10.4)% for the year ended 31 December 2017. Our effective income tax rate fluctuates based on, among other factors, changes in pretax income in countries with varying statutory tax rates, changes in valuation allowances, changes in tax credits and incentives and changes in unrecognized tax benefits associated with uncertain tax positions.

Compared with the year ended 31 December 2017, the decrease in the effective tax rate for 2018 was primarily attributable to the impact of the reduction to the U.S. federal statutory tax rate as a result of the Tax Act enacted on 22 December 2017, the repeal of the U.S. domestic production activity deduction, certain tax law changes in the UK that occurred during the three months ended 31 December 2017, the 2018 acquisitions of Imthera Medical Inc. and CardiacAssist, Inc., the sale of CRM, audit settlements in Italy and Germany and the impact of other discrete tax items.

Our (10.4)% effective income tax rate for the year ended 31 December 2017 included the impact of various discrete tax items, including the non-cash net charge of $27.5 million recorded as a result of the Tax Act and the acquisition of Caisson, inclusive of the $38.1 million non-taxable gain recognized to re-measure our existing equity investments in Caisson at fair value on the acquisition date.

U.S. Tax Reform

The Tax Act, which is also commonly referred to as "U.S. tax reform," significantly changed U.S. corporate income tax laws by, among other things, reducing the U.S. corporate income tax rate to 21%, which commenced in 2018.

As a result of the Tax Act, we recorded a non-cash net charge of $27.5 million during the year ended 31 December 2017 which is included in the income tax (benefit) expense on our consolidated statement of (loss) income. This amount primarily consists of two components: (i) $12.8 million relating to the impairment of foreign tax credits, and (ii) a net $14.7 million charge resulting from the remeasurement of our deferred tax assets and liabilities in the U.S. based on the change in the U.S. federal corporate income tax rate. During the fourth quarter of 2018, we recorded a reduction of $6.5 million to the non-cash net charge for the remeasurement of the deferred tax assets and liabilities related to the Tax Act and impairment of foreign tax credits. Our accounting for the remeasurement is complete with a final non-cash net charge of $21.0 million.

The Tax Act also established various other new U.S. corporate income tax laws that came into effect in 2018 along with proposed regulations issued in 2018. The extent to which these and other provisions of the Tax Act, or future legislation or final regulations clarifying the Tax Act, could impact our consolidated effective income tax rate in future periods depends on many factors including, but not limited to, the amount of profit generated by our subsidiaries operating in the U.S., the impact of the Company's current or contemplated tax planning strategies, the impact of new or amended tax laws or regulations by the U.S. and by countries outside the U.S., and other factors beyond our control.

Brexit

On 23 June 2016, the UK held a referendum in which voters approved an exit from the EU, commonly referred to as "Brexit." On 29 March 2017, the UK government gave formal notice of its intention to leave the EU, formally commencing the negotiations regarding the terms of withdrawal between the UK and the EU. Negotiations between the UK and the EU continue about provisions of the withdrawal agreement. Unless the deadline is extended, the UK will leave the EU on 31 October 2019.

Although the long-term effects of Brexit will depend on any agreements the UK makes to retain access to the EU markets, Brexit has created additional uncertainties that may ultimately result in new regulatory costs and challenges for medical device companies and increased restrictions on imports and exports throughout Europe. This could adversely affect our ability to conduct and expand our operations in Europe and may have an adverse effect on our business, financial condition and results of operations.

The notification does not change the application of existing tax laws and does not establish a clear framework for what the ultimate outcome of the negotiations and legislative process will be. Various tax reliefs and exemptions that apply to transactions between EU Member States under existing tax laws may cease to apply to transactions between the UK and EU Member States when the UK ultimately withdraws from the EU. It is unclear at this stage if or when any new tax treaties between the UK and the EU or individual EU Member States will replace those reliefs and exemptions. It is also unclear at this stage what financial, trade and legal implications will ensue from Brexit and how Brexit may ultimately affect us, our customers, suppliers, vendors, or our industry.

We and several of our wholly owned subsidiaries that are domiciled either in the UK, various EU Member States, or in the U.S., are party to intercompany transactions and agreements under which we receive various tax reliefs and exemptions in accordance with applicable international tax laws, treaties and regulations. If certain treaties applicable to our transactions and agreements change materially, Brexit may have a material adverse impact on our future financial results and results of operations. We continue to monitor and assess the potential impact of this event and explore possible tax-planning strategies that may mitigate or eliminate potential adverse impacts.

We will not account for the impact of Brexit in our income tax provisions until changes in tax laws or treaties between the UK and the EU or individual EU Member States with the UK and/or the U.S. are enacted, or the withdrawal becomes effective.

European Union State Aid Challenge

On 26 October 2017, the European Commission ("EC") announced that an investigation will be opened with respect to the UK's controlled foreign company ("CFC") rules. The CFC rules under investigation provide group finance exemptions ("GFE") to entities controlled by UK parent companies that are subject to lower tax rates if the activities being undertaken by the CFC relate to financing. On April 2, 2019, the EC concluded that "when financing income from a foreign group company, channelled through an offshore subsidiary, is financed with UK connected capital and there are no UK activities involved in generating the finance profits, the GFE is justified and does not constitute State aid under EU rules." However, in relation to Significant People Functions, "when financing income from a foreign group company, channelled through an offshore subsidiary, derives from UK activities, the GFE is not justified and constitutes State aid under EU rules." HMRC has stated that they do not consider the timing and form of the UK's exit from the EU will have a practical impact on the requirement to recover the alleged aid. Within the coming weeks, HMRC will provide details as to how it will be recovering the amounts required by the decision. Based upon our assessment of the issue and the limited level of UK activities involved in our financing, no uncertain tax position reserve has been recognized related to this matter.

Share of Losses from Equity Method Investments

Due to an additional investment by a third party during the year ended 31 December 2018, our equity interest in Highlife decreased to 17.5% from 24.6%. We determined that we no longer had significant influence over Highlife and, as a result, we began to measure Highlife at cost minus impairment, if any, plus or minus changes resulting from observable price changes in orderly transactions for the identical or similar investment of the same issuer. Losses from equity method investments were $0.6 million for the year ended 31 December 2018, which was attributable to Highlife. Losses for the year ended 31 December 2017 of $16.7 million were due primarily to the impairment of our investment in, and notes receivable from, Highlife of $13.0 million. Refer to "Note 13. Financial Assets" in our consolidated financial statements included in this Annual Report for additional information.

Discontinued Operations

We completed the CRM Sale on 30 April 2018, for total cash proceeds of $195.9 million, less cash transferred of $9.2 million, subject to a closing working capital adjustment. In conjunction with the sale, we entered into transition services agreements to provide certain support services generally for up to twelve months from the closing date of the sale. The services include, among others, accounting, information technology, human resources, quality assurance, regulatory affairs, supply chain, clinical affairs and customer support. For the year ended 31 December 2018, we recognized income of $2.8 million for providing these services. Income recognized related to the transition services agreements is recorded as a reduction to the related expenses in the associated expense line items in our consolidated statement of (loss) income.

In November 2017, we concluded that the sale of CRM represented a strategic shift in our business that would have a major effect on future operations and financial results. Accordingly, the operating results of CRM are classified as discontinued operations in our consolidated statement of (loss) income for all the periods presented in this Annual Report and the related assets and liabilities are presented as held for sale as of 31 December 2017. Additionally, we tested the long-lived assets of CRM for impairment and recognized an impairment to tangible and intangible assets of $36.9 million, net of a $8.0 million tax benefit during the year ended 31 December 2017.

The table below illustrates the results of discontinued operations (in thousands):

	Year Ended 31 December 2018	Year Ended 31 December 2017
Discontinued Operations:		
(Loss) income from discontinued operations, net of tax	$ (9,954)	$ 4,538
Impairment of discontinued operations, net of tax	—	(36,868)
Net loss from discontinued operations	$ (9,954)	$ (32,330)

Liquidity and Capital Resources

As discussed in "Note 25. Commitments and Contingencies" to the consolidated financial statements in this 2018 Annual Report, the Company recorded a $294.1 million litigation provision liability based on managements' best estimate, of which $161.9 million is anticipated to be paid during 2019 and the majority of the remainder is expected to be paid in the first half of 2020. On 26 March 2019, we entered into a $350 million facility agreement with Bank of America Merrill Lynch International DAC, Barclays Bank PLC, BNP Paribas (London Branch) and Intesa Sanpaolo S.P.A. which matures in March 2022 and includes certain financial covenants. Future borrowings under the facility will bear interest at a rate of LIBOR plus 1.6% for borrowings in U.S. dollars and EURIBOR plus 1.4% for euro-denominated borrowings.

Based on our current business plan, we believe that our existing cash and cash equivalents, future cash generated from operations and borrowings under the financing commitments we have obtained will be sufficient to fund our expected operating needs, working capital requirements, R&D opportunities, capital expenditures, obligations anticipated for the litigation involving our 3T device and debt service requirements over the 12-month period beginning from the issuance date of these financial statements.

Cash Flows

Net cash and cash equivalents provided by (used in) operating, investing and financing activities and the net decrease (increase) in the balance of cash and cash equivalents were as follows (in thousands):

	Year Ended 31 December 2018	Year Ended 31 December 2017
Operating activities	$ 120,489	$ 91,339
Investing activities	(120,556)	(52,855)
Financing activities	(42,348)	11,294
Effect of exchange rate changes on cash and cash equivalents	(3,996)	4,048
Net decrease (increase) in cash and cash equivalents	$ (46,411)	$ 53,826

Operating Activities

Cash provided by operating activities for the year ended 31 December 2018 increased $29.2 million as compared to 2017, primarily due to improved working capital management offset by a decrease in net income adjusted for non-cash items.

Cash provided by operating activities for the year ended 31 December 2017 was $91.3 million, primarily due to net income of $74.1 million along with adjustments to net income of $165.5 million for non-cash items, which included depreciation and amortization of $78.5 million and a non-cash loss of $44.9 million related to the impairment of tangible and intangible assets of our discontinued operations, offset by utilization of cash for operating assets and liabilities of $101.7 million.

Investing Activities

Cash used in investing activities during the year ended 31 December 2018 increased $67.7 million as compared to 2017. The increase primarily resulted from an increase in cash paid for acquisitions of $265.5 million, partially offset by cash received from the sale of CRM of $186.7 million and an increase in proceeds from asset sales of $8.3 million.

Cash used in investing activities was $52.9 million during the year ended 31 December 2017. We invested $34.1 million in property, plant and equipment. We also utilized cash of $27.9 million related to our investments in privately held medical start-up companies, which included the purchase of the 51% of the remaining interest in Caisson utilizing cash of $14.2 million, and investments in, and loans to, our equity and cost method investees of $13.7 million.

Financing Activities

Cash used in financing activities during the year ended 31 December 2018 increased $53.6 million as compared to 2017, primarily due to $50.0 million in cash used to repurchase shares in 2018 under a publicly announced repurchase plan and a $13.0 million payment for deferred consideration related to an acquisition, partially offset by an increase in net borrowings of $17.3 million.

Cash used in financing activities during the year ended 31 December 2017 was $11.3 million, which includes $32.4 million in borrowings under our revolving credit facilities and repayment of long-term debt of $22.8 million. We also borrowed $2.0 million in additional long-term debt.

Debt and Capital

Our capital structure consists of debt and equity. As of 31 December 2018 total debt of $168.3 million was 11.2% of total equity of $1.5 billion.

Debt

During the year ended 31 December 2018, we reduced our outstanding revolving credit facilities by $50.7 million, repaid $23.8 million of long-term debt obligations and borrowed $103.6 million in additional long-term debt.

During the year ended 31 December 2017, we increased our outstanding revolving credit facilities by $32.4 million, repaid $22.8 million of long-term debt obligations and borrowed $2.0 million in additional long-term debt.

Contractual Obligations

We have various contractual commitments that we expect to fund from existing cash, future operating cash flows and borrowings under our revolving credit facilities. The actual timing of the clinical commitment payments may vary based on the completion of milestones which are beyond our control. The following table summarises our significant contractual obligations as of 31 December 2018 and the periods in which such obligations are due (in thousands):

	Less Than One Year	One to Three Years	Three to Five Years	Thereafter	Total Contractual Obligations
Principal payments on debt obligations	$ 28,794	$ 63,556	$ 35,583	$ 40,399	$ 168,332
Interest payments on long-term debt	4,436	7,343	4,626	2,269	18,674
Operating leases	11,986	21,031	14,998	20,943	68,958
Inventory supply contract obligations	20,228	1,620	—	—	21,848
Derivative instruments	5,063	329	—	—	5,392
Contingent consideration	18,530	94,603	60,849	5,929	179,911
Other commitments	631	28	2	1	662
TOTAL CONTRACTUAL OBLIGATIONS	**$ 89,668**	**$ 188,510**	**$ 116,058**	**$ 69,541**	**$ 463,777**

On 29 March 2019, we announced a settlement framework that provides for a comprehensive resolution of the personal injury cases pending regarding our 3T device. Refer to "Note 25. Commitments and Contingencies" for further information.

We have other commitments that we are contractually obligated to fulfil with cash under certain circumstances. These commitments include letters of credit to guarantee our performance as it relates to our contract bidding, VAT tax, tax appeals, and other obligations in various jurisdictions. Obligations under these guarantees are not normally called, as we typically comply with underlying performance requirements. As of 31 December 2018, no liability has been recorded in the financial statements associated with these obligations.

The following table summarises our guarantees as of 31 December 2018 (in thousands):

	Less Than One Year	One to Three Years	Three to Five Years	Thereafter	Total Contractual Obligations
Guarantees on government bids[1]	$ 15,132	$ 5,973	$ 694	$ 686	$ 22,485
Guarantees - commercial[2]	812	2,246	595	603	4,256
Guarantees to tax authorities[3]	—	5,268	3,171	6,900	15,339
Guarantees to third-parties[4]	4,573	—	—	—	4,573
TOTAL GUARANTEES	**$ 20,517**	**$ 13,487**	**$ 4,460**	**$ 8,189**	**$ 46,653**

(1) Government bid guarantees include such items as unconditional bank guarantees, irrevocable letters of credit and bid bonds.
(2) Commercial guarantees include our lease and tenancy guarantees.
(3) The guarantees to the tax authorities consist primarily of the guarantee issued to the Italian VAT Authority.
(4) Guarantees to third-parties consist of a guarantee of a third-party loan which expired in January 2019.

LivaNova is exposed to certain market risks as part of its on-going business operations, including risks from foreign currency exchange rates, interest rate risks and concentration of procurement suppliers that could adversely affect LivaNova's consolidated balance sheet, income statement and cash flow. LivaNova manages these risks through regular operating and financing activities and, at certain times, derivative financial instruments.

Foreign Currency Exchange Rate Risk

Due to the global nature of LivaNova's operations, it is exposed to foreign currency exchange rate fluctuations. LivaNova maintains a foreign currency exchange rate risk management strategy that utilizes derivatives to reduce LivaNova's exposure to unanticipated fluctuations in forecast revenue and costs and fair values of debt, inter-company debt and accounts receivables caused by changes in foreign currency exchange rates.

LivaNova mitigates its credit risk relating to counter-parties of LivaNova's derivatives through a variety of techniques, including transacting with multiple, high-quality financial institutions, thereby limiting LivaNova's exposure to individual counter-parties and by entering into International Swaps and Derivatives Association, Inc. Master Agreements, which include provisions for a legally enforceable master netting agreement, with almost all of LivaNova's derivative counter-parties. The terms of the ISDA agreements may also include credit support requirements, cross default provisions, termination events, or set-off provisions. Legally enforceable master netting agreements reduce credit risk by providing protection in bankruptcy in certain circumstances and generally permitting the closeout and netting of transactions with the same counter-party upon the occurrence of certain events.

Based on our exposure to foreign currency exchange rate risk, a sensitivity analysis indicates that if the USD had uniformly strengthened by 10% against the GBP and the Japanese Yen, in the year ended 31 December 2018, the effect on our unrealised income, for our derivatives outstanding at 31 December 2018, would have been approximately $(0.7) million; if the USD had uniformly weakened by 10% against same currencies, the effect on our unrealized expenses, for our derivatives outstanding at 31 December 2018, would have been approximately $0.9 million.

Any gains or losses on the fair value of derivative contracts would generally be offset by gains and losses on the underlying transactions. These offsetting gains and losses are not reflected in the above analysis.

If LivaNova was to incur a hypothetical 10 percent adverse change in foreign currency exchange rates, net unrealized losses associated with LivaNova's foreign currency denominated assets and liabilities as of 31 December 2018, net of LivaNova's hedging would not be material to LivaNova's consolidated balance sheet or consolidated statement of (loss) income.

Interest Rate Risk

LivaNova is subject to interest rate risk on its investments and debt. LivaNova manages a portion of its interest rate risk with contracts that swap floating-rate interest payments for fixed rate interest payments. If interest rates were to increase or decrease by 0.5 percent, the effects on LivaNova's consolidated income statement would not be material.

Concentration of Credit Risk

LivaNova's trade accounts receivable represents potential concentrations of credit risk. This risk is limited due to the large number of customers and their dispersion across a number of geographic areas, as well as LivaNova's efforts to control its exposure to credit risk by monitoring its receivables and the use of credit approvals and credit limits. In addition, LivaNova has historically had strong collections and minimal write-offs. Whilst the Company believes that LivaNova's reserves for credit losses are adequate, essentially all of LivaNova's trade receivables are concentrated in the hospital and healthcare sectors worldwide and, accordingly, LivaNova is exposed to their respective businesses, economic and country-specific variables. Although the Company does not currently foresee a concentrated credit risk associated with these receivables, repayment is dependent on the financial stability of these industry sectors and their respective countries' national economies and healthcare systems.

Risks and Uncertainties

Industry and Market Risks

Global healthcare policy changes, including U.S. healthcare reform legislation, may have a material adverse effect on us.

In response to perceived increases in healthcare costs, there have been and continue to be proposals by governments, regulators and third-party payers to control these costs. The adoption of some or all of these proposals could have a material adverse effect on our financial position and results of operations. These proposals have resulted in efforts to enact U.S. healthcare system reforms that may lead to pricing restrictions, limits on the amounts of reimbursement available for our products and could limit the acceptance and use of our products.

In the U.S., the federal government enacted legislation, including the Affordable Care Act, to overhaul the nation's healthcare system. Among other things, the Affordable Care Act:

- imposes an annual excise tax of 2.3% on any entity that manufactures or imports medical devices offered for sale in the U.S. Due to subsequent legislative amendments, the excise tax has been suspended for the period 1 January 2016 to 31 December 2019, and absent further legislative action, will be reinstated starting 1 January 2020; and
- implements payment system reforms including a national pilot program on payment bundling to encourage hospitals, physicians and other providers to improve the coordination, quality and efficiency of certain healthcare services through bundled payment models.

The Affordable Care Act also focuses on a number of Medicare provisions aimed at decreasing costs. It is uncertain at this point what unintended consequences these provisions will have on patient access to new technologies. The Medicare provisions include value-based payment programs, increased funding of comparative effectiveness research, reduced hospital payments for avoidable readmissions and hospital-acquired conditions, and pilot programs to evaluate alternative payment methodologies that promote care coordination (such as bundled physician and hospital payments). Additionally, the law includes a reduction in the annual rate of inflation for hospitals and the establishment of an independent payment advisory board to recommend ways of reducing the rate of growth in Medicare spending beginning in 2014. We cannot predict what healthcare programs and regulations will be implemented at the global level or the U.S. federal or state level, or the effect of any future legislation or regulation; however, any changes that lower reimbursement for our products or reduce medical procedure volumes could adversely affect our business and results of operations.

We may be unable to obtain and maintain adequate third-party reimbursement for products, which could have a significant negative impact on our future operating results.

Our ability to commercialize our products is dependent, in large part, on whether third-party payors, including private healthcare insurers, managed care plans, governmental programs and others agree to cover the costs and services associated with our products and related procedures in the U.S. and internationally.

Our products are purchased principally by healthcare providers that typically bill various third-party payors, such as governmental programs (e.g., Medicare and Medicaid in the U.S.) and private insurance plans for the healthcare services provided to their patients. The ability of customers to obtain appropriate reimbursement for their services and the products they provide is critical to the success of medical technology companies. The availability of adequate reimbursement affects the decision as to which procedures are performed, which products are purchased and what prices customers are willing to pay. After we develop a promising new product, we may find limited demand for the product if reimbursement approval is not obtained from private and governmental third-party payors. In addition, periodic changes to reimbursement methodologies could have an adverse impact on our business.

Outside the U.S., reimbursement systems vary significantly by country. Many non-U.S. markets have government-managed healthcare systems that govern reimbursement for medical devices and procedures. Additionally, some non-U.S. reimbursement systems provide for limited payments in a given period and, as a consequence, result in extended payment periods. If adequate levels of reimbursement from third-party payors outside of the U.S. are not obtained, international sales of our products may decline.

We are also subject to risks relating to changes in government and private medical reimbursement programs and policies, and changes in legal regulatory requirements in the U.S. and around the world. Implementation of further legislative or administrative reforms to these reimbursement systems, or adverse decisions relating to coverage of or reimbursement for our products by administrators of these systems, could have an impact on the acceptance of and demand for our products and the prices that our customers are willing to pay for them.

Our failure to comply with rules relating to reimbursement of healthcare goods and services, healthcare fraud and abuse, false claims and other applicable laws or regulations may subject us to penalties and adversely impact our reputation and business operations.

Our devices and therapies are subject to regulation by various governmental agencies worldwide responsible for coverage, reimbursement and regulation of healthcare goods and services. Our devices, products and therapies are purchased principally by hospitals or physicians that typically bill various third-party payers, such as governmental programs (e.g., Medicare, Medicaid and comparable non-U.S. programs), private insurance plans and managed care plans, for the healthcare services provided to their patients. The ability of our customers to obtain appropriate reimbursement for products and services from third-party payers is critical because it affects which products customers purchase and the prices they are willing to pay. As a result, our devices, products and therapies are subject to regulation regarding quality and cost by various U.S. federal entities, as well as comparable state and non-U.S. agencies responsible for reimbursement and regulation of health care goods and services, including laws and regulations related to kickbacks, false claims, self-referrals and health care fraud. Many states have similar laws that apply to reimbursement by state Medicaid and other funded programs as well as in some cases to all payers. In certain circumstances, insurance companies can attempt to bring a private cause of action against a manufacturer for causing a false claim to be filed under the U.S. Racketeer Influenced and Corrupt Organizations Act. In addition, as a manufacturer of FDA-approved devices

reimbursable by federal healthcare programs, we are subject to the Physician Payments Sunshine Act, which requires us to annually report certain payments and other transfers of value we make to U.S.-licensed physicians or U.S. teaching hospitals. Any failure to comply with these laws and regulations could subject us or our officers and employees to criminal and civil financial penalties.

The risk of being found in violation of these laws is increased by the fact that many of them have not been fully interpreted by the regulatory authorities or the courts, and their provisions are open to a variety of interpretations. Because of the breadth of these laws and the narrowness of the statutory exceptions and safe harbors available under such laws, it is possible that some of our business activities, including our relationships with surgeons and other healthcare providers, some of whom recommend, purchase and/or prescribe our devices, group purchasing organizations and our independent sales agents and distributors, could be subject to challenge under one or more of such laws.

The success and continuing development of our products depend on maintaining strong relationships with physicians and healthcare professionals.

If we fail to maintain our working relationships with physicians and other healthcare professionals, our products may not be developed and marketed in line with the needs and expectations of the professionals who use and support our products. Physicians assist us as researchers, marketing consultants, product consultants, inventors and public speakers, and we rely on these professionals to provide us with considerable knowledge and experience. If we are unable to maintain these strong relationships, the development and marketing of our products could suffer, which could have a material adverse effect on our consolidated financial condition and results of operations.

Inadequate funding for U.S. federal government agencies and government shutdowns could negatively affect our business, results of operations and financial condition.

The ability of the FDA to review and approve new products can be affected by a variety of factors, including government budget and funding levels, ability to hire and retain key personnel, government shutdowns and statutory, regulatory and policy changes. Disruptions at the FDA and in other U.S. federal agencies may slow the time necessary for new medical devices to be reviewed and/or approved which would adversely affect our business.

In addition, a portion of our revenue is dependent on U.S. federal government healthcare program reimbursement. Any disruption in U.S. federal government operations, including government shutdowns, could have a material adverse effect on our business, results of operations and financial condition.

Patient confidentiality and federal and state privacy and security laws and regulations in the U.S. and around the world may adversely impact our financial position and reputation.

HIPAA establishes federal rules protecting the privacy and security of personal health information. In addition to HIPAA, virtually every U.S. state has enacted laws to safeguard privacy, and these laws vary significantly from state to state and change frequently. The privacy and security rules address the use and disclosure of individual healthcare information and the rights of patients to understand and control how such information is used and disclosed. The operation of our business involves the collection and use of substantial amounts of "protected health information." If we fail to comply with the applicable regulations, we could suffer civil penalties up to or exceeding $50,000 per violation, with a maximum of $1.5 million for multiple violations of an identical requirement during a calendar year and criminal penalties with fines up to $250,000 and potential imprisonment.

The EU's GDPR, in force since May 2018, protects the privacy and security of "personally identifiable information" and personal health information relating to individuals within the EU and, like HIPAA, GDPR addresses the use and disclosure of individual healthcare information and the rights of patients to understand and control how such information is used and disclosed. It subjects us to a rigorous proactive compliance scheme and if we fail to comply with the GDPR we could be sued for compensation by individuals who have suffered material or non-material damage and could suffer administrative fines up to the higher of €20.0 million (approximately $22.9 million), or 4%, of the total worldwide annual revenue of the group in the previous financial year. We may also be subject to criminal sanctions.

We are subject to costly and complex laws and governmental regulations and any adverse regulatory action may materially adversely affect our financial condition and business operations.

Our medical devices and technologies, as well as our business activities, are subject to a complex set of regulations and rigorous enforcement, including by the FDA, U.S. Department of Justice, Health and Human Services - Office of the Inspector General, and numerous other federal, state, and non-U.S. governmental authorities. To varying degrees, each of these agencies requires us to comply with laws and regulations governing the development, testing, manufacturing, labelling, marketing and distribution of our products. As a part of the regulatory process of obtaining marketing clearance for new products and new indications for existing products, we conduct and participate in numerous clinical trials with a variety of study designs, patient populations, and trial endpoints. Unfavorable or inconsistent clinical data from existing or future clinical trials or the market's or FDA's perception of this clinical data, may adversely impact our ability to obtain product approvals, our position in, and share of, the markets in which we participate,

and our business, financial condition, results of operations and cash flows. We cannot guarantee that we will be able to obtain or maintain marketing clearance for our new products or enhancements or modifications to existing products, and the failure to maintain approvals or obtain approval or clearance could have a material adverse effect on our business, results of operations, financial condition and cash flows. Even if we are able to obtain approval or clearance, it may:

- take a significant amount of time;
- require the expenditure of substantial resources;
- involve stringent clinical and pre-clinical testing, as well as increased post-market surveillance; and
- involve modifications, repairs or replacements of our products, and limit the proposed uses of our products.

Both before and after a product is commercially released, we have ongoing responsibilities under FDA and other applicable non-U.S. government agency regulations. For instance, many of our facilities and procedures and those of our suppliers are also subject to periodic inspections by the FDA to determine compliance with applicable regulations. The results of these inspections can include inspectional observations on FDA's Form-483, warning letters, or other forms of enforcement. If the FDA were to conclude that we are not in compliance with applicable laws or regulations, or that any of our medical products are ineffective or pose an unreasonable health risk, the FDA could ban such medical products, detain or seize adulterated or misbranded medical products, order a recall, repair, replacement, or refund of such products, refuse to grant pending PMA applications or require certificates of non-U.S governments for exports, and/or require us to notify health professionals and others that the devices present unreasonable risks of substantial harm to the public health. The FDA and other non-U.S. government agencies may also assess civil or criminal penalties against us, our officers or employees and impose operating restrictions on a company-wide basis. The FDA may also recommend prosecution to the U.S. Department of Justice. Any adverse regulatory action, depending on its magnitude, may restrict us from effectively marketing and selling our products and limit our ability to obtain future pre-market clearances or PMAs, and could result in a substantial modification to our business practices and operations. These potential consequences, as well as any adverse outcome from government investigations, could have a material adverse effect on our business, results of operations, financial condition, and cash flows.

In addition, in the U.S. device manufacturers are prohibited from promoting their products other than for the uses and indications set forth in the approved product labelling, and any failure to comply could subject us to significant civil or criminal exposure, administrative obligations and costs, and/or other potential penalties from, and/or agreements with, the federal government.

Governmental regulations outside the U.S. have, and may continue to, become increasingly stringent and common. In the EU, for example, Reg MDR, when it enters into full force in 2020, will include significant additional premarket and post-market requirements. Penalties for regulatory non-compliance could be severe, including fines and revocation or suspension of a company's business license, mandatory price reductions and criminal sanctions. Future laws and regulations may also have a material adverse effect on us.

Modifications to our marketed products may require new clearances or approvals, and may require us to cease marketing or recall the modified products until required clearances or approvals are obtained.

An element of our strategy is to continue to upgrade our products, add new features and expand clearance or approval of our current products to new indications. We have made modifications to our products in the past and may make additional modifications in the future that we believe do not or will not require additional clearances or approvals. No assurance can be given that regulators will agree with any of our decisions not to seek clearance or approval.

If regulators require us to cease marketing and to recall a modified device until we obtain a new clearance or approval, our business, financial condition, operating results and future growth prospects could be materially adversely affected. Any recall requirement that we seek additional clearances or approvals could result in significant delays, fines, increased costs associated with modification of a product, loss of revenue and potential operating restrictions imposed by regulators.

If our marketed medical devices are defective or otherwise pose safety risks, the FDA and similar non-U.S. governmental authorities could require their recall, or we may initiate a recall of our products voluntarily.

The FDA and similar non-U.S. governmental authorities may require the recall of commercialized products in the event of material deficiencies or defects in design or manufacture or in the event that a product poses an unacceptable risk to health. Manufacturers, on their own initiative, may recall a product with material deficiency. We have initiated voluntary product recalls in the past. A future recall announcement could harm our reputation with customers and negatively affect our revenue.

A government-mandated recall or voluntary recall by us or one of our sales agencies could occur as a result of an unacceptable risk to health, component failures, manufacturing errors, design or labelling defects or other deficiencies or issues. Recalls of any of our products would divert managerial and financial resources and have an adverse effect on our financial condition and operating results. Any recall could impair our ability to produce our products in a cost-effective and timely manner. We also may be required to bear other costs or take other actions that may have a negative impact on our future revenue and our ability to generate profits. In the future, we may initiate voluntary withdrawal, removal or repair actions that we determine do not require notification as a recall. If the regulating authority disagrees with our determinations, it could require us to report those actions as recalls. In addition, the regulators could take enforcement action for failing to report the recalls when they were conducted.

In addition, depending on the corrective action we take to redress a device's deficiencies or defects, the regulators may require, or we may decide, that we need to obtain new approvals or clearances for the device before we market or distribute the corrected device. Seeking such approvals or clearances may delay our ability to replace the recalled devices in a timely manner. Moreover, if we do not adequately address problems associated with our devices, we may face additional regulatory enforcement action, including FDA warning letters, product seizure, injunctions, administrative penalties, or civil or criminal fines.

If our products cause or contribute to a death or a serious injury, or malfunction in certain ways, we will be subject to medical device reporting regulations, which can result in voluntary corrective actions or agency enforcement actions.

We are required to report to the FDA any incident in which our products have or may have caused or contributed to a death or serious injury or in which our product malfunctioned and, if the malfunction were to recur, would likely cause or contribute to death or serious injury. If we fail to report these events to the FDA within the required timeframes, or at all, the FDA could take enforcement action against us. Any adverse event involving our products could result in future voluntary corrective actions, such as recalls or customer notifications, or agency action, such as inspection, mandatory recall or other enforcement action. Any corrective action, whether voluntary or involuntary, or litigation, will require the dedication of our time and capital, distract management from operating the business, and may harm our reputation and financial results.

Our products are the subject of clinical studies conducted by us, our competitors, or other third parties, the results of which may be unfavorable, or perceived as unfavorable, and could have a material adverse effect on our business, financial condition, and results of operations.

As a part of the regulatory process of obtaining marketing clearance or approval for new products and modifications to or new indications for existing products, we conduct and participate in numerous clinical studies with a variety of study designs, patient populations, and trial endpoints. Unfavourable or inconsistent clinical data from existing or future clinical studies conducted by us, by our competitors, or by third parties, or the market's or global regulatory bodies' perception of this clinical data, may adversely impact our ability to obtain product clearances or approvals, our position in, and share of, the markets in which we participate, and our business, financial condition, and results of operations. Success in pre-clinical testing and early clinical studies does not always ensure that later clinical studies will be successful, and we cannot be sure that later studies will replicate the results of prior studies. Clinical studies must also be conducted in compliance with Good Clinical Practice requirements administered by the FDA and other non-U.S. regulatory authorities, and global regulatory bodies may undertake enforcement action against us based on a failure to adhere to these requirements. Any delay or termination of our clinical studies will delay the filing of product submissions and, ultimately, our ability to commercialize new products or product modifications. It is also possible that patients enrolled in clinical studies will experience adverse side effects that are not currently part of the product's profile, which could inhibit further marketing and development of such products.

Consolidation in the healthcare industry could have an adverse effect on our revenue and results of operations.

Many healthcare industry companies, including medical device companies, are consolidating to create new companies with greater market power. As the healthcare industry consolidates, competition to provide goods and services to industry participants will become more intense. These industry participants may try to use their market power to negotiate price concessions for medical devices that incorporate components we produce. Increasing pricing pressures as a result of industry consolidation could have an adverse effect on our revenue, results of operations, financial position and cash flows.

The global medical device industry is highly competitive and we may be unable to compete effectively.

We are in highly competitive markets characterized by increasingly complex products that are expensive to develop and manufacture with significant price competition. In the product lines in which we compete, we face a mixture of competitors ranging from large manufacturers with multiple business lines to small manufacturers that offer a limited selection of specialized products. Development by other companies of new or improved products, processes, or technologies, as discussed above, may make our products or proposed products less competitive. In addition, we face competition from providers of alternative medical therapies such as pharmaceutical companies. Competitive factors include:

- product quality, reliability and performance;
- product technology;
- breadth of product lines and product services;
- ability to identify new market trends;
- customer support;
- price;
- capacity to recruit engineers, scientists and other qualified employees; and
- reimbursement approval from governmental payors and private healthcare insurance providers.

Shifts in industry market share can occur as a result of product issues, physician advisories, safety alerts, and publications about our products. The importance of product quality, product

efficacy, and quality systems in the medical device industry cannot be overstated. In the current environment of managed care, consolidation among healthcare providers, increased competition, and declining reimbursement rates, we are increasingly required to compete on the basis of price. In order to continue to compete effectively, we must continue to create, invest in, or acquire advanced technology, incorporate this technology into our proprietary products, obtain regulatory approvals in a timely manner, and manufacture and successfully market our products. Additionally, we may experience design, manufacturing, marketing or other difficulties that could delay or prevent our development, introduction or marketing of new products or new versions of our existing products. As a result of such difficulties and delays, our development expenses may increase and, as a consequence, our results of operations could suffer.

Operational Risks

The UK's vote in favor of withdrawing from the EU could lead to increased market volatility and make it more difficult for us to do business in Europe or have other adverse effects on our business.

In June 2016, voters in the UK approved leaving the EU (commonly referred to as "Brexit"). On 29 March 2017, the UK government delivered to the European Council notice of its intention to leave the EU and the effective date of the UK withdrawal from the EU was 29 March 2019, which has been extended by the European Council in agreement with the UK. At the date of this Annual Report, there is a real possibility that the UK will exit the EU without a withdrawal agreement. If no agreement is reached, there will be a period of considerable uncertainty in the relationship between the UK and the EU. Even if a withdrawal agreement is reached, we anticipate the withdrawal could, among other outcomes, result in the deterioration of economic conditions, volatility in currency exchange rates and increased regulatory complexities.

There are many ways in which our business could be affected by this event, only some of which we can identify at this time. Depending on the final terms of Brexit, we could face new regulatory costs and challenges. For instance, the UK could lose access to the single EU market and to the global trade deals negotiated by the EU on behalf of its members which may result in increased trade barriers that could make our doing business worldwide more difficult. A decline in trade could affect the attractiveness of the UK as a global investment center and, as a result, could have a detrimental impact on UK growth. Although we have an international customer base, we could be adversely affected by reduced growth and greater volatility in the UK economy. In addition, currency exchange rates in the Pound Sterling and the Euro with respect to each other and the U.S. dollar have already been adversely affected by Brexit. Should this foreign exchange volatility continue, it could cause volatility in our financial results.

We and several of our wholly-owned subsidiaries that are domiciled either in the UK, various countries in the EU, or in the U.S. are party to intercompany transactions and agreements under which we receive various tax reliefs and exemptions in accordance with applicable international tax laws, treaties and regulations. Material changes in certain treaties applicable to our transactions and agreements, or any other significant changes in the competitive, political, legal, regulatory, reimbursement or economic environment where we conduct international operations may have a material impact on our business and our consolidated financial condition or results of operations.

Cyber-attacks or other disruptions to our information technology systems could lead to reduced revenue, increased costs, liability claims, fines, harm to our competitive position and loss of reputation.

We are increasingly dependent on our own sophisticated information technology systems and those of third parties to operate our business, and certain products of ours include integrated software and information technology. We rely on information technology systems to collect and process customer orders, manage product manufacturing and shipping and support regulatory compliance, and we routinely process, store and transmit large amounts of data, including sensitive personal information, protected health information and confidential business information. Many of our products incorporate software and information technology that allow patients and physicians to be connected and collect data regarding a patient and the therapy he or she is receiving, or that otherwise allow the products or services to operate as intended. The secure processing, maintenance and transmission of this information is critical to our operations but the size and complexity of our products and the information technology systems on which we rely make them vulnerable to cyber-attacks, breakdown, interruptions, destruction, loss or compromise of data, obsolescence or incompatibility among systems or other significant disruptions. Unauthorized persons routinely attempt to access our products or systems in order to disrupt, disable or degrade such products or services, or to obtain proprietary or confidential information. Any such breach could compromise our networks and the information stored there could be accessed, publicly disclosed, lost or stolen. In addition, we continue to grow, in part, through new business acquisitions. As a result of acquisitions, we may face risks due to implementation, modification, or remediation of controls, procedures and policies relating to data privacy and cybersecurity at the acquired company. We continue to consolidate and over time integrate the number of systems we operate, and to upgrade and expand our information system capabilities for stable and secure business operations.

We have programs, processes and technologies in place to attempt to prevent, detect, contain, respond to and mitigate security-related threats and potential incidents. We

undertake ongoing improvements to our systems, connected devices and information-sharing products in order to minimize vulnerabilities, in accordance with industry and regulatory standards. The techniques used to obtain unauthorized access change frequently and can be difficult to detect, and because integration from the merger of Sorin and Cyberonics, two global cross-border companies, takes time and entails risks pertaining to the integration of disparate information technology systems, anticipating, identifying or preventing these intrusions or mitigating them if and when they occur is challenging and makes us more vulnerable to cyber-attacks than other companies not similarly situated. There can be no assurance that our process of consolidating, protecting, upgrading and expanding our systems and capabilities, continuing to build security into the design of our products, and developing new systems to keep pace with continuing changes in information processing technology will be successful or that additional systems issues will not arise in the future. Any significant breakdown, intrusion, interruption, corruption or destruction of these systems, as well as any data breaches, could have a material adverse effect on our business.

If we are unable to maintain secure, reliable information technology systems and prevent disruptions, outages, or data breaches, we may suffer regulatory consequences in addition to business consequences. Our worldwide operations mean that we are subject to laws and regulations, including data protection and cyber-security laws and regulations, in many jurisdictions. For example, if we are in breach of the GDPR's requirement that we ensure a level of security, both in terms of technology and other organizational measures, appropriate to the risk that the confidentiality, integrity or availability of personally identifiable data is compromised, we could be subject to fines and enforcement actions. Despite programs to comply with such laws and regulations, there is no guarantee that we will avoid enforcement actions by governmental bodies. Enforcement actions may be costly and interrupt regular operations of our business. In addition, there is a trend of civil lawsuits and class actions relating to breaches of consumer data or other cyber-attacks. While we have not been named in any such lawsuits, if a substantial breach or loss of data occurs, we could become a target of civil litigation or government enforcement actions.

We are currently involved in litigation that could adversely affect our business and financial results, divert management's attention from our business, and subject us to significant liabilities.

We are involved in various litigation matters that may adversely affect our financial condition and may require us to devote significant resources to our defense of these claims.

Such litigation involves a class action complaint in the U.S. District Court for the Middle District of Pennsylvania, federal multi-district litigation in the U.S. District Court for the Middle District of Pennsylvania and cases in various state courts and jurisdictions outside the U.S. relating to our 3T heater-cooler product. As of the date of this Annual Report, we are aware of approximately 210 filed and unfiled claims worldwide, with the majority of the claims filed in various federal or state courts throughout the U.S. The complaints generally seek damages and other relief based on theories of strict liability, negligence, breach of express and implied warranties, failure to warn, design and manufacturing defect, fraudulent and negligent misrepresentation/concealment, unjust enrichment and violations of various state consumer protection statutes. In the fourth quarter of the year ended 31 December 2018, we recognized a $294.0 million litigation provision related to these claims.

Although we are defending these matters vigorously, we cannot predict with certainty the outcome or effect of any claim or other litigation matter, and there can be no assurance as to the ultimate outcome of any litigation or proceeding. Litigation may have a material adverse effect on us because of potential adverse outcomes, defense costs, the diversion of our management's resources, availability of insurance coverage and loss of reputation.

The failure to comply with anti-bribery laws could materially adversely affect our business and result in civil and/or criminal sanctions.

Our operations are subject to anti-corruption laws, including the UK Bribery Act, FCPA and other anti-corruption laws that apply in countries where we do business. The UK Bribery Act, FCPA and these other laws generally prohibit us and our employees and intermediaries from bribing, being bribed or making other prohibited payments to government officials or other persons to obtain or retain business or gain some other business advantage. Because of the predominance of government-administered healthcare systems in many parts of the world outside the U.S., many of our customer relationships are potentially subject to such laws.

We are, therefore, exposed to the risk that our employees, independent contractors, principal investigators, consultants, vendors, independent sales agents and distributors may engage in fraudulent or other illegal activity in violation of these laws. It is not always possible to identify and deter misconduct by our employees and other third parties, and the precautions we take to detect and prevent this activity may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from governmental investigations or other actions or lawsuits stemming from a failure to be in compliance with such laws or regulations.

Global enforcement of anti-corruption laws has increased substantially in recent years, with more frequent voluntary self-disclosures by companies, aggressive investigations and enforcement proceedings by governmental agencies, and assessment of significant fines and penalties against companies and individuals. In addition, we cannot predict the nature, scope or effect of future regulatory requirements to which our international operations might be subject or the manner in which existing laws might be administered or interpreted. Any alleged or actual violations of these regulations may subject us to government scrutiny, severe criminal or civil sanctions and other liabilities, including exclusion from government

contracting or government healthcare programs, and could negatively affect our business, reputation, operating results and financial condition.

Product liability claims could adversely impact our consolidated financial condition and our earnings and impair our reputation.

Our business exposes us to potential product liability risks that are inherent in the design, manufacture and marketing of medical devices. In addition, many of the medical devices we manufacture and sell are designed to be implanted in the human body for long periods of time. Component failures, manufacturing defects, design flaws or inadequate disclosure of product-related risks or product-related information with respect to these or other products we manufacture or sell could result in an unsafe condition or injury to, or death of, a patient. The occurrence of such an event could result in product liability claims or a recall of, or safety alert relating to, one or more of our products. We have elected to self-insure with respect to a significant portion of our product liability risks and also hold global insurance policies to cover a portion of future losses. Product liability claims or product recalls in the future, regardless of their ultimate outcome, could have a material adverse effect on our business and reputation and on our ability to attract and retain customers for our products, and losses from product liability claims in the future could exceed our product liability insurance coverage and lead to a material adverse effect on our financial condition.

The amount of potential losses resulting from the 3T heater-cooler litigation is expected to greatly exceed the amount of our product liability insurance coverage and our insurance coverage may also be insufficient to cover future losses.

The amount of potential losses resulting from the 3T heater-cooler litigation matters is likely to greatly exceed the amount of our product liability insurance. In the fourth quarter of the year ended 31 December 2018, we recognized a $294.0 million litigation provision related to our 3T heater-cooler litigation as further described under "Note 13. Commitments and Contingencies" in our consolidated financial statement in this Annual Report . Total coverage under our product liability insurance policies is $32.9 million, once the self-retention limit of $11.0 million is met. To fund the litigation liability provision, on 25 February 2019 we obtained commitment letters from lenders to provide additional aggregate borrowing capacity of $350 million, an amount sufficient to cover the litigation liability provision.

If we become subject to any future liability claims, whether related to product liability or other losses, our insurance coverage may not be adequate to cover those claims. Losses from unanticipated claims could have a material adverse impact on our consolidated earnings, financial condition, and/or cash flows.

The recognition of the litigation provision liability and any future large unanticipated liabilities may raise material uncertainty about our ability to continue as a going concern.

The Company recorded a $294.1 million litigation provision liability based on managements' best estimate, of which $161.9 million is anticipated to be paid during 2019 and the majority of the remainder is expected to be paid in the first half of 2020. On 26 March 2019, we entered into a $350 million facility agreement with Bank of America Merrill Lynch International DAC, Barclays Bank PLC, BNP Paribas (London Branch) and Intesa Sanpaolo S.P.A.

If we become subject to future unanticipated large liability claims, such claims could raise material uncertainty about our ability to continue as a going concern and our reputation, stock price and financial condition may be materially adversely affected.

Quality problems with our processes, goods, and services could harm our reputation for producing high-quality products and erode our competitive advantage, sales, and market share.

Quality is extremely important to us and our customers due to the serious and costly consequences of product failure. Our quality certifications are critical to the marketing success of our goods and services. If we fail to meet these standards, our reputation could be damaged, we could lose customers, and our revenue and results of operations could decline. Aside from specific customer standards, our success depends generally on our ability to manufacture to exact tolerances precision-engineered components, subassemblies, and finished devices from multiple materials. If our components fail to meet these standards or fail to adapt to evolving standards, our reputation as a manufacturer of high-quality components will be harmed, our competitive advantage could be damaged, and we could lose customers and market share.

We are subject to environmental laws and regulations and the risk of environmental liabilities, violations and litigation.

Our operations involve the use of substances regulated under environmental laws, primarily those used in manufacturing and sterilization processes. Certain environmental laws assess liability on current or prior owners or operators of real property for the costs or investigation, removal or remediation of hazardous substance at their properties or at properties on which they have disposed of hazardous substances. In addition, a governmental authority may seek to hold us liable for successor liability violations committed by any companies in which we invest or that we acquire. In addition to cleanup actions brought by governmental authorities, private parties could bring personal injury or other claims due to the presence of, or exposure to, hazardous substances. The ultimate cost of site cleanup and timing or future cash outflows is difficult to predict, given the uncertainties regarding the extent of the

required cleanup and the interpretation of applicable laws and regulations. The costs of complying with current or future environmental protection and health and safety laws and regulations, or liabilities arising from past or future releases of, or exposures to, hazardous substances, may exceed our estimates, or have a material adverse effect on our business, results of operations, financial condition and cash flows.

Our R&D efforts rely on investments and investment collaborations, and we cannot guarantee that any previous or future investments or investment collaborations will be successful.

Our strategy to provide a broad range of therapies to restore patients to fuller, healthier lives requires a wide variety of technologies, products and capabilities. The rapid pace of technological development in the medical industry and the specialized expertise required in different areas of medicine make it difficult for one company alone to develop a broad portfolio of technological solutions. As a result, we also rely on investments and investment collaborations to provide us access to new technologies both in areas served by our existing or legacy businesses as well as in new areas.

We expect to make future investments where we believe that we can stimulate the development of, or acquire new technologies and products to further our strategic objectives and strengthen our existing businesses. Investments and investment collaborations in and with medical technology companies are inherently risky, and we cannot guarantee that any of our previous or future investments or investment collaborations will be successful or will not materially adversely affect our consolidated earnings, financial condition or cash flows.

We are substantially dependent on patent and other proprietary rights and failing to protect such rights or to be successful in litigation related to our rights or the rights of others may result in our payment of significant monetary damages and/or royalty payments, negatively impact our ability to sell current or future products, or prohibit us from enforcing our patent and other proprietary rights against others.

We rely on a combination of patents, trade secrets, and non-disclosure and non-competition agreements to protect our proprietary intellectual property, and we will continue to do so. Physician customers have historically moved quickly to new products and new technologies, and intellectual property rights, particularly patents and trade secrets, play a significant role in product development and differentiation. We operate in an industry characterized by extensive patent litigation, and intellectual property litigation is inherently complex and unpredictable. Patent litigation can result in significant damage awards and injunctions that could prevent our manufacture and sale of affected products or require us to pay significant royalties in order to continue to manufacture or sell affected products. While we intend to defend against any threats to our intellectual property, these patents, trade secrets, or other agreements may not adequately protect our intellectual property.

Further, pending patent applications may not result in patents being issued to us. Patents issued to or licensed by us in the past or in the future may be challenged or circumvented by competitors and such patents may be found invalid, unenforceable or insufficiently broad to protect our technology and may limit our competitive advantage. Third parties could obtain patents that may require us to negotiate licenses to conduct our business, and the required licenses may not be available on reasonable terms or at all. We also rely on non-disclosure and non-competition agreements with certain employees, consultants and other parties to protect, in part, trade secrets and other proprietary rights. We cannot be certain that these agreements will not be breached, that we will have adequate remedies for any breach, that others will not independently develop substantially equivalent proprietary information, or that third parties will not otherwise gain access to our trade secrets or proprietary knowledge.

The laws of certain countries in which we market some of our products do not protect our intellectual property rights to the same extent as laws in the U.S., which could make it easier for competitors to capture market position in those countries. Competitors also may harm our sales by designing products that mirror the capabilities of our products or technology without infringing our intellectual property rights. If we are unable to protect our intellectual property, it could have a material adverse effect on our business, financial condition, cash flows and reputation.

Risks related to the reduction or interruption in supply and an inability to develop alternative sources for supply may adversely affect our manufacturing operations and related product sales.

We maintain manufacturing operations in six countries located throughout the world and purchase many of the components and raw materials used in manufacturing these products from numerous suppliers in various countries. Any problem affecting a supplier (whether due to external or internal causes) could have a negative impact on us.

In a few limited cases, specific components and raw materials are purchased from primary or main suppliers (or in some cases, a single supplier) for reasons related to quality assurance, cost-effectiveness ratio and availability. While we work closely with our suppliers to ensure supply continuity, we cannot guarantee that our efforts will always be successful. Moreover, due to strict standards and regulations governing the manufacture and marketing of our products, we may not be able to quickly locate new supply sources in response to a supply reduction or interruption, with negative effects on our ability to manufacture our products effectively and in a timely fashion.

We are subject to the risks of international economic and political conditions.

We develop, manufacture, distribute and sell our products globally and we intend to continue to pursue growth opportunities worldwide. Our international operations are subject to risks that are inherent in conducting business overseas and under non-U.S. laws, regulations and customs. These risks include possible nationalization, exit from the EU, expropriation, importation limitations, violations of U.S. or local laws, including, but not limited to, the UK Bribery Act, FCPA, pricing restrictions, and other restrictive governmental actions. Our profitability and operations are, and will continue to be, subject to a number of risks and potential costs, including:

- local product preferences and product requirements;
- longer-term receivables than are typical in the EU or the U.S.;
- difficulty enforcing agreements;
- creditworthiness of customers;
- less intellectual property protection in some countries outside the EU or the U.S.;
- trade protection measures and import and export licensing requirements;
- different labor regulations and workforce instability;
- higher danger of terrorist activity, war or civil unrest;
- selling our products through distributors and agents;
- political and economic instability; and
- the risks further described above in the section entitled *"The failure to comply with anti-bribery laws could materially adversely affect our business and result in civil and/or criminal sanctions."*

We transact business in numerous countries around the world and expect that a significant portion of our business will continue to take place in international markets. Consolidated financial statements are prepared in our functional currency, while the financial statements of each of our subsidiaries are prepared in the functional currency of that entity. Accordingly, fluctuations in the exchange rate of the functional currencies of our foreign currency entities against our functional currency will impact our results of operations and financial condition. Although we may elect to hedge certain foreign currency exposure, we cannot be certain that the hedging activity will eliminate our currency risk.

In addition, in many of the countries where we operate, employees are covered by various laws and/or collective bargaining agreements that endow them, through their local or national representatives, with the right to be consulted in relation to specific issues, including the downsizing or closing of departments and staff reductions. The laws and/or collective bargaining agreements that are applicable to these agreements could have an impact on our flexibility, as they apply to programs to redefine and/or strategically reposition our activities. Our ability to implement staff downsizing programs or even temporary interruptions of employment relationships is predicated on the approval of government entities and the consent of labor unions. A negative response from a works council or union-organized work stoppages by employees could have a negative impact on our business.

Our debt instruments require us to comply with affirmative covenants and specified financial covenants and ratios.

Certain restrictions and covenants in our debt instruments could affect our ability to operate and may limit our ability to react to market conditions or to take advantage of potential business opportunities as they arise. For example, such restrictions could adversely affect our ability to finance our operations, make strategic acquisitions, investments or alliances, restructure our organization or finance capital needs. Additionally, our ability to comply with these covenants and restrictions may be affected by events beyond our control, such as prevailing economic, financial, regulatory and industry conditions. If any of these restrictions or covenants is breached, we could be in default under one or more of our debt instruments, which, if not cured or waived, could result in acceleration of the indebtedness under such agreements and cross defaults under our other debt instruments. Any such actions could result in the enforcement of our lenders' security interests and/or force us into bankruptcy or liquidation, which could have a material adverse effect on our financial condition and results of operations.

Our inability to integrate recently acquired businesses or to successfully complete and integrate future acquisitions could limit our future growth or otherwise be disruptive to our ongoing business.

From time to time, we acquire businesses and expect to pursue acquisitions in support of our strategic goals. There can be no assurance that acquisition opportunities will be available on acceptable terms or at all, or that we will be able to obtain necessary financing or regulatory approvals to complete potential acquisitions. The success of any acquisition, investment or alliance may be affected by a number of factors, including our ability to properly assess and value the potential business opportunity or to successfully integrate any businesses we may acquire into our existing business. The integration of the operations of acquired businesses requires significant efforts, including the coordination of information technologies, human resources, R&D, sales and marketing, operations, manufacturing, legal, compliance and finance. These efforts result in additional expenses and involve significant amounts of management's time that cannot then be dedicated to other projects. Failure to manage and coordinate the growth of the combined company successfully could also have an adverse impact on our business. In addition, we cannot be certain that our investments, alliances and acquired businesses will become profitable or remain so. If our investments, alliances or acquisitions are not successful, we may record unexpected impairment charges.

We have incurred and will continue to incur certain transaction and merger-related costs in connection with the merger between Sorin and Cyberonics.

We have incurred and expect to continue to incur a number of non-recurring direct and indirect costs associated with the merger between Sorin and Cyberonics. These costs and expenses include fees paid to financial, legal and accounting advisers, filing fees, printing expenses and other related charges as well as ongoing expenses related to facilities and systems consolidation costs, severance payments and other potential employment-related costs, including payments remaining to be made to certain Sorin and Cyberonics executives. During the years ended 31 December 2018 and 2017 we incurred $24.4 million and $15.5 million in merger and integration expenses, respectively. We expect additional expenses in the future for the integration of the two merged businesses. We have incurred and expect to continue to incur integration expenses related to systems integration, organization structure integration, finance, synergy and tax planning, certain re-branding efforts, and restructuring efforts related to our intent to leverage economies of scale, eliminate overlapping corporate expenses and streamline distributions, logistics and office functions in order to reduce overall costs. While we assumed a certain level of expenses in connection with the transaction, there are many factors beyond our control, including unanticipated costs that could affect the total amount or the timing of these expenses. Although we expect that the benefits of the merger will offset the transaction expenses and implementation costs over time, this net benefit may not be achieved in the near term or at all.

We may incur impairments of intangible assets and goodwill, primarily acquired in acquisitions, including the merger between Sorin and Cyberonics.

During the year ended 31 December 2017, we recorded a pre-tax, non-cash loss on impairment of our Cardiac Rhythm Management reporting unit goodwill, which we acquired in the merger of Sorin and Cyberonics, of $36.9 million, which is included within discontinued operations in our consolidated statement of (loss) income. As of 31 December 2018, the carrying value of our net intangible assets and goodwill totalled $1.7 billion, which represents 68.4% of our total assets. As of 31 December 2017, the carrying value was $1.3 billion, which represented 53.9% of our total assets.

We review, when circumstances warrant, the carrying amounts of our intangible assets to determine whether those carrying amounts continue to be recoverable in accordance with U.S. generally accepted accounting principles. Significant negative industry or economic trends, disruptions to our businesses, significant unexpected or planned changes in the use of assets, divestitures and market capitalization declines, among other events, may result in impairments to goodwill and other intangible assets. Future impairments could significantly affect reported financial results.

As our shares have been delisted from the London Stock Exchange, the City Code on Takeovers and Mergers (the "City Code") no longer applies to us and we, and our shareholders, will therefore not have the benefit of the protections that the City Code affords.

In February 2017, we announced that we had made applications (i) to the UK Financial Conduct Authority for the cancellation of the standard listing of our ordinary shares of £1 per share on the Official List of the UK Listing Authority and (ii) to the London Stock Exchange plc (the "LSE") to cancel the admission to trading of the shares on the main market of the LSE (together, the "Cancellation"). In connection with the Cancellation, we also decided to terminate our UK domestic depositary interest facility. Trading of our shares on the LSE ceased from and after the close of business on 4 April 2017.

The Panel on Takeovers and Mergers determined that the City Code no longer applies to us indicating, among other things, that we and our shareholders would not have the benefit of the protections the City Code affords, including, but not limited to, the requirement that a person who acquires an interest in shares carrying 30% or more of the voting rights in us must make a cash offer to all other shareholders at the highest price paid in the 12 months before the offer was announced.

Changes in tax laws or exposure to additional income tax liabilities could have a material impact on our financial condition and results of operations.

We are subject to income taxes as well as non-income based taxes, in the U.S., the UK, the EU and various other jurisdictions. No assurances can be given as to what our worldwide effective corporate tax rate will be because of, among other things, uncertainty regarding the tax regulations and laws, enactment and enforceability thereof and policies of the jurisdictions where we operate. Our actual effective tax rate may vary from our expectations or from historical trends and that variance may be material. Our effective tax rates could be affected by changes in the mix of earnings in countries with differing statutory tax rates, changes in the valuation of deferred tax assets and liabilities or changes in tax laws or their interpretation. On 22 December 2017, the Tax Cuts and Jobs Act (the "Tax Act") was signed into U.S. law which provided numerous amendments to the Internal Revenue Code of 1986, as amended (the "IRC"). The Tax Act significantly changed U.S. corporate income tax laws by, among other things, reducing the U.S. corporate income tax rate to 21%, which commenced in 2018. The U.S. Treasury Department has issued proposed regulations with regard to the Tax Act, and further final regulations and state conformity are pending, which may also impact our effective tax rate. We are also subject to ongoing tax audits in various non-U.S. jurisdictions. Tax authorities may disagree with certain positions we have taken and assess additional taxes. We believe that our accruals reflect the probable outcome of known contingencies. However, there can be no assurance that we will accurately predict the outcomes of ongoing audits, and the actual outcomes of these audits could have a material impact on our consolidated statement of (loss) income or financial condition.

Risks from Residency and Jurisdiction of Incorporation

The IRS may not agree with the conclusion that we should be treated as a foreign corporation for U.S. federal tax purposes, and we may be required to pay substantial U.S. federal income taxes.

We believe that under current law, we are treated as a foreign corporation for U.S. federal tax purposes because we are a UK incorporated entity. Although we are incorporated in the UK, the U.S. Internal Revenue Service (the "IRS") may assert that we should be treated as a U.S. corporation (and, therefore, a U.S. tax resident) for U.S. federal tax purposes pursuant to Section 7874 of the IRC ("Section 7874"). For U.S. federal tax purposes, a corporation is considered a tax resident in the jurisdiction of its organization or incorporation, except as provided under Section 7874. Subject to the discussion of Section 7874 below, because we are a UK incorporated entity, we would be classified as a foreign corporation (and, therefore, a non-U.S. tax resident) under these rules. Section 7874 provides an exception under which a foreign incorporated entity may, in certain circumstances, be treated as a U.S. corporation for U.S. federal tax purposes.

For us to be treated as a foreign corporation for U.S. federal tax purposes under Section 7874, in connection with the merger of Sorin and Cyberonics, either (i) the former stockholders of Cyberonics must own (within the meaning of Section 7874) less than 80% (by both vote and value) of our shares by reason of holding shares of Cyberonics common stock, or (ii) we must have substantial business activities in the UK after the merger.

We believe that because the former stockholders of Cyberonics own (within the meaning of Section 7874) less than 80% (by both vote and value) of our shares by reason of holding shares of Cyberonics common stock, the test set forth above to treat us as a foreign corporation was satisfied in connection with the merger. However, the IRS may disagree with the calculation of the percentage of our shares deemed held by former holders of Cyberonics common stock by reason of being former holders of Cyberonics common stock due to the calculation provisions laid out under Section 7874 and accompanying regulations (the "Section 7874 Percentage"). The final regulations relating to calculating the Section 7874 Percentage are new and subject to interpretation and thus it cannot be assured that the IRS will agree that the ownership requirements to treat us as a foreign corporation were met. In addition, there have been legislative proposals to expand the scope of U.S. corporate tax residence, including by potentially causing us to be treated as a U.S. corporation if our management and control and affiliates were determined to be located primarily in the U.S. The applicable U.S. Treasury Regulations were finalised on 12 July 2018, and we continue to believe that we will be treated as a foreign corporation for U.S. federal tax purposes. If we were to be treated as a U.S. corporation for U.S. federal income tax purposes, we could be subject to substantially greater U.S. tax liability than currently contemplated as a non-U.S. corporation.

The IRS may not agree with the conclusion that Section 7874 does not limit Cyberonics' and its U.S. affiliates' ability to utilize their U.S. tax attributes and does not impose an excise tax on gain recognized by certain individuals.

If the Section 7874 Percentage is calculated to be at least 60% but less than 80%, Section 7874 imposes a minimum level of tax on any "inversion gain" of a U.S. corporation (and any U.S. person related to the U.S. corporation) after the acquisition. Inversion gain is defined as (i) the income or gain recognized by reason of the transfer of property to a foreign related person during the 10-year period following the Cyberonics merger, and (ii) any income received or accrued during such period by reason of a license of any property by the U.S. corporation to a foreign related person. The effect of this provision is to deny the use of certain U.S. tax attributes (including net operating losses and certain tax credits) to offset U.S. tax liability, if any, attributable to such inversion gain. In addition, the U.S. Treasury Department issued final regulations that further limited benefits of certain post-combination transactions for combinations resulting in a Section 7874 Percentage of at least 60% but less than 80%.

Additionally, if the Section 7874 Percentage is calculated to be at least 60% but less than 80%, Section 7874 and related regulations would impose an excise tax under Section 4985 of the IRC ("Section 4985 Excise Tax") on the gain recognized by certain "disqualified individuals" (including officers and directors of Cyberonics) on certain Cyberonics stock-based compensation held thereby at a rate equal to 15%. If the Section 4985 Excise Tax is applicable, the compensation committee of the Cyberonics board determined that it is appropriate to provide such individuals with a payment with respect to the excise tax, so that, on a net after-tax basis, they would be in the same position as if no such excise tax had been applied.

We believe the Section 7874 Percentage following the combination of Cyberonics and Sorin was less than 60%. As a result, we believe that (i) Cyberonics and its U.S. affiliates will be able to utilize their U.S. tax attributes to offset their U.S. tax liability, if any, resulting from certain subsequent specified taxable transactions, and (ii) "disqualified individuals" will not be subject to the Section 4985 Excise Tax. However, the final regulations relating to calculating the Section 7874 Percentage are new and subject to interpretation, and thus it cannot be assured that the IRS will agree that the Section 7874 Percentage following the combination of Cyberonics and Sorin was less than 60%.

We may not qualify for benefits under the tax treaty entered into between the UK and the U.S.

We believe that we operate in a manner such that we are eligible for benefits under the tax treaty entered into between the UK and the U.S.; however, our ability to qualify for such benefits will depend upon the requirements contained in such treaty. Our failure to qualify for benefits under the tax treaty entered into between the UK and the U.S. could result in adverse tax consequences to us.

The 2016 U.S. Model Income Tax Convention released by the U.S. Treasury Department would reduce potential tax benefits with respect to us if the Section 7874 Percentage is calculated to be at least 60% but less than 80% by imposing full withholding taxes on payments pursuant to certain financing structures, distributions from our U.S. subsidiaries and payments pursuant to certain licensing arrangements. If the proposed treaty is enacted with applicability to us, it would result in material reductions in the benefit of qualifying for a treaty.

We believe that we operate so as to be treated exclusively as a resident of the UK for tax purposes, but the relevant tax authorities may treat us as also being a resident of another jurisdiction for tax purposes.

We are a company incorporated in the UK. Current UK law provides that we will be regarded as being a UK resident for tax purposes from incorporation and shall remain so unless (a) we are concurrently resident in another jurisdiction (applying the tax residence rules of that jurisdiction) that has a double tax treaty with the UK and (b) there is a tiebreaker provision in that tax treaty, which allocates exclusive residence to that other jurisdiction.

Based on our management and organizational structure, we believe that we should be regarded as resident exclusively in the UK from our incorporation for tax purposes. However, because this analysis is highly factual and may depend on future changes in our management and organizational structure, there can be no assurance regarding the final determination of our tax residence. Should we be treated as resident in a country or jurisdiction other than the UK, we could be subject to taxation in that country or jurisdiction on our worldwide income and we may be required to comply with a number of material and formal tax obligations, including withholding tax and/or reporting obligations provided under the relevant tax law, which could result in additional costs and expenses for us, as well as our shareholders, lenders and/or bondholders.

As an English public limited company, certain capital structure decisions will require shareholder approval, which may limit our flexibility to manage our capital structure.

We are a public limited company incorporated under the laws of England and Wales. Under English law, our board of directors may only allot shares with the prior authorization of shareholders. Our articles of association currently authorize the allotment of additional shares for a period of five years up to an aggregate of approximately 9.8 million shares. English law also generally provides shareholders with pre-emptive rights when new shares are issued for cash; which rights may be excluded by shareholders. Our articles currently exclude pre-emptive rights in relation to the allotment of shares for cash. In addition, English law also generally prohibits a public company from re-purchasing its own shares without the prior approval of shareholders. The approval of the allotment of additional shares, the exemption of statutory pre-emptive rights and the restriction on re-purchase of shares must all be renewed by shareholders at least every five years. We cannot provide any assurance that these authorizations will always be approved, which could limit our ability to issue equity and thereby adversely affect the holders of our securities.

Transfers of our shares, other than ones effected by means of the transfer of book-entry interests in the Depository Trust Company ("DTC"), may be subject to UK stamp duty or UK stamp duty reserve tax ("SDRT").

Transfers of our shares effected by means of the transfer of book-entry interests in DTC are not subject to UK stamp duty or SDRT. However, if a shareholder holds our shares directly rather than through DTC, any transfer of shares could be subject to UK stamp duty of SDRT at a rate of 0.5% of the consideration paid for the transfer and certain issues or transfers of shares to depositories or into clearance services are charged at a rate of 1.5% of the consideration paid for the transfer. The transferee generally pays the UK stamp duty or SDRT. The potential for UK stamp duty or SDRT could adversely affect the trading price of our shares.

The facilities of DTC are a widely used mechanism that allow for rapid electronic transfers of securities between the participants in the DTC system, which include many large banks and brokerage firms. Our shares are at present, subject to certain conditions, generally eligible for deposit and clearing within the DTC system. However, DTC generally has discretion to cease to act as a depository and clearing agency for our shares. If DTC determines at any time that our shares are not eligible for continued deposit and clearance within its facilities, then we believe that our shares would not be eligible for continued listing on a U.S. securities exchange and trading in our shares would be disrupted. While we would pursue alternative arrangements to preserve the listing and maintain trading, any such disruption could have a material adverse effect on the trading price of our shares

This Strategic Report was approved by the Board of Directors on 30 April 2019

Damien McDonald

Chief Executive Officer & Director

DIRECTORS' REPORT

Directors

The directors of the Company, who held office in the year ended 31 December 2018 were as follows:

Chairman

Mr. Daniel J. Moore

Executive Director

Mr. Damien McDonald

Non-executive directors

Mr. Francesco Bianchi

Mr. Stefano Gianotti[(1)]

Mr. William Kozy[(2)]

Mr. Hugh Morrison

Mr. Alfred Novak

Dr. Sharon O'Kane

Dr. Arthur Rosenthal

Ms. Andrea Saia

(1) Mr. Stefano Gianotti resigned as a non-executive director with effect from 23 March 2018.
(2) Mr. William Kozy was elected by our shareholders via ordinary resolution during our 2018 Annual General Meeting of shareholders on 12 June 2018.

Directors' indemnities

Each director is covered by appropriate directors' and officers' liability insurance, and there are also deeds of indemnity in place between the Company and each current and former director. These were executed in 2015 except for the deeds of indemnity in respect of Ms. Andrea Saia, who was appointed by the Board to fill a vacancy on 27 July 2016, Mr. Damien McDonald, who was appointed by the Board effective 1 January 2017 and Mr. William Kozy who was elected by the shareholders effective 12 June 2018. These deeds were executed in 2016, 2017 and 2018 respectively. These deeds of indemnity provide for the Company to indemnify the directors in respect of any proceedings brought by third parties against them personally in their capacity as directors of the Company. The Company would also fund on-going costs in defending a legal action as they are incurred rather than after judgement has been given. In the event of an unsuccessful defence in an action against them in a criminal or civil action, individual directors would be liable to repay defence costs to the extent funded by the Company. In respect of any investigations or actions taken by a regulatory authority, individual directors would be liable to repay defence costs to the extent funded by the Company if that regulatory authority has determined that the relevant director has acted fraudulently, been grossly negligent, or has engaged in wilful misconduct in relation to that claim.

Company details and branches outside the UK

The Company is a public limited company incorporated in England and Wales with registered number 09451374. The Company's registered address is 20 Eastbourne Terrace, London, England W2 6LG.

The Company has one branch outside the UK: LivaNova Plc (Italian Branch) in Italy.

Political donations

The Company has not made any political donations, or incurred any political expenditure, in the period under review. In addition, the Company has not made any contributions to a non-EU political party during the period under review. Moreover, we have not sought shareholder approval in relation to political donations.

Dividends

No dividend has been proposed during, or in respect of, the course of the year under review and the Company has never declared a dividend. The Company has no immediate intention to declare and pay dividends.

Share Re-purchases

In 2016, shareholders approved a plan for the repurchase of Ordinary shares off-market, i.e. on Nasdaq. In 2018, LivaNova re-purchased 500,333 of its Ordinary shares of £1.00 nominal value each, at an average price of $99.91 per share, for a total of $50,000,000. All shares were subsequently cancelled. The Board believes such purchase to be in the best interest and to the corporate benefit of shareholders generally.

Financial risk management objectives/policies and hedging arrangements

Please refer to "Note 4. Financial Risk Management" in the consolidated Financial Statements for information on LivaNova's financial risk management objectives/policies and hedging arrangements.

Post-Balance Sheet Events

Credit Facility

On 26 March 2019, the Company completed a $350 million debt facility with Bank of America Merrill Lynch, Barclays, BNP Paribas and Intesa Sanpaolo. The facility matures in March 2022 and includes certain financial covenants. Borrowings under the facility bear interest at a rate of LIBOR plus 1.6% for borrowings in U.S. dollars and EURIBOR plus 1.4% for euro-denominated borrowings.

Settlement Agreement Related to the 3T Heater-Cooler Device

Under the terms of the agreement and subject to certain conditions, including acceptance of the settlement by individual claimants, the Company has agreed to a settlement framework that provides for a comprehensive resolution of the personal injury cases pending in the multi-district litigation in U.S. federal court, a related class action case pending in U.S. federal court, as well as certain cases in state courts across the U.S. The agreement provides for a total payment of up to $225 million to resolve the claims covered by this settlement, with up to $135 million to be paid no earlier than July 2019 and the remainder in January 2020. LivaNova established a reserve of $294 million in the fourth quarter of fiscal year 2018 in connection with the 3T Heater-Cooler litigation generally.

Future developments/Research and Development

Details of the activities of the Company in the field of research and development are set out in the Strategic Report.

Greenhouse Gas

We report on our Greenhouse Gas emission in our Strategic Report.

Statement of disclosure to the UK statutory auditor

In accordance with section 418 of the Companies Act, each director at the date of this Directors' Report confirms that:

- so far as he or she is aware, there is no relevant audit information of which the Auditor is unaware; and
- he or she has taken all the steps he or she ought to have taken as director to make himself or herself aware of any relevant audit information and to establish that the Auditor is aware of that information.

This confirmation is given and should be interpreted in accordance with the provisions of section 418 of the Companies Act.

Auditors

PricewaterhouseCoopers LLP, the Company's Statutory Auditors, has indicated its willingness to continue in office, and on the recommendation of the Audit and Compliance Committee and in accordance with section 489 of the Companies Act 2006, a resolution to re-appoint it will be proposed at the 2019 AGM.

Directors' responsibility statement

The directors are responsible for preparing the UK Annual Report, the Directors' Remuneration Report and the financial statements in accordance with applicable law and regulations.

The Companies Act requires the directors to prepare financial statements for each financial year. The directors have prepared financial statements in accordance with IFRS as adopted by the European Union. Under the Companies Act, the directors must not approve the financial statements unless they are satisfied that they give a true and fair view of the state of affairs of the LivaNova group and the Company, and of the profit or loss of the LivaNova group and the Company for that period. In preparing these financial statements, the directors are required to:

- select suitable accounting policies and then apply them consistently;
- make judgements and accounting estimates that are reasonable and prudent;
- state whether applicable IFRS as adopted by the European Union have been followed, subject to any material departures disclosed and explained in the financial statements;
- prepare the financial statements on the going concern basis unless it is inappropriate to presume that the Company will continue in business.

The directors are responsible for keeping adequate accounting records that are sufficient to show and explain the LivaNova group and the Company's transactions and disclose with reasonable accuracy at any time the financial position of the LivaNova group and the Company and enable them to ensure that the financial statements and the Directors' Remuneration Report comply with the Companies Act 2006 and, as regards the LivaNova group and the Company's financial statements, Article 4 of the IAS Regulation. They are also responsible for safeguarding the assets of LivaNova and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities.

The directors are responsible for the maintenance and integrity of the Company's website. Legislation in the United Kingdom governing the preparation and dissemination of financial statements may differ from legislation in other jurisdictions.

This Directors Report was approved by the Board of Directors on 30 April 2019

Catherine Moroz
Company Secretary

REMUNERATION REPORT

Dear Shareholder,

As the Chairman of the Compensation Committee, I am pleased to present LivaNova's Directors' Remuneration Report for the year ended 31 December 2018.

During 2018, LivaNova recorded top-line growth, exceeding our adjusted financial targets and showcasing the continued success of our growth strategy. Some of the highlights included a strong growth of our Neuromodulation business in all regions and record shipments of our heart-lung machines, marking another successful year for our Cardiovascular franchise.

2018 was without doubt a transformative year for LivaNova, marked by the sale of our Cardiac Rhythm Management business and the acquisition of ImThera and TandemLife. We also made significant investments in our future by expanding our product pipeline, innovating next-generation products and funding studies for our products and our strategic portfolio initiatives.

The Compensation Committee continued to take steps to ensure that the Company's remuneration arrangements remained aligned to our strategy and strongly linked to our long-term performance. The Remuneration Report provides a detailed overview of our director remuneration structure, its alignment to the business strategy and to the remuneration of the the wider workforce. It also sets out any payments approved by the Committee based on the Company's financial performance in 2018

Employee Share Plan

The Committee was also pleased with the level of support in favour of the LivaNova Global Employee Share Purchase Plan, which was approved by 99.47% of our shareholders at the 2018 AGM. We are confident that the employee share plan will help align the interests of employees with those of shareholders.

Remuneration Report/Say-on-Pay

We were also very pleased with the endorsement of LivaNova's compensation of its named executive officers (otherwise known as "US Say-on-Pay"), which was approved by 95.26% of the shareholders at our 2018 AGM. The Committee will continue to ensure that performance outcomes and any consequent payments are aligned with business performance and the growth transformation that LivaNova is currently undertaking.

Review of Non-Executive Director and Committee Fees

The remuneration for the non-executive directors remained flat from 2015 until 2018.

Remuneration Policy in 2019

The Committee reviewed its Remuneration Policy which is included in this Remuneration Report and which will be put to a vote at our 2019 AGM.

In this new policy, we aim to encourage directors to perform in a consistent, responsible way with the focus on long-term value creation for our shareholders. We strive to remain competitive in order to retain key talent, which is essential to LivaNova's successful operation.

The Committee will continue to monitor the development of best practice relating to remuneration. We are committed to ensuring that our remuneration is strongly linked to our strategy so that we continue to deliver sustainable value for our shareholders.

As Chairman of the Compensation Committee, I am committed to ensuring an open dialogue with our shareholders. If you have any questions about remuneration generally, or the presentation or the content of this report, please contact me via mail to c/o Company Secretary, LivaNova PLC, 20 Eastbourne Terrace, London W2 6LG, United Kingdom or via email at company.secretariat@livanova.com

Arthur Rosenthal, Ph.D.
Chairman of the Compensation Committee
30 April 2019

How We Establish Executive Compensation Levels

In making executive compensation determinations, we rely on several factors to set compensation elements and compensation targets consistent with our executive compensation program objectives, which include:

Assessment of Individual Performance

Individual performance has a strong impact on compensation.

CEO

Following discussion with the CEO, the Compensation Committee sets the CEO's performance objectives for the year. At the end of the year, the Compensation Committee and the chairman of the Board meet in executive session to assess the CEO's performance against his performance objectives, his contribution to our company's performance, his ethics and integrity and other leadership attributes.

Assessment of Company Performance

The Compensation Committee establishes specific, objectively measurable company performance objectives that the Board, the Compensation Committee and management believe will help drive shareholder value. Achievement or not of the performance objectives determines substantially all of the payouts under the short-term incentive plan and the lapsing or not of forfeiture restrictions on performance-based equity incentive awards.

Benchmarking Analysis

The Compensation Committee reviews peer-group data as a market check for compensation decisions, but does not base compensation targets on peer-group data alone.

- Individual Competitiveness. The Compensation Committee compares the overall pay of individual executives to the most relevant benchmarking data available from its independent advisor, Pearl Meyer. The executive director's pay is driven primarily by individual and company performance, as well as internal pay equity.
- The peer group data is used as a market check to compare individual pay to the broad middle range (25^{th} to 75^{th} percentile) of peer group pay. The Compensation Committee typically seeks to maintain base salary toward the middle of peer group pay, but will permit annual bonuses and long-term equity incentive awards to approach the upper end of the broad middle range when justified by individual and company performance.

Overall Competitiveness

The Compensation Committee uses aggregated market data as a reference point to ensure that executive compensation falls within the broad middle range of comparable pay at peer companies.

2018 Remuneration at a Glance

Total remuneration for 2018 for our sole Executive Director (audited)

	Basic Salary and Fees ($'000)[1]	Taxable Benefits ($'000)[2]	Annual Bonus ($'000)[3]	Service-Based Awards ($'000)[4]	Long-Term Incentive Awards ("UK LTIP") ($'000)[5]	Pension Contributions ($'000)[6]	Total ($'000)
Damien McDonald - 2018	**951**	**256**	**999**	**5,838**	**1,196**	**259**	**9,499**
Damien McDonald - 2017	848	1,154	848	1,000	–	215	4,065

* *The currency conversion rates used are for 2018-£/$ =1.333872 (average currency rate for the period 1 January 2018 to 31 December 2018).*

(1) *In 2018, Damien McDonald was paid a base salary of £713,125 per annum ($ 951,218).*

(2) *In 2018, the taxable benefits column line includes: (i) an accommodation allowance of £127,500 ($170,069), a car allowance of £17,750 ($23,676), (ii) school allowance of £27,158 ($36,225), and (iii) health insurance of £19,700 ($26,277). The significant difference as compared to 2017 taxable benefits: reflects in principal the following: a one-time reimbursement of expenses related to 2017 for Mr. McDonald's purchase of a principal residence in the U.K. of £356,250 ($459,078), coupled with a gross up in the amount of £315,919 ($407,106) for taxes.*

(3) *The annual bonus is explained in the 'Short-Incentive Plan -executive director-audited information" below.*

(4)(5) *Because of LivaNova's strong US nexus (listing and shareholding base), its "Long-Term Incentive Plan" (the "LivaNova LTIP") includes service-based awards which have no performance requirement.and vest, subject to continued service, in tranches over one or more years or by cliff vesting. Due to the difference in design of the LivaNova LTIP and the typical UK LTIP and in order to provide optimal transparency, LivaNova has created a separate column for service-based awards. Amounts recorded in that column are equal to the full grant date value of the equity awards (whether RSUs or SARs. (In the event of SARs, because a SAR by definition has nil value at the moment of grant, LivaNova has recorded the grant value approved by the Compensation Committee).*

Service-based awards granted:

Awards approved in 2017:

- *On 5 May 2017, the Compensation Committee granted Mr. McDonald 53,409 performance and service-based RSUs. Of these 53,409 RSUs:*
  - *13,352 RSU had a performance condition. This performance condition was met on 1 March 2018 when LivaNova's share price reached a certain level and thus, the RSUs vested under the terms of the relevant award agreement in 2018. Because the performance occurred in a separate financial year (2018) from the grant (2017), the value of the 13,352 RSUs were recorded as UK LTIP with a value calculated using the share price of the date the performance condition was met (i.e. 1 March 2018 at $89.57 per share). This is reflected in the UK LTIP column for 2018.*
  - *The remaining 40,056 RSUs were service-based once the performance condition above had been achieved. The 40,056 would automatically vest, subject to Mr. McDonald's continued service, in three equal tranches on 5 May 2019, 2020 and 2021. Because these three tranches are service-based from the achievement of the performance condition on 1 March 2018, the full amount of 40,056 RSUs is recorded as a service-based award at the notional "grant" date value on 1 March 2018. The value of this award in the Service-Based Awards column for 2018 is thus $3,587,816.*
  - *Mr. McDonald's 2017 equity awards have been vested in this 2018 UK Annual Report. In the 2017 UK Annual Report, the above 53,409 RSUs were disclosed as long-term incentive plan awards. However, for the reasons set out in these footnotes 4 and 5, we believe that the approach set out herein is more appropriate and transparent and we have thus restated the amounts in accordance with this approach.*
  - *Also, on 5 May 2017, the Compensation Committee approved a $1,000,000 award in favour of Mr. McDonald and granted him 17,803 service-based RSUs. As these were service-based, they were recorded in the Service-Based Awards column in the year of grant (2017) at their grant date value ($1,000,000).*

Awards approved in 2018

- *On 15 March 2018, the Compensation Committee approved an award of service-based RSUs and SARs, each with a value of $1,125,000. Because these awards were service-based, they were recorded in the year of grant (2018) in the Service-Based Award column, at their grant date value. SARs technically have nil value at the moment they are granted (as their value is in the appreciation of the share price after grant). However, for greater transparency, LivaNova records the Compensation Committee-approved value ($1,125,000).*

(6) *In 2018, the Company contributed £10,000 ($13,339) into a personal pension plan administered by Aegon, and a further £193,942 ($258,693) was paid as cash in lieu of pension. (Mr. McDonald's service agreement entitles him to a pension contribution equal to 15% of the aggregate of his base salary and bonus. As cash in lieu entails a UK employers' national insurance charge in the amount of 13.8% of the cash in lieu, the cash paid is decreased by this amount in order that the payment by the Company remains relatively cost-neutral.)*

Short-term incentive plan – executive director (audited)

In April 2019, Damien McDonald received £749,046 ($999,131), an amount equal to 105% of his 2018 bonus opportunity. The performance objectives selected by the Committee for the 2018 bonus plan were as follows:

	Target Bonus as Percentage of Salary
Adjusted net sales objective	60%
Adjusted net profit objective	40%
ACHIEVEMENT OF BOTH PERFORMANCE OBJECTIVES	**100%**

The performance objectives for the short-term incentive program included an adjusted net sales objective, which was the adjusted net sales as reported by the Company at the Company's budgeted currency exchange rates, and an adjusted net profit objective, which was the adjusted non-GAAP (U.S. generally accepted accounting principles) net profit as reported by the Company.

The percentage achievement of the performance objectives was subject to scaling down by 16.67 percent for each 1 percent, or portion thereof, of underachievement, subject to an achievement of at least 97 percent (resulting in a minimum pay out at 50% of target), and was subject to scaling up by 7.5% for each 1 percent of overachievement up to an achievement of 110 percent (resulting in a maximum pay-out at 175% of target.

Given 2018 group net sales of $1,107 million in respect of a target of $1063.6 million (101.2%) and adjusted net profit of $186.6 million in respect of a target of $171.9 (106.2%) the 2018 short-term incentive plan would have resulted in a pay-out of 109.0% for the Group Net Sales Target and a pay-out of 146.7% for the Group Adjusted Net Income target. In order to better align our NEO pay-out in respect of corporate objectives with pay-out levels among other executives and employees in business franchises and functions where the pay-out were lower, the Compensation Committee exercised negative discretion and approved the pay-out of 105% of the target incentive.

Percentage change in remuneration of the Chief Executive Officer

The table below reflects a comparison between the percentage change in remuneration of the Chief Executive Officer between 2018 and 2017 in comparison with the other employees.

	Base salary change %	Benefits change %	Annual Cash Bonus change %
Chief Executive Officer	12%	(78)%	18%
Average for all employees	3%	10%	3%

The table above reflects a comparison of Mr. McDonald's remuneration in 2017 to his remuneration in 2018. The change in benefits reflects a one-time reimbursement of expenses related to 2017 for Mr. McDonald's purchase of a principal residence in the U.K. of £356,250 ($459,078), coupled with a gross up in the amount of £315,919 ($407,106) for taxes.

By comparison, the other employees received an average base salary increase of three percent. The U.K.-based employees received an average taxable benefit increase of 10%. Employees in countries outside the U.K. are excluded from this comparison given the many variations in benefits across different countries. Finally, the other employees received an average increase in annual bonus of three percent.

Single total figure on remuneration – Chairman and non-executive directors (audited)

	Basic Annual Fee ($'000)[4]		Additional Fee ($'000)[5]		Benefits ($'000)[1]		Total Emoluments ($'000)		Service-Based Share Awards ($'000)		Total ($'000)	
	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017	2018	2017
Daniel J. Moore	110	85	75	67	1	3	186	155	185	232	371	387
Hugh Morrison	110	85	36	36		2	146	123	110	138	256	261
Alfred J. Novak	110	85	23	23		2	133	110	110	138	243	248
Arthur L. Rosenthal	110	85	20	20		1	130	106	110	138	240	244
Francesco Bianchi	110	85	23	23	1	1	134	109	110	138	244	247
Stefano Gianotti[2]	28	85	2	6			30	91		138	30	229
Sharon O'Kane	110	85	15	15	1	1	126	101	110	138	236	239
Andrea Saia	110	85	15	15	2	1	127	101	110	138	237	239
William Kozy[3]	61		3		–		64	–	110	–	174	–

(1) The amounts refer to expenses reimbursement for the Directors to exercise their role that are considered taxable under UK tax legislation.

(2) Stefano Gianotti resigned on 23 March 2018 and therefore, only the first quarter of his fees were paid to him. His equity award was prorated and paid out in cash.

(3) William Kozy was appointed to LivaNova's Board following his election by shareholders at the 2018 AGM on 12 June 2018. His fees for the third quarter were prorated.

(4) In 2018, the Compensation Committee approved a reallocation by component (cash vs RSUs) of the total remuneration for our Non-Executive Directors ("NEDs") reducing the value of the service-based equity award by $25,000, whilst increasing the cash retainer payable by the same amount. This has not impacted the overall total compensation for our NEDS which remains unchanged since 2016. Each NED received the following fees and awards in 2018: i) a cash retainer in respect of Broad service of $110,000, plus an additional $75,000 for the Chairman;

(5) Cash amounts paid in addition to the basic retainer: $15,000 for each member of the Audit and Compliance Committee, plus an additional $15,000 for the chairperson of the committee; (iii) an additional cash retainer of $8,000 for each member of the Compensation Committee, plus an additional $12,000 for the chairperson of the Committee; (iv) an additional cash retainer of $6,000 for each member of the Nominating and Governance Committee, plus an additional $9,000 for the chairperson of the Committee; (v) an annual award of RSUs, granted on 15 June 2018 and vesting on 15 June 2019, having a value of $110,000, plus an additional value of $75,000 for the Chairman.

2018 LivaNova Long-Term Incentive Plan (the "LivaNova LTIP") (audited)

The LivaNova LTIP is comprised of both performance-based and service-based awards. The awards received by Mr. McDonald under the LivaNova LTIP are explained below:

Service-Based Restricted Stock Units – executive director

Mr. McDonald received 12,729 service-based RSUs vesting in equal or substantially equal amounts on each of the first four anniversaries of the grant date . The Committee determined the number of RSUs awarded by dividing one-fourth of the Award Value by the most recent closing price of an ordinary share of our stock on the Nasdaq as of the grant date and rounding down to the nearest whole unit.

Stock Appreciation Rights

Mr. McDonald received 41,512 stock appreciation rights vesting in equal or substantially equal amounts on each of the first four anniversaries of the grant date. The Committee determined the number of SARs awarded to each participant by dividing one-fourth of the Award Value by the Black-Scholes value of a SAR based on the Closing Price and rounding down to the nearest whole right.

Relative Total Shareholder Return Performance Stock Units

Mr. McDonald received 12,729 performance stock units subject to a relative total shareholder return market condition. The Committee determined the number of PSUs awarded to each participant by dividing one-fourth of the Award Value by the Closing Price and rounding down to the nearest whole unit. At the end of calendar year 2020, our rTSR for the three-year period 2018 through 2020 will be compared to the rTSR for a comparator group of 27 companies selected by the Committee on the advice of its compensation consultant, Pearl Meyer & Partners, and the number of shares of our stock actually delivered to the participants will be determined by the following chart, with linear interpolation applied between specified levels:

TSR Performance Percentile Rank	Percent Payout
≥90th	200%
80th	150%
50th	100%
30th	40%
<30th	0%

Three-Year Cumulative Adjusted Free Cash Flow Performance Stock Units

Mr. McDonald received 12,729 PSUs subject to achievement of a three-year cumulative adjusted free cash flow target. The Committee determined the number of PSUs awarded to each participant by dividing one-fourth of the Award Value by the Closing Price and rounding down to the nearest whole unit. At the end of 2020, cumulative adjusted free cash flow for the period 2018 through 2020 will be compared to the full cash flow target, and the number of shares of our stock actually delivered to the participants will be determined by the following chart, with linear interpolation applied between specified levels:

FCF Achievement Relative to FCF Target	Percent Payout
≥150%	200%
125%	150%
100%	100%
60%	20%
<60%	—%

The 2018 rTSR Peer Group includes:

ABIOMED, Inc.	Cantel Medical Corp.	Stryker Corporation
Intuitive Surgical, Inc.	NuVasive, Inc.	Haemonetics Corporation
Baxter International Inc.	CONMED Corporation	Globus Medical, Inc.
Invacare Corporation	ResMed Inc.	Teleflex Incorporated
Becton, Dickinson and Company	DexCom, Inc.	Hill-Rom Holdings, Inc.
Masimo Corporation	Smith & Nephew plc	Varian Medical Systems, Inc
Boston Scientific Corporation Plc	Edwards Lifesciences Corporation Steris Plc	Hologic, Inc.
Zimmer Biomet Holdings Inc	Integer Holdings Corporation	Wright Medical Group N.V.
		Integra LifeSciences Holdings Corp.

The following parameters will be used to determine rTSR for the three-year period ending 31 December 2020:

- Stock Price: 30 trading-day average closing prices as of the beginning and end of the performance period;
- Dividend Treatment: Dividend reinvestment approach (using ex-dividend date);
- Relative Performance Measurement:
- Calculate cumulative TSR for LivaNova and each of the benchmark companies,
- Compute LivaNova's discrete percentile rank, which is inclusive of LivaNova's TSR (Excel: *PERCENTRANK* function);
- Benchmark Group Governance:
- Measured against benchmark group at the beginning of the performance period,
- Companies acquired or delisted during the performance period are excluded.

2018 Interest Schemes Awards (audited)

Director	Face Value of Award ($)[1]	No. of Shares Subject to the Award	Closing Share Price on Date of Award (For Face Value Calculation) ($)	Expiry of Performance Period	Performance Criteria
Damien McDonald	1,124,989	12,729	88.38	31 December 2020	Relative Total Shareholder Return Performance Stock Unit
Damien McDonald	1,124,989	12,729	88.38	31 December 2020	Cumulative Adjusted Free Cash Flow PSU
Damien McDonald	1,124,989	12,729	88.38	N/A	Time-Based Vesting (RSUs)
Damien McDonald	1,124,989	41,512	88.38	N/A	Time-Based Vesting (SARs)
Damien McDonald	Total Face Value 2018 Award				$4,500,000
Daniel J. Moore	184,940	1,762	104.96	N/A	Time-Based Vesting (RSUs)
Hugh Morrison	109,998	1,048	104.96	N/A	Time-Based Vesting (RSUs)
Alfred J. Novak	109,998	1,048	104.96	N/A	Time-Based Vesting (RSUs)
Arthur L. Rosenthal	109,998	1,048	104.96	N/A	Time-Based Vesting (RSUs)
Francesco Bianchi	109,998	1,048	104.96	N/A	Time-Based Vesting (RSUs)
Sharon O'Kane	109,998	1,048	104.96	N/A	Time-Based Vesting (RSUs)
Andrea Saia	109,998	1,048	104.96	N/A	Time-Based Vesting (RSUs)
William Kozy	109,998	1,048	104.96	N/A	Time-Based Vesting (RSUs)

(1) Face Value of RSU award calculated using the closing market price of LivaNova share on Nasdaq at the date of grant.

Payments made to past directors (audited)

The Company made payments to André-Michel Ballester and Brian Sheridan who were no longer directors in 2018.

The Company paid Mr. Ballester a total of £145,092 in 2018 for consultancy fees and expenses. In September 2018, Mr. Ballester exercised SARs granted on 19 October 2015, these values are not reported as they represent 2015 remuneration.

The Company paid Mr. Sheridan €120,000 in 2018 for consultancy fees.

Payments made for loss of office (audited)

The Company made no payments for loss of office in the period under review.

Executive and Non-Executive Directors' Shareholdings (audited)

To align the interests of our Executive and Non-Executive Directors to those of our shareholders, they are required to maintain significant shareholding of shares in LivaNova Plc on a voluntary basis. The directors believe that meaningful ownership of equity in the Company is an essential element in demonstrating the commitment of its leadership to its primary task of creating value for its shareholders. To further this belief, equity award programs have been established as part of the overall compensation plans for both officers and directors.

Shareholding Guidelines

	Requirement Measurement Dates	
Level	5 year-phase-in period from appointment	*(last day of each financial year thereafter)*
Executive Director (Chief Executive Officer)	5 x base salary	5 x base salary
Non Executive Directors	5 x yearly Board annual cash retainer	5 x yearly Board annual cash retainer

Share Ownership as of 31 December 2018

Director	Ordinary Shares	Ordinary Shares Underlying Stock Options[4]	Ordinary Shares Underlying SARs	Ordinary Shares Underlying RSUs
Damien McDonald[1]	50,818	–	172,182	125,084
Daniel J. Moore[2]	46,469	103,249	–	1,762
Hugh Morrison	944[3]	–	–	1,048
Alfred J. Novak	10,294	–	–	1,048
Arthur L. Rosenthal	18,039	–	–	1,048
Francesco Bianchi	944	–	–	1,048
Stefano Gianotti	1,830	–	–	–
Sharon O'Kane	3,673	–	–	1,048
Andrea Saia	2,422	–	–	1,048
William Kozy	–	–	–	1,048

(1) Of the 125,084 shares underlying RSUs, the vesting of 40,056 RSUs were subject to the achievement of performance conditions.

(2) The 46,469 Ordinary Shares include 2,586 Ordinary Shares held by DJM Family Partnership Ltd. of which Mr. Moore has indirect ownership. The 103,249 Ordinary Shares underlying Stock Options are 46,626 stock options with an exercise price of $51.90 and 56,623 Stock options with an exercise price of $57.39 granted respectively on 15 June 2013 and 15 June 2014 by Cyberonics, Inc. and then converted in LivaNova Stock options on 19 October 2015, date of the merger of Sorin S.p.a. and Cyberonics, Inc. that resulted into LivaNova PLC.

(3) 944 shares owned by Mr. Morrison are pledged as collateral in connection with a margin account.

(4) Dan Moore is the only Non-Executive director who holds Options, which have already vested and are exercisable. However, none of the 103,249 Options were exercised during the 2018 financial year.

None of our board members has reached any of the two measurement dates. However as of 31 December 2018, six of our board members, including our chief executive officer, have complied with the voluntary guidelines.

Relative importance of spend on pay (audited)

The following table sets out the total amounts spent in the year ended 31 December 2018 and the year ended 31 December 2017 on remuneration paid to employees and distributions to shareholders.

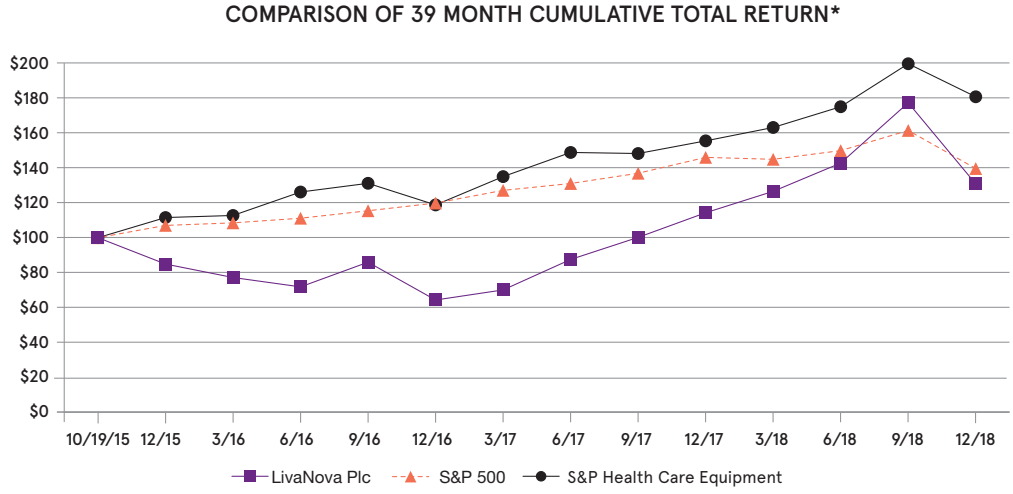
$ thousands	Year Ended 31 December 2018	Year Ended 31 December 2017	% change
Employee remuneration[1]	459,560	402,891	14%
Share buybacks	50,000	Nil	N/A
Dividend	Nil	Nil	–

(1) The Employee remuneration does not include the spend on pay related to employees in the CRM business franchise that are reflected as a component of the discontinued operations.

Total shareholder return

Performance graph

The graph below shows the Company's performance measured through total shareholder return on a holding of $100 in the Company's shares between 1 January 2018 and 31 December 2018, compared to the S&P 500 Index and the S&P Healthcare Equipment Index. LivaNova selected these indices as it felt they provided both a broader market benchmark together with a more proximate industry benchmark.



** $100 invested on 10/19/15 in stock or 9/30/15 in index, including reinvestment of dividends. Fiscal year ending December 31.*

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CEO Total Compensation

	Year Ended 31 December 2018	Year Ended 31 December 2017[1]	Year ended 31 December 2016[3]
Total single-figure remuneration (thousands $)	9,499	4,065	1,968
Annual bonus award (as a % of maximum)	60[2]	57	53.3
Vesting of long term performance awards (as a % of maximum)	100[4]	0	25

(1) The Total single-figure remuneration for 2017 was updated with the revaluation of the UK LTIP (see Single Figure table section).

(2) Damien McDonald received a pay-out of 105% which represents 60% of the maximum payable which was set at 175% of his base salary.

(3) The figures relating to the CEO total compensation for year ended 31 December 2016 are in respect of former CEO, Andre-Michel Ballester who resigned with effect from 31 December 2016.

(4) 13,353 performance-based RSUs vested during the financial year ended 31 December 2018 which represents 100% of the maximum opportunity for vesting in the 2018 financial year. This is explained under note (4) and (5) of the Single Figure table.

Role of the Compensation Committee

Members

The Chairman of the Compensation Committee is Arthur L. Rosenthal, Ph.D., and the other members of the Compensation Committee are Alfred J. Novak and Francesco Bianchi, all of whom are non-executive directors that the Company considers to be independent. All have served on the Committee since 19 October 2015. The Committee's terms of reference are available on the Company's website at *www.livanova.com*.

The Compensation Committee has authority to determine and approve the corporate goals and objectives applicable to the compensation of the CEO and to assess the CEO's performance annually in light of these goals and objectives and then to determine and approve the CEO's compensation level based on this evaluation. The CEO is not present during discussions about his own compensation. The Compensation Committee also has authority to determine and approve the compensation of all other executive officers. The committee is also entrusted with reviewing and approving incentive plans and equity-based plans that apply on a broader basis but which could also apply to the CEO and other executive officers.

Role of Compensation Consultant

The Compensation Committee has the sole authority to retain and terminate a compensation consultant to assist with its responsibilities, as well as the sole authority to approve the consultant's fees, which we then pay. Our executive officers do not discuss compensation matters with the Compensation Committee's consultant, except as needed to respond to questions from the consultant or to understand the data underlying the consultant's reports. The Compensation Committee's consultant does not provide other services for us or any of our executive officers or other employees. When making compensation decisions in 2018, our Compensation Committee considered advice and data provided by Pearl Meyer & Partners, LLC.

The Compensation Committee's consultant does not provide services for the Company or any of our officers. Since 2016, the Compensation Committee has engaged the services of Pearl Meyer & Partners, LLC, an experienced compensation consulting firm, to advise the committee on executive compensation matters. The Compensation Committee selected Pearl Meyer based on its global expertise. The Committee considered the following factors and determined Pearl Meyer to be an independent and conflict-free advisor to the Company:

- the provision of other services to the Company by the advisor's employer;
- the amount of fees received from the Company by the advisor's employer, as a percentage of the total revenue of the advisor's employer;
- the policies and procedures of the advisor's employer that are designed to prevent conflicts of interest;
- any business or personal relationship of the advisor with a member of the Committee;
- any stock of the Company owned by the advisor; and
- any business or personal relationship of the advisor or the advisor's employer with an executive officer of the Company.

In 2018, Pearl Meyer provided support on the following projects:

- director compensation analysis and benchmarking
- peer group analysis
- executive equity compensation analysis

The Company paid Pearl Meyer a total of $97,897 for the services indicated above for 2018, computed on the basis of Pearl Meyer's hourly rates for services rendered, multiplied by the number of hours required to generate the reports and including administrative service fees.

Service Contracts

Our non-executive directors do not have service contracts, however they are elected for a one-year term. Our one executive director does have a service contract but there is no anticipated termination date.

Statement of Voting at Prior AGM

At the 2018 AGM held on 12 June 2018, votes on the advisory vote to approve the directors' remuneration report were as follows:

To approve, on an advisory basis, the UK directors' remuneration report in the form set out in the Company's UK Annual Report and Accounts ("UK Annual Report") for the period ended 31 December 2017

	For	Against	Abstentions
Votes	38,812,581	1,825,803	25,196
Percentages %	95.45	4.49	0.06

LivaNova's Remuneration Policy was last approved by shareholders at the 2016 AGM and is available at *www.livanova.com*. We will propose an update Remuneration Policy to shareholders for approval at the 2019 AGM, a copy of which is included in this Annual Report, along with an illustration of how the Policy will be applied for the 2019 financial year.

To approve the directors' Remuneration Policy

	For	Against	Abstentions
Votes	32,806,406	2,699,096	1,842,015
Percentages %	87.84	7.22	4.9

This Remuneration Report was approved by the Board of Directors on

30 April 2019

Arthur Rosenthal, Ph.D.

Chairman of the Compensation Committee

Directors' Remuneration Policy for Approval at the 2019 AGM

The Directors' remuneration policy (the "Policy") will take legal effect from the conclusion of the 2019 annual general meeting ("AGM") subject to shareholder approval at the 2019 AGM.

The Company's Compensation Committee considers remuneration policy annually to ensure that it remains aligned with business needs and is appropriately positioned relative to the market. However, in the absence of exceptional or unexpected circumstances that may necessitate a change to the Policy, there is currently no intention to revise the Policy more frequently than every three years as required by the UK Companies Act 2006. Any change would require shareholder approval. Once the Policy is approved, the Company will make remuneration payments only to current or prospective directors, or payments for loss of office, if the payment is in line with the Policy or if the shareholders otherwise approve such payment by ordinary resolution. As to specific amounts to pay under the Policy, the Compensation Committee under powers bestowed by its charter, reviews both non-executive director remuneration and the remuneration of all officers under Section 16 of the US Securities and Exchange Act of 1934, as amended, which includes the Company's only executive director. In the latter case, the Compensation Committee has final authority to determine the executive director's remuneration, but in the former case, the Compensation Committee makes recommendations to the Board, which then makes the final decision on non-executive remuneration.

The Policy has not changed materially since 2016; modest changes are set out in the future policy tables. Any existing remuneration commitments or contractual arrangements, such as historical share awards or the provision of equipment such as laptops, tablets and mobile phones agreed prior to the approval and implementation of this Policy, will be honoured in accordance with their original terms.

The Company's policy is to ensure that directors are fairly rewarded with regard to the responsibilities undertaken and to consider comparable pay levels and structures in the United States, the United Kingdom and the international medical devices industry.

Executive Director Future Policy Table

Our executive compensation program, which applies to our executive director and other executive officers, aims to recruit and retain key executive officers responsible for our success and to help motivate these officers to enhance long-term shareholder value. To achieve these ends, the Compensation Committee's executive compensation decisions are based on the following principal objectives:

Providing a competitive compensation package that attracts, motivates, and retains talented executive officers with the skills and experience to ensure our long-term success. We have included multiple pay and reward vehicles that work together to achieve our overall compensation objectives. These vehicles deliver a competitive package that focuses on rewarding performance and retaining talent, while maintaining alignment with shareholder interests.

Rewarding individual performance while ensuring a meaningful link among our operational performance, shareholder interests, and the total compensation received by our executive officers. A substantial portion of each executive officer's compensation is based on the collective performance of our management team, as measured by the achievement of specific, key company objectives. The emphasis on overall performance is designed to focus our executive officers, working as a team, on a common purpose, using shared performance standards aligned with shareholder interests.

Balancing the components of compensation so that short-term (annual) and long-term performance objectives are recognized. Our success depends on our executive officers being focused on the critical strategic and tactical objectives, both short-term and long-term, that lead to our success as a company. The components of our compensation package, coupled with the performance objectives, align our executive compensation with our business objectives. The design of the program, the selected performance objectives, and the timing of awards and pay-outs are all intended to drive business performance and increase shareholder returns.

The compensation components, their link with strategy, operation, maximum opportunity under each component, performance measures, and commentary on whether the component is new in this policy are set out in the table below:

Link to Strategy	Operation	Maximum Opportunity	Performance Measures	New Component?
	Base Salary			
The annual base salary is an important part of the total compensation package and is intended to reflect the executive director's position, duties and responsibilities. Base salary helps balance the incentive portions of the compensation program and thereby provide stability and reduce the incentive for excessive risk-taking.	• The base salary of our only executive director, Mr McDonald, with effect from 1 April 2019 is £731,500. The factors listed below will be taken into consideration when making increases to base salary and when appointing a new executive director. • Factors considered by the Compensation Committee in determining base salary levels and subsequent increases include: – The individual's role, experience, tenure and performance responsibilities, including any recent changes in those responsibilities. – Strategic importance of the position. – Independently sourced data for relevant comparator companies. – Market conditions. – Changes in size, value or complexity of the Company. – Compensation (and changes in compensation) for other members of senior management. – External advice relating to any of the foregoing. • Salaries for any new appointment of an executive director will be set in accordance with the recruitment policy set out elsewhere in this Policy. • Salaries are normally reviewed annually by the Compensation Committee with any increase applying from 1 April of each year. • Salaries are normally paid in the currency of the executive director's country of residence during the employment.	There is no formal maximum limit as we do not feel it is appropriate to set one.	The overall performance of the Company is a key consideration when determining salary increases.	No material change.
	Benefits			
Designed to attract and retain executive directors with the capability of driving the Company's corporate strategy.	• Benefits may vary depending on the personal choices, country of residence and situation of the executive director. • Benefits that may be offered include, but are not limited to: – Private medical insurance for the executive director and his/her family. – Life insurance. – Income protection (i.e. long-term incapacity/disability cover). – Critical illness cover. – Childcare vouchers. – Company car and/or cash car allowance. – Holiday and sick pay. – Directors' and officers' insurance. – Accommodation allowance. – Relocation benefits, including initial moving costs for the executive director and his/her dependents and household goods and contribution to legal and stamp duty costs associated with the purchase of a home in the UK. – School fees allowance. – Hotel accommodation in London for the purposes of attending multi-day Board-related and/or executive leadership team meetings if the executive director lives >20 miles from such location. – Such other expenses properly incurred in the discharge of director duties. – Use of a mobile phone and tablet for occasional personal use (which under HMRC regulations is not a taxable benefit.) – Gym membership Tax on benefits is borne by the executive director except where an arrangement, such as a UK "Pay-as-You-Earn ("PAYE") Settlement Agreements ("PSAs") with the UK tax authority, HM Revenue & Customs, is in place with the Company; No tax gross-ups will be provided.	There is no formal maximum limit as benefits costs can fluctuate depending on changes in provider cost and individual circumstances. Details of current benefits and costs are set out in the remuneration report. The Company will strive not to exceed market levels.	N/A	No material change

Link to Strategy	Operation	Maximum Opportunity	Performance Measures	New Component?
	Pension			
Designed to attract and retain executive directors with the capability of driving the Company's corporate strategy.	Pension contributions by the Company are based on the aggregate of the executive director's base salary and short-term incentive (bonus). ● US: The Company maintains a qualified 401(k) plan and a non-qualified deferred compensation plan ("NQDCP") that enables eligible US employees, including any executive directors, to save for retirement through a tax-advantaged combination of employee and Company contributions. 401(k) and NQDCP contributions are matched by the employer within certain limits applicable to all eligible employees. ● UK: The Company will contribute a percentage of salary to a defined contribution plan subject to any relevant statutory cap. The executive director has the option to take the same amount in cash subject to normal income tax and national insurance deductions. Global: the executive director is eligible for appropriate equivalent arrangements in line with other executive-level employees.	Statutory limits apply for qualified plans in the US and the UK. Pension contributions by the Company within and outside of such plans will be limited to 25 % of the base salary and short term incentive.	N/A	No material change.
	Short-Term Incentive (Cash Bonus)			
● Incentivize the delivery of stretching, near-term business targets based on the Company's business strategy ● Link between performance and reward and drive the creation of further shareholder value.	Financial and/or non-financial targets are set at the start of the year by the Compensation Committee, and bonus levels are determined by the Compensation Committee based on performance against those targets. ● Selection of short-term incentive measures reflects the delivery of the Company's key strategic priorities in the shorter term. Such measures may include the following: – a growth measure (e.g.,net earnings, net sales, net income, earnings per share). – an investment return measure (e.g.,return on assets, capital, shareholder's equity, sales or total shareholder return). – an efficiency measure (e.g.,gross or net operating margin,costs, reductions in costs and cost control measures. – a product development measure (e.g., product design, clinical study, or regulatory or commercialization milestone.) any of which may be measured in absolute terms or as compared to any incremental increase or decrease or as compared to results of a peer group or to market performance indices or indicators. ● Achievement of financial and non-financial targets is verified by each of the Compensation Committee and the Audit and Compliance Committee. ● The Compensation Committee may apply judgment in making appropriate adjustments to bonus outcomes to ensure they reflect underlying business performance. ● The Compensation Committee has ultimate discretion to determine the structure and settlement methods of the short-term incentive (including as to whether any bonus is paid in cash or in other forms such as shares or options.) ● The Company has the right to amend, reduce, hold back, defer, claw back and alter the structure of any payments in certain circumstances including in order to comply with applicable law, regulation and governance guidelines that regulate or govern executive pay from time to time.	The maximum bonus opportunity is 200% of base salary.	Based on a combination of financial and/or non-financial targets, with the majority of the bonus assessed against financial measures. The weighting between different measures will be determined each year according to business priorities.	No material changes

Link to Strategy	Operation	Maximum Opportunity	Performance Measures	New Component?
	LivaNova Long-Term Incentive Plan			
Promote the success of the Company by aligning the individual interests of the executive directors to those of the Company's shareholders over a longer period	• Annual awards under the Company's 2015 Incentive Award Plan or such other shareholder-approved plan that replaces this plan. • Awards may be granted in the form of options, SARs, RSUs(including PSUs) and other-share- and cash-based awards. • Awards may be granted annually, and awards may be subject to either time-based and/or performance -based vesting over a period of three or more years, with either cliff or tranche vesting. • The number of RSUs/PSUs is determined by dividing the award value by the most recent closing price of an ordinary share of the Company's stock on the NASDAQ Stock Market and rounding down to the nearest full unit. The number of SARs is calculated using the Black-Scholes model for the value of one SAR. • The date of the award is established pursuant to a policy setting predetermined equity award grant dates (as published by the Company on a Form 8-K filed by the Company with the US Securities and Exchange Commission). • The Company has the right to amend, reduce, hold back, defer, claw back and alter the structure of any payments in certain circumstances including in order to comply with applicable law, regulation and governance guidelines that regulate or govern executive pay from time to time. • The value of an equity award to be granted to an executive director will be reviewed on an annual basis in light of the factors considered by the Compensation Committee set out above under "Base Salary." • Selection of long-term incentive measures for non-time-vesting awards reflects the delivery of the Company's key strategic priorities in the longer term. Such measures may include the following, typically excluding measures used for the short-term incentive: – a growth measure (e.g.,net earnings, net sales, net income, earnings per share). – an investment return measure (e.g.,return on assets, capital, shareholder's equity, sales or total shareholder return). – an efficiency measure (e.g.,gross or net operating margin, costs, reductions in costs and cost control measures. – a product development measure (e.g., product design, clinical study, regulatory or commercialization milestone.) any of which may be measured in absolute terms or as compared to any incremental increase or decrease or as compared to results of a peer group or to market performance indices or indicators. • Bonus payments are typically paid in April based on the audited performance of the Company in the previous financial year (in respect of financial targets.) • Each of the Compensation and Audit and Compliance Committees verifies the relevant achievement of performance and market conditions before vesting of awards with performance or market-based conditions. • Voluntary stock ownership guidelines provide for stock ownership in an amount equal to at least five times base salary (for any executive director who is the Chief Executive Officer) and at least three times base salary (for any other executive director) within five years of appointment. • Executive directors are subject to the Company's Insider Trading Policy, which prohibits hedging and tightly circumscribes pledging. • Treatment of unvested awards on termination is governed by the terms of the 2015 Incentive Award Plan and individual award agreements which may make provision, inter alia, for vesting on retirement and upon a change-in-control.	Under the Company's shareholder-approved 2015 Incentive Award Plan, the maximum aggregate number of Shares with respect to one or more Awards that may be granted to any one person during any calendar year shall be 1,000,000 and the maximum aggregate amount of cash that may be paid in cash to any one person during any calendar year with respect to one or more Awards payable in cash shall be $10,000,000. Subject to the above, we do not have a fixed limit as to the size or value of equity-based compensation awards to executive directors in a year or in the aggregate over a period of years. However, we do seek to establish equity-based remuneration that is reasonably competitive to that offered by a set of comparable companies with whom we may compete for executive talent.	Time-vesting awards have no performance conditions, but performance awards will be subject to achievement of targets of the type set out in the columns to the left.	No material changes

Link to Strategy	Operation	Maximum Opportunity	Performance Measures	New Component?
	Share Plan ("ESPP")			
Promote the success of the Company by aligning the individual interests of employees to those of the Company's shareholders over a longer period.	Right to participate in the share plan on the same basis as all other employees. In the case of our current executive director, this is on the basis of UK-based employees.	Up to plan maximum, on the same basis as other employees in the same jurisdiction. Sub-plan maxima vary by jurisdiction.	N/A	New. The ESP was approved in 2018 with first enrolment in 2019.

Notes to the Executive Director Future Policy Table

1. 2019 Short-Term Incentive Plan (including performance framework)

On 21 February 2019, the Compensation Committee approved our 2019 annual short-term incentive plan (the "2019 STIP") in which our executive director participates.

Under the 2019 STIP, our executive director is eligible to receive a target bonus amount calculated as a percentage of base salary or as determined by the Compensation Committee. The current target bonus percentage for our executive director is 125% of base salary.

Payment of the target bonus amount is conditioned on achievement of certain financial and non-financial objectives, as described below.

FINANCIAL OBJECTIVES

Net Sales	Adjusted Net Income
45%	30%

"Net Sales" is defined as our net sales for 2019 at budgeted currency exchange rates, excluding net sales from any acquisitions in 2019. "Adjusted Net Income" is defined as our non-GAAP net income at reported currency exchange rates, after adjustments for the effects of acquisitions, divestitures, restructuring, integration, purchase price allocation and intangible amortization, special items, including 3T Heater Cooler remediation and significant and unusual litigation, including 3T Heater Cooler litigation, and equity compensation.

If the threshold for a financial objective is achieved, then the funding for that objective is scaled down or up for underachievement or overachievement, respectively, of the objective, as follows:

Percent Achievement of Sales Objective	Percent Achievement of Income Objective	Percent Funding for Objective
<97%	<90%	0%
97%	90%	50%
	Linear Interpolation: 1:16.67 (Sales) 1:5 (Income)	
100%	100%	100%
	Linear Interpolation: 1:7.50	
110%	110%	175%
>110%	>110%	175%

The non-financial objectives comprise product development projects that will drive revenue generation beyond 2019. The Design projects include two product development projects, each valued at 5% if the objectives are achieved within defined timelines. The Clinical projects are enrolment objectives for two clinical studies, each valued at 5%. The Regulatory projects include three regulatory submission objectives and a fourth project, together valued at 15%, and the Commercialization objective is a commercial launch objective valued at 5%. Together, the nine product development project objectives represent 25% of each executive's target bonus, but total 40% of base salary if all objectives are achieved, representing a potential overachievement of 15%.

NON-FINANCIAL OBJECTIVES

	Design	Clinical	Regulatory	Commercialization
Mr. McDonald	10%	10%	15%	5%

The table below shows the minimum and maximum achievement of the target short-term incentive payment under the 2019 STIP as a percentage of base salary.

Minimum	Target	Maximum
0%	125%	171%

The performance framework for the 2020, 2021, and 2022 short-term incentive plan cannot be anticipated at this time but will consist of targets in respect of measures listed on the future policy table.

2. LivaNova LTIP (including performance framework):

Pursuant to the 2019 LivaNova LTIP approved by the Compensation Committee on March 29, 2019 (the "2019 LivaNova LTIP"), the Compensation Committee granted our executive director an equity award value of $5,500,000 under the 2015 Incentive Award Plan.

A portion of the Award Value is allocated to each of four different types of equity awards, as explained below.

Service-Based Restricted Stock Units ($1,250,000)

The executive director received an award of service-based restricted stock units ("RSUs") vesting in equal or substantially equal amounts on each of the first four anniversaries of the grant date. The Compensation Committee determined the number of RSUs awarded to each participant by dividing $1,250,000 by the most recent closing price of an ordinary share of our stock on the NASDAQ Stock Market as of the grant date (the "Closing Price") and rounding down to the nearest whole unit. The Compensation Committee opted to provide this tranche of service-based awards (i.e., without any performance measures) as the value of the awards will move with the Company share price, which provides an incentive to deliver on the Company's long-term strategic objectives and is in line with our shareholders' interest. The multi-year vesting period for these awards is believed to be appropriate in order to have an executive director retain a long-term interest in the Company.

Stock Appreciation Rights ($1,250,000)

The executive director received an award of stock appreciation rights ("SARs") vesting in equal or substantially equal amounts on each of the first four anniversaries of the grant date. The Compensation Committee determined the number of SARs awarded to each participant by dividing $1,250,000 by the Black-Scholes value of a SAR based on the Closing Price and rounding down to the nearest whole right. The Compensation Committee opted to provide this tranche of service-based awards (i.e., without any performance measures) as the value of the awards will move with the Company share price, which provides an incentive to deliver on the Company's long-term strategic objectives and is in line with our shareholders' interest. The multi-year vesting period for these awards is believed to be appropriate in order to have an executive director retain a long-term interest in the Company.

Relative Total Shareholder Return Performance Stock Units ($1,500,000)

The executive director received an award of performance stock units ("PSUs") subject to a relative total shareholder return ("rTSR") market condition. rTSR was selected because there is a belief among shareholders that TSR aligns the interests of shareholders and executives. The Compensation Committee determined the number of PSUs awarded by dividing the award value of $1,500,000 by the Closing Price and rounding down to the nearest whole unit. At the end of calendar year 2021, our TSR for the three-year period 2019 through 2021 will be compared to the TSR for a comparator group of 29 companies (the "2019 rTSR Comparator Group") selected by the Compensation Committee, and the number of shares of our stock actually delivered to the participants will be determined by the following chart, with linear interpolation applied between specified levels:

rTSR Performance Percentile Rank	Percent Funding for Objective
≥90th	200%
80th	150%
50th	100%
30th	40%
<30th	0%

The 2019 rTSR Comparator Group consists of the following companies:

ABIOMED, Inc.	Hill-Rom Holdings, Inc.	Intuitive Surgical, Inc.
Baxter International Inc.	Hologic, Inc. Insulet Corporation	Invacare Corporation
Becton, Dickinson and Company	Integer Holdings Corporation	Masimo Corporation
Boston Scientific Corporation	Integra LifeSciences	Medtronic plc Natus Medical Incorporated Nevro Corporation
Cantel Medical Corp.	Varian Medical Systems, Inc.	NuVasive, Inc.
CONMED Corporation	Wright Medical Group N.V.	ResMed Inc.
DexCom, Inc.	Zimmer Biomet Holdings, Inc.	Smith & Nephew plc
Edwards Lifesciences Corporation	Holdings Corp.	Stryker Corporation
Globus Medical, Inc.	Insulet Corporation	
Haemonetics Corporation	Teleflex Incorporated	

Adjusted Free Cash Flow Performance Stock Units ($1,500,000)

The executive director received an award of PSUs subject to achievement of a three-year cumulative adjusted free cash flow target (the "FCF Target"). The Compensation Committee selected free cash flow as a performance metric for this award because free cash flow is a measure of profitability used by many investors to evaluate a company's expected performance. After an extensive discussion in 2017, the Compensation Committee selected free cash flow over a returns-based metric, at least for the next several years, due to several long-term dilutive investments that render predictions of returns difficult over a reasonable time horizon.

The Compensation Committee determined the number of PSUs awarded to the executive director by dividing $1,500,000 by the Closing Price and rounding down to the nearest whole unit. At the end of calendar year 2021, cumulative adjusted free cash flow for the period 2019 through 2021 will be compared to the FCF Target, and the number of shares of our stock actually delivered to the participants will be determined by the following chart, with linear interpolation applied between specified levels:

FCF Achievement Relative to FCF Target	Percent Funding for Objective
≥150%	200%
125%	150%
100%	100%
60%	20%
<60%	0%

"Adjusted free cash flow" defined as the Company's reported cash flow from operating activities (including ImThera and TandemLife), minus the Company's reported capital expenditures, and excluding cash flows associated with restructuring, integration, 3-T heater cooler product remediation and significant and unusual litigation and cash paid or received for acquisitions (Caisson, ImThera, TandemLife and future acquisitions), divestitures (CRM and future divestitures) and settlements and judgments in significant and unusual litigation (including 3T heater-cooler litigation).

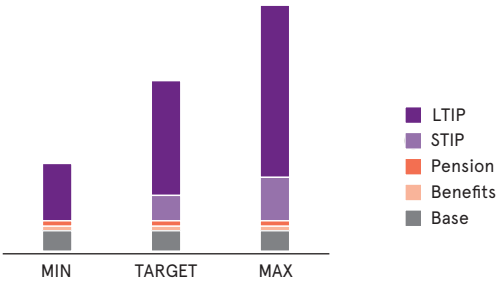
We expect the performance framework in 2020 to be similar to the one outlined above. The rTSR Comparator group may of necessity change. The Company reserves the right to modify this performance framework in future years of the operation of this Policy.

Illustration of the Application of the Remuneration Policy 2019

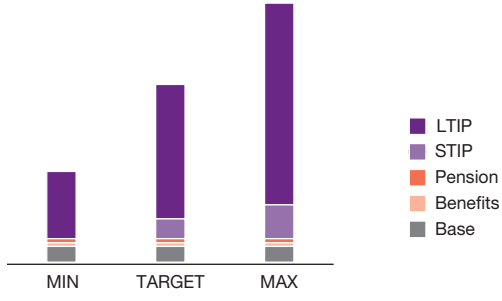
The following charts show the potential split between the different elements of the executive director's remuneration under three different performance scenarios (minimum, target and maximum (the latter not allowing for any share price appreciation) for the year ending December 31, 2019. The amounts are computed in accordance with this Policy and by applying the following assumptions:

- The currency conversion rates used are for 2018-£/$ =1.333872 (average currency rate for the period 1 January 2018 to 31 December 2018).
- The base salary is as in effect on April 1, 2019.
- The value of benefits is based upon applicable costs as at $217,835.
- The value of pension is $146,359.
- The target bonus is assumed to be 125%.
- The target value of the RSUs, PSUs and SARs with no share appreciation is assumed to be the same as the grant date value as described above: $1,250,000 for the RSUs and $3,000,000 for the PSUs. The SARs have no value on the grant date.
- Share appreciation of 50% is based on an initial share price as at the grant date (30 March 2019) (share price: $97.25). A 50% increase results in a share price of $145.88. The number of SARs as at grant date was 39,357.

ASSUMING NO SHARE PRICE APPRECIATION



ASSUMING 50% SHARE PRICE APPRECIATION



Non-Executive Director Future Policy Table

As of the effective date of this Policy, all of our directors, with the exception of our Chief Executive Officer, are non-executive directors. The Company believes that the following program and levels of compensation are necessary to secure and retain the services of individuals possessing the skills, knowledge and experience to successfully support and oversee the Company as members of our Board of Directors.

Under the Company's 2015 Incentive Award Plan (the "2015 Incentive Award Plan"), the Board is empowered to establish a written nondiscretionary formula for the grant of equity awards to non-executive directors. From 2015, this formula was set out in a Non-Employee Director Equity Compensation Policy. This section of the Remuneration Policy in respect of non-executive directors replaces the Company's Non-Employee Director Equity Compensation Policy adopted in 2015 and referred to in the 2015 Incentive Award Plan. Once approved by shareholders at the Company's 2019 annual general meeting, this section of the Remuneration Policy will also be referred to as the "Non-Employee Director Equity Compensation Policy" for the purposes of interpreting the 2015 Incentive Award Plan.

Our non-executive directors are not compensated by the Company for their service as directors other than as set forth below. Maximum caps specified below are provided to comply with law, exceed current payment levels and should not be construed as indicating an intent to make or not make payments at those levels.

Director discretion will operate within the bounds set out below. No clawback provisions are in place.

Purpose and Link to Strategy	Operation	Maximum Opportunity	Performance Measures	New Component?
Cash (Annual Board Retainer; Committee Membership; Chair Fee; Lead Independent Director fee)				
• Attract and retain non-executive directors with a diverse and specialised set of skills, background and experience. • Align with market value of role. • Reflects time commitments and responsibilities of each role (i.e. member of the Board vs Chairman; member of a committee vs Chair of a committee).	• Paid in cash at the beginning of each financial quarter. • Reviewed periodically by the Compensation Committee, which provides recommendations to the Board. Recommendations considered by the Board, which then determines the amount. • The Compensation Committee and the Board consider data at comparator companies. • Increases will typically align with the recommendations of the Compensation Committee's independent advisor and will typically take into account factors such as the time commitment of the role and market levels in companies of comparable size and complexity. • Proration of fees where non-executive director starts or leaves in the middle of a quarter. • The chairs of each Board committee and the Chair of the Board receive additional cash fees as do the members of each committee of the Board. • The Company does not currently have a Lead Independent Director or similar but anticipates that if one is appointed, a separate fee will be warranted in light of the increased responsibilities.	N/A	N/A	This component continues from the last approved policy in 2016. However, in keeping with market practices, this policy provides scope for increases in line with the market.

Purpose and Link to Strategy	Operation	Maximum Opportunity	Performance Measures	New Component?
	Annual Equity Awards			
As above; and to attract and retain non-executive directors with experience in the US market (where equity awards are a standard component of non-executive director remuneration.) The US market remains a key market in our strategy. Align the interests of our non-executive directors with those of our shareholders	Annual awards of time-vesting restricted stock units. The number of RSUs awarded is determined by dividing the award value by the most recent closing price of the Company's ordinary shares on the Nasdaq Stock Market and rounding down to the nearest full unit. Equity awards are granted under and subject to the terms and provisions of the Company's 2015 Incentive Award Plan or Sub-Plan or any other applicable equity incentive plan then maintained by the Company. Equity award amounts are reviewed annually by the Compensation Committee which provides recommendations to the Board. Recommendations are considered by the Board, which then determines the value of awards. The Compensation Committee and the Board consider the following factors when reviewing the level of award: Data at comparator companies Increased responsibilities and scope of the roles Advice from independent advisors in respect of the above Increases will typically align with recommendations of the Compensation Committee's independent advisor and the committee will typically take into account the factors considered by the committee in respect of cash fees. Proration of equity awards operate where non-executive director starts or leaves prior to the end of his/her elected term. Voluntary stock ownership guidelines provide for stock ownership in an amount equal to at least five times the cash Board retainer (i.e., 5 x $110,000 for directors and 5 x $185,000 for the Chairman) within five years of appointment. Non-executive directors are subject to the Company's Insider Trading Policy which prohibits hedging and tightly circumscribes pledging. Vesting: Typically one year, reflecting one-year appointments (annual elections). Treatment of unvested awards on termination is governed by the terms of the 2015 Incentive Award Plan and the individual award agreements (which provide for prorated vesting, inter alia, on resignation of a director.)	There is a maximum of awards under the 2015 Incentive Award Plan:$500,000.	N/A	No material changes
	Tax Preparation			
• Attract and retain non-executive directors with a diverse and specialized set of skills, background and experience regardless of tax situs of the individual. • Assure non-executive directors meet their personal UK tax compliance responsibilities.	Reimbursement (up to £5,000) on production of receipts for personal income tax return preparation for non-UK resident directors. Although not relevant to date, same in respect of US personal income tax return for non-US resident directors if the number of Company business days in the US requires a US tax filing and provide advice related thereto.	Fees will not exceed market	N/A	New component added in line with other US listed English PLC companies with US non-executive directors and global companies generally.

Purpose and Link to Strategy	Operation	Maximum Opportunity	Performance Measures	New Component?
Other Benefits (Travel Expenses, Continuing Education, Other Expenses Properly Incurred in Connection with the Discharge of Director Duties)				
• To promote attendance in person at meetings and on-site visits and other company-related matters (Travel). • To contribute to the continuous improvement of non-executive directors and to enable them to best discharge their duties under the Companies Act 2006 (Continuing Education; Other Expenses).	Benefits that are offered include, but are not limited to: Directors' and officers' insurance cover. Travel expenses (these are reimbursed for the non-executive director only pursuant to the Company's Director Expense Reimbursement Policy which may be amended from time to time.) Reimbursement of reasonable expenses incurred to attend continuing professional development courses. Some directors were provided with cell phones, laptops or tablets in the past. It is not the Company's intention to continue this practice, but given the obsolescence, equipment furnished will not be recalled. Tax on taxable benefits is borne by the director except in the case of items which are the object of UK PSAs.	Benefits will not exceed market	N/A	While the payment of certain benefits for non-executive directors is not a new component, the Policy now includes greater transparency as to what these benefits might include.

Notes to the Non-Executive Director Future Policy Table

(1) In 2018, non-employee directors who served on the Company's Board received the following fees paid in cash for their service on the Board:

- annual board retainer fee of $110,000 ($185,000 for the Board Chair)
- committee chair fees:
  - $15,000 (Nominating and Corporate Governance Committee)
  - $20,000 (Compensation Committee)
  - $30,000 (Audit and Compliance Committee)
- committee member fees (for members other than the committee chairs):
  - $6,000 (Nominating and Corporate Governance Committee)
  - $8,000 (Compensation Committee)
  - $15,000 (Audit and Compliance Committee)

(2) The non-executive directors, in 2018, were also granted restricted stock units ("RSUs") with a fair market value of $110,000 for each non-executive director ($185,000 for the Board Chair.) These are service-based awards that vest after one year. In the event of a termination prior to the end of a director's term, these RSUs are prorated.

Approach to Recruitment Remuneration

Executive Directors

The compensation package for any new executive director would, so far as practicable, be consistent with the policy table set forth above, taking account of the experience and skills of the individual, market conditions and the executive's country of residence. However, the Compensation Committee retains the discretion to offer a compensation package needed to meet the individual circumstances of the recruited executive director and enable the hiring of a high-calibre individual with the necessary skills and expertise. In no event, however, will the target variable annual incentive exceed 200 percent. of base salary. Except as set out below, variable remuneration will follow the policy.

The Company recognises that in many cases, an external appointee may forfeit significant cash bonuses and/or share awards from a prior employer. The Company is mindful of the sensitivity relating to recruitment packages and, in particular, the "buying out" of rights relating to previous employment. It will therefore seek to minimise such arrangements. However, in certain circumstances, to enable the recruitment of exceptional talent, the Compensation Committee may determine that such arrangements promote the success of the Company taken as a whole, having regard also to various stakeholders including employees. The Compensation Committee will use its discretion in settling any such compensation, which will be decided on a case-by-case basis; provided that in no event shall such compensation exceed the value of compensation forfeited by the external appointee, as confirmed by the appointee. The Company also recognises that if it requires a new executive director to relocate in connection with accepting a position with the Company, the Company will also pay relocation and related costs as described in the future policy table.

If the Company appoints an existing employee as an executive director of the Company, or if an executive director joins as a result of a transfer of an undertaking, merger, reconstruction or similar reorganisation of the Company, pre-existing obligations with respect to remuneration, such as pension, benefits and legacy equity awards, will be honoured. Should these differ materially from current arrangements, these will be disclosed in the subsequent remuneration implementation report.

Non-Executive Directors

Any new non-executive directors will be paid in accordance with the current fee levels on appointment, in line with the policy set out above.

Service Agreements/Letters of Appointment and Payments for Loss of Office

Executive Directors

We currently have one executive director, Damien McDonald, and his employment is governed by a service agreement. Should the Company appoint further executive directors, it is expected that their relationship with the Company would also be documented in a service agreement. It is the Company's policy to deal with payments for loss of office in respect of any future additional executive directors in the same way as set out in respect of Mr. McDonald.

On 1 November 2016, the Board appointed Mr. McDonald to be our CEO as of 1 January 2017. On 22 February 2017, the Compensation Committee approved a service agreement between Mr. McDonald and us effective as of 1 January 2017. There were no amendments to the agreement in 2018. The agreement provides for an annual base salary in the amount of £658,000 ($837,920) (later increased to £731,500 ($931,517) as of 1 April 2018) and an opportunity to earn an annual cash incentive bonus with a target amount equal to 100% of his annual base salary (increased in respect of 2019 to 125%). In addition, we agreed to pay Mr. McDonald an annual housing allowance for a period of five years, commencing at £150,000 ($191,015) for 2017 and decreasing by £30,000 ($38,203) each year for the succeeding four years, an annual school allowance for a period of five years, commencing at £31,950 ($40,686) for 2017 and decreasing by £6,390 ($8,137) each year for the succeeding four years, an annual car allowance of £17,750 ($22,603) and pension contributions equal to 15% of the sum of his base salary and annual bonus. Mr. McDonald is also be eligible to participate in our employee benefit plans made available to all our UK-based employees. The agreement will continue in effect until the expiration of 12 months following notice of termination. The Company's policy is not to have any notice period exceed twelve months.

On 22 February 2017, we also delivered a side letter to Mr. McDonald confirming his eligibility for future equity awards.

Copies of both the executive director's service agreement and side letter were filed with the SEC and are available on www.sec.gov. Copies may also be inspected at the Company's registered office by appointment.

The following table quantifies the potential payments that would be made to Mr. McDonald assuming a termination or change-in-control event had occurred on December 31, 2018.

Type of Payment or Benefit	Termination[1][6]	Separation due to Change in Control[2]	Separation due to Disability[3]	Separation due to Death[4]	Separation due to Retirement[5]
Severance	$ 975,727			$ 3,902,909.48	$ 0
STIP	–				–
LivaNova LTIP	–	$ 13,307,497.14	$ 4,194,706.92	4,194,706.92	
Benefits	364,194				
TOTAL	**$ 1,339,921.12**	**$ 13,307,497.14**	**$ 4,194,706.92**	**$ 8,097,616.40**	**$ –**

(1) The severance amount represents twelve months of base salary ($975,727) and includes a cash amount representing the value of the following benefits for a period of twelve months: pension ($146,359), accommodation ($160,065), school allowance ($34,094), and car allowance ($23,676). The Company may elect to pay this severance amount in installments, and in this case, if Mr. McDonald secures alternative employment, then the gross installments payable after the date when alternative employment commences will be reduced by a sum equal to the gross amount of his income from the alternative employment.

As to pension, this amount reflects 15% of Mr. McDonald's compensation (consisting of base).

(2) LTIP Potential payments in case of separation due to change in control are calculated adding the amount resulting from multiplying the 99,626 RSUs subject to accelerated vesting in case of a change in control by the closing market price at 31 December 2018 ($91.47) and the amount resulting multiplying each SARs award subject to accelerated vesting in case of a change in control by the difference between the closing market price at 31 December 2018 ($91.47) and the exercise price for each SAR , as follows (87,113 SARs with an exercise price of $44.79, 41,512 SARs with an exercise price of $88.38).

(3) LTIP Potential payments in case of separation due to disability calculated by multiplying each SARs award subject to accelerated vesting in case of a disability by the difference between the closing market price at 31 December 2018 ($91.47) and the exercise price for each SARs , as follows (87,113 SARs with an exercise price of $44.79, 41,512 SARs with an exercise price of $88.38).

(4) The severance in case of separation due to death represents four times the basic salary as a Lump Sum Tax Free amount to the nominated person's beneficiary. LTIP Potential payments in case of separation due to death calculated by multiplying each SARs award subject to accelerated vesting in case of death by the difference between the closing market price at 31 December 2018 ($91.47) and the exercise price for each SAR, as follows (87,113 SARs with an exercise price of $44.79, 41,512 SARs with an exercise price of $88.38).

(5) Note no retirement added since the PSU awards with the retirement clause have a performance metric that must be met before they can vest.

(6) The currency conversion rates used are for 2018-£/$ =1.333872 (average currency rate for the period 1 January 2018 to 31 December 2018).

Non-Executive Directors

The Chairman and other non-executive directors have letters of appointment. They do not have employment contracts with the Company or any of its subsidiaries. The letters of appointment provide for the non-executive directors' date of commencement of appointment and the termination of appointment at the conclusion of the Company's following year's Annual General Meeting, subject to the earlier termination by the Company (1) for disqualification for any of the grounds set out in Article 30.1 of the Company's articles of association, as amended from time to time; and/or (2) on the grounds of the commission by the director of any serious or repeated breach or non-observance of his/her obligations to the Company (which includes an obligation not to breach your statutory, fiduciary or common-law duties). The letters also note that non-executive directors are expected to devote such time as is necessary for the proper performance by directors of their duties. There are no payments for loss of office set out in the letters of appointment, although any non-executive director resigning can expect a proration of his annual equity award. Pursuant to the Company's Articles of Association, directors stand for election annually. The current form of letter of appointment may be found on the website of the US Securities and Exchange Commission at www.sec.gov. It is the Company's intention to file any material amendments to this letter.

Statement of Consideration of Employment Conditions Elsewhere in the Group

When reviewing and determining pay for executive directors, the Compensation Committee takes into account the level and structure of remuneration as well as salary budgets for other employees in the Company. More specifically, the Compensation Committee reviews annual salary increase budgets for the general employee population in the United Kingdom, Europe and North America, as well as the remuneration structure and policy for the global senior management population.

LivaNova employs approximately 3,900 employees and operates in more than 100 countries around the world. Given the Company's global scale and complexity, the Committee has not consulted directly with employees when designing the remuneration policy for its executive directors. However, the Company conducts regular employee surveys that cover a wide range of issues relating to local employment conditions and an understanding of group-wide strategic matters.

Statement of Consideration of Shareholder Views

This Policy for remuneration of both executive directors and non-executive directors was devised by the Compensation Committee of which all members are non-executive directors and independent. The Policy was also approved by the full Board. Both the Board and the Compensation Committee are committed to considering shareholder views. The Compensation Committee and the Board have considered the following in devising and approving the current Policy, which does not differ materially from the one approved by shareholders in 2016:

- the significant level of support for the Company's inaugural remuneration policy in 2016 (87.84%)
- the significant level of support for the Company's remuneration reports in each of 2016, 2017 and 2018 (91.33%; 87.40%; 95.45%)
- the significant level of support for the Company's compensation of its "named executive officers" (which includes its one executive director) ("US Say-on-Pay") on its inaugural vote in 2018 (95.26%)

On the basis of the above, the Company has not made material changes to the policy adopted in 2016. The Company did invite some of its key investors to engage on governance and compensation matters in the fourth quarter of 2017, and during the ensuing calls with those wishing to engage, the Compensation Committee vetted various proposals on compensation matters.

Committee Discretion

The Compensation Committee maintains a certain level of discretion in this Policy so that the Policy can be applied in unforeseen circumstances. The committee takes seriously the trust the Company's shareholders place in the committee in exercising this discretion. Discretion is typically applied in the following contexts. The committee exercises discretion in reviewing and setting base salaries within the parameters set out in this Policy. No maximum base salary is provided for in the Policy in order to ensure the Company remains competitive. The committee may exercise discretion in respect of various areas of operation and administration of the short-term incentive plan. These include the setting of performance criteria each year, dealing with leavers, and dealing with exceptional circumstances. In respect of the LivaNova LTIP, the committee may exercise discretion in various areas of this plan as well. These include the timing of awards (subject to the Company's predetermined equity award grant dates), the setting of performance criteria each year, making objectively determinable adjustments to performance goals, adjudicating as to when a termination of service has occurred, determinations as to whether terminations have been for cause, determining the vesting schedule of awards, and the exercise of certain other discretionary powers as set out in the 2015 Incentive Award Plan. The committee also has discretion to set components of remuneration within a range from time to time as set out in the maximum opportunity sections of the future policy table in respect of executive directors.

The Board and not the Compensation Committee has ultimate authority under the 2015 Incentive Award Plan to approve non-executive director remuneration (although this is recommended by the Compensation Committee.) The Board may exercise its discretion under the 2015 Incentive Award Plan to set components of remuneration within a range from time to time as set out in the maximum opportunity sections of the future policy table in respect of non-executive directors.

FINANCIAL STATEMENTS

Independent Auditors' Report to the Members of LivaNova PLC

Report on the audit of the financial statements

Opinion

In our opinion:

- LivaNova PLC's Group financial statements and Company financial statements (the "financial statements") give a true and fair view of the state of the Group's and of the Company's affairs as at 31 December 2018 and of the Group's and the Company's loss and the Group's cash flows for the year then ended;
- the Group financial statements have been properly prepared in accordance with International Financial Reporting Standards (IFRSs) as adopted by the European Union;
- the Company financial statements have been properly prepared in accordance with United Kingdom Generally Accepted Accounting Practice (United Kingdom Accounting Standards, comprising FRS 101 "Reduced Disclosure Framework", and applicable law); and
- the financial statements have been prepared in accordance with the requirements of the Companies Act 2006.

We have audited the financial statements, included within the Annual Report, which comprise: the Consolidated and Company balance sheets as at 31 December 2018; the Consolidated and Company statements of (loss) income, the Consolidated and Company statements of comprehensive income, the Consolidated statement of cash flows, and the Consolidated and Company statements of changes in equity for the year then ended; and the notes to the financial statements, which include a description of the significant accounting policies.

Basis for opinion

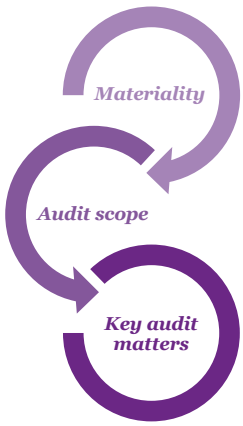
We conducted our audit in accordance with International Standards on Auditing (UK) ("ISAs (UK)") and applicable law. Our responsibilities under ISAs (UK) are further described in the Auditors' responsibilities for the audit of the financial statements section of our report. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Independence

We remained independent of the Group in accordance with the ethical requirements that are relevant to our audit of the financial statements in the UK, which includes the FRC's Ethical Standard, as applicable to listed entities, and we have fulfilled our other ethical responsibilities in accordance with these requirements.

Our audit approach

Overview



- Overall Group materiality: $6.7 million (2017: $7.5 million), based on approximately 5% of the three-year weighted average (loss) income from continuing operations before tax adjusted for the following one-offs (2017: based on 5% of income from continuing operations before tax adjusted for one-offs):
  - Merger and integration costs and restructuring costs (2018: $40 million; 2017: $33 million; 2016: $58 million);
  - 3T Heater/Cooler litigation provision expense (2018: $294 million; 2017 and 2016: nil);
  - 3T Heater/Cooler product remediation expense (2018: $34 million; 2017: $15 million; and 2016: $43 million);
  - Gains on acquisitions (2018: $4 million; 2017: $19 million; 2016: nil);
  - Acquisition-related inventory adjustments (2018: $8 million; 2017: nil; 2016: $40 million);
  - CRM disposal costs (2018: $5 million; 2017 and 2016: nil);
  - Acquisitions costs (2018: $11 million; 2017 and 2016: nil);
  - Contingent consideration gains (2018: $4 million; 2017 and 2016: nil); and
  - Share of loss from equity accounted investments (2018: $1 million; 2017: $17 million; 2016: $19 million).
- Overall Company materiality: $34.8 million (2017: $3 million), based on 1% of Total assets (2017: based on an allocation of Group materiality).

- The Group operates its two business franchises through a legal entity structure across over 100 countries, which are managed as a number of components. Our audit focuses on 13 components, over which we performed either a full scope audit or specified audit procedures on certain balances or transactions.
- The components where we conducted audit procedures, together with work performed at corporate functions and over consolidation adjustments, accounted for approximately 86% of the Group's revenue and 80% of the Group's statutory loss from continuing operations before tax.

- Business Combinations – ImThera and TandemLife (Key Audit Matter for Group).
- 3T Heater-Cooler product remediation and litigation provision (Key Audit Matter for Group).

The scope of our audit

As part of designing our audit, we determined materiality and assessed the risks of material misstatement in the financial statements. In particular, we looked at where the directors made subjective judgements, for example in respect of significant accounting estimates that involved making assumptions and considering future events that are inherently uncertain. As in all of our audits we also addressed the risk of management override of internal controls, including evaluating whether there was evidence of bias by the directors that represented a risk of material misstatement due to fraud.

Key audit matters

Key audit matters are those matters that, in the auditors' professional judgement, were of most significance in the audit of the financial statements of the current period and include the most significant assessed risks of material misstatement (whether or not due to fraud) identified by the auditors, including those which had the greatest effect on: the overall audit strategy; the allocation of resources in the audit; and directing the efforts of the engagement team. These matters, and any comments we make on the results of our procedures thereon, were addressed in the context of our audit of the financial statements as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters. This is not a complete list of all risks identified by our audit.

Key audit matter	How our audit addressed the key audit matter
Business Combinations – ImThera and TandemLife (Group) *Refer to Note 7. Business Combinations in the Consolidated financial statements* **ImThera Medical, Inc** On 16 January 2018, the Group acquired the remaining 86% outstanding interest in ImThera Medical, Inc ('ImThera') for cash consideration of up to $225 million. Cash in the amount of $78.3 million was paid at closing with the balance to be paid based on achievement of certain regulatory milestones and a sales-based earn-out. **TandemLife** On 4 April 2018, the Group acquired CardiacAssist, Inc, doing business as TandemLife ('TandemLife'), for cash consideration of up to $254 million. Cash of $204 million was paid at closing with up to $50 million in contingent consideration based on the achievement of regulatory milestones. IFRS 3 'Business Combinations' (IFRS 3) requires the fair value of consideration paid to be allocated firstly to the fair value of net assets acquired, then to the fair value of separately identifiable intangible assets and finally to goodwill, which involves a number of estimates and judgements. Additionally, there is significant estimation involved in the determination of the fair value of contingent consideration paid.	For both acquisitions, we have performed the following procedures: • Gained an understanding of the process undertaken by management in respect of acquisitions including understanding, evaluating and testing the design and operating effectiveness of key controls over the processes; • Obtained and reviewed evidence of the business combination including reviewing the signed purchase agreement, payment of consideration and minutes of board approval; • Reviewed management's business combination memorandum, which included the significant judgements and assumptions taken which principally related to the valuation of the acquired intangibles including discount rate and valuation of earn out awards; • Tested management's purchase accounting analysis, including fair value of assets acquired and liabilities assumed, utilising our valuation experts to assess key assumptions, including revenue growth assumptions, within management's valuation analysis; • Tested the fair value of the contingent consideration paid for each acquisition, including assessment of the underlying assumptions within the contingent consideration calculation with the assistance of our valuation experts; and • Assessed material measurement period adjustments, noting that the adjustments related to new information obtained about facts and circumstances that existed as of the acquisition date. Additionally, we reviewed the adequacy and appropriateness of the acquisitions disclosures within the financial statements. We noted no exceptions through performing these procedures.

Key audit matter	How our audit addressed the key audit matter
3T Heater- Cooler product remediation and litigation provision (Group) *Refer to Note 20. Contingent Consideration - Litigation Provision Liability and Other Provisions and Note 25. Commitments and Contingencies in the Consolidated financial statements* In response to the US Food and Drug Administration (FDA) Warning Letter, in the fourth quarter of 2016, the Group initiated a remediation program for its 3T Heater-Cooler device ('3T device'). In 2018, the remediation program consisted of: providing a no-charge deep disinfection service; providing existing 3T device users with new loaner devices at no charge; and implementation of the vacuum system addition upgrade. The Group maintains a provision for the future costs associated with this product remediation plan, which at 31 December 2018 was $14.7 million (2017: $27.5 million). The calculation of this provision is subject to significant estimation uncertainty, particularly regarding assumptions relating to: • Estimated service costs; • The proportion of 3T units which will require a vacuum upgrade versus those that will require a deep disinfection service; • The cost of providing loaner devices to customers while units are remediated; • The cost of deep disinfection services; • The cost of providing the vacuum upgrades; and • The residual value of loaner devices that Group has acquired. Additionally, the Group recorded a $294 million liability in the fourth quarter of 2018 in connection with the 3T device litigation. On 29 March 2019, the Group settled the multi-district portion of the 3T litigation for $225 million, in line with management's provision estimate. A number of state and international cases remain unsettled. The $69 million provision for the remaining unsettled cases is subject to significant estimation uncertainty in relation to the ultimate settlement amount.	We gained a detailed understanding of the 3T matters through discussions with management and reviewing correspondence from the relevant authorities, as well as internal compliance and legal documentation. In order to test the $14.7 million product remediation provision, we performed the following procedures: • Assessed the mathematical accuracy of management's calculation; • Considered the completeness of information included in the estimate; • Performed a retrospective review of the accuracy of management's prior year provision; and • Assessed the reasonableness of future cost estimates based on actual costs incurred. For the litigation provision, we considered the recent $225 million settlement as retrospective evidence of management's ability to accurately estimate the remaining unsettled provision. For the unsettled $69 million provision, we evaluated management's judgement of the likely outcome and compared that to the provision by performing the following procedures: • Read documentation such as correspondence with external legal counsel and Board minutes and held discussions with external and internal legal counsel; • Evaluated confirmations that we received from the Group's external legal counsel; and • Reviewed corroborative evidence supporting the completeness of the claimants and the Company's exposure. Additionally, we reviewed the adequacy and appropriateness of the disclosures within the financial statements. We noted no material exceptions through performing these procedures.

We determined that there were no key audit matters applicable to the Company to communicate in our report.

How we tailored the audit scope

We tailored the scope of our audit to ensure that we performed enough work to be able to give an opinion on the financial statements as a whole, taking into account the structure of the Group and the Company, the accounting processes and controls, and the industry in which they operate.

We conducted full scope audits in two key components: US and Italy. In addition, in order to achieve the required coverage, we conducted specified procedures for an additional 11 components over key financial statement line items, including revenue, cost of sales, inventory, accounts receivable, property, plant and equipment, cash, and operating expenses.

The components where we conducted audit procedures, together with work performed at corporate functions and over consolidation adjustments, accounted for approximately 86% of the Group's revenue and 80% of the Group's statutory loss from continuing operations before tax.

Materiality

The scope of our audit was influenced by our application of materiality. We set certain quantitative thresholds for materiality. These, together with qualitative considerations, helped us to determine the scope of our audit and the nature, timing and extent of our audit procedures on the individual financial statement line items and disclosures and in evaluating the effect of misstatements, both individually and in aggregate on the financial statements as a whole.

Based on our professional judgement, we determined materiality for the financial statements as a whole as follows:

	Group financial statements	Company financial statements
Overall materiality	$6.7 million (2017: $7.5 million).	$34.8 million (2017: $3.0 million).
How we determined it	Approximately 5% of the three-year weighted average (loss) income from continuing operations before tax adjusted for the following one-offs (2017: based on 5% of income from continuing operations before tax adjusted for one-offs): • Merger and integration costs and restructuring costs (2018: $40 million; 2017: $33 million; 2016: $58 million); • 3T Heater/Cooler litigation provision expense (2018: $294 million; 2017 and 2016: nil); • 3T Heater/Cooler product remediation expense (2018: $34 million; 2017: $15 million; and 2016: $43 million); • Gains on acquisitions (2018: $4 million; 2017: $19 million; 2016: nil); • Acquisition-related inventory adjustments (2018: $8 million; 2017: nil; 2016: $40 million); • CRM disposal costs (2018: $5 million; 2017 and 2016: nil); • Acquisitions costs (2018: $11 million; 2017 and 2016: nil); • Contingent consideration (2018: $4 million; 2017 and 2016: nil); and • Share of loss from equity accounted investments (2018: $1 million; 2017: $17 million; 2016: $19 million).	1% of Total assets (2017: allocation of Group materiality).
Rationale for benchmark applied	Adjusted (loss) income from continuing operations before tax is the primary measure used by the shareholders in assessing the performance of the Group. Due to the volatility of the Group's adjusted (loss) income from continuing operations before tax since the merger in 2015 as a result of significant changes to the business following acquisitions and disposals, we used a weighted three-year average, weighting 2018 50%, 2017 30%, and 2016 20%.	As the Company's principal activity is to hold investments in subsidiaries, the Company is not profit-oriented. Therefore total assets is used as the benchmark. We have applied a 1% rule of thumb suggested by ISAs (UK) as the Company is a public interest entity.

For each component in the scope of our Group audit, we allocated a materiality that is less than our overall Group materiality. The range of materiality allocated across components was between $1.4 million and $6.3 million based on the contribution of the component to the Group. Certain components were audited to a local statutory audit materiality that was also less than our overall Group materiality.

We agreed with the Audit Committee that we would report to them misstatements identified during our audit above $340,000 (Group audit) (2017: $800,000) and $1,740,000 (Company audit) (2017: $800,000) as well as misstatements below those amounts that, in our view, warranted reporting for qualitative reasons.

Conclusions relating to going concern

ISAs (UK) require us to report to you when:

- the directors' use of the going concern basis of accounting in the preparation of the financial statements is not appropriate; or
- the directors have not disclosed in the financial statements any identified material uncertainties that may cast significant doubt about the Group's and Company's ability to continue to adopt the going concern basis of accounting for a period of at least twelve months from the date when the financial statements are authorised for issue.

We have nothing to report in respect of the above matters.

However, because not all future events or conditions can be predicted, this statement is not a guarantee as to the Group's and Company's ability to continue as a going concern. For example, the terms on which the United Kingdom may withdraw from the European Union are not clear, and it is difficult to evaluate all of the potential implications on the Group's trade, customers, suppliers and the wider economy.

Reporting on other information

The other information comprises all of the information in the Annual Report other than the financial statements and our auditors' report thereon. The directors are responsible for the other information. Our opinion on the financial statements does not cover the other information and, accordingly, we do not express an audit opinion or, except to the extent otherwise explicitly stated in this report, any form of assurance thereon.

In connection with our audit of the financial statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit, or otherwise appears to be materially misstated. If we identify an apparent material inconsistency or material misstatement, we are required to perform procedures to conclude whether there is a material misstatement of the financial statements or a material misstatement of the other information. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report based on these responsibilities.

With respect to the Strategic Report and Directors' Report, we also considered whether the disclosures required by the UK Companies Act 2006 have been included.

Based on the responsibilities described above and our work undertaken in the course of the audit, the Companies Act 2006 and ISAs (UK) require us also to report certain opinions and matters as described below.

Strategic Report and Directors' Report

In our opinion, based on the work undertaken in the course of the audit, the information given in the Strategic Report and Directors' Report for the year ended 31 December 2018 is consistent with the financial statements and has been prepared in accordance with applicable legal requirements.

In light of the knowledge and understanding of the Group and Company and their environment obtained in the course of the audit, we did not identify any material misstatements in the Strategic Report and Directors' Report.

Directors' Remuneration

In our opinion, the part of the Directors' Remuneration Report to be audited has been properly prepared in accordance with the Companies Act 2006.

Responsibilities for the financial statements and the audit

Responsibilities of the directors for the financial statements

As explained more fully in the Directors' responsibility statement set out on page 41, the directors are responsible for the preparation of the financial statements in accordance with the applicable framework and for being satisfied that they give a true and fair view. The directors are also responsible for such internal control as they determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the directors are responsible for assessing the Group's and the Company's ability to continue as a going concern, disclosing as applicable, matters related to going concern and using the going concern basis of accounting unless the directors either intend to liquidate the Group or the Company or to cease operations, or have no realistic alternative but to do so.

Auditors' responsibilities for the audit of the financial statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditors' report that includes our opinion. Reasonable

assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs (UK) will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

A further description of our responsibilities for the audit of the financial statements is located on the FRC's website at: www.frc.org.uk/auditorsresponsibilities. This description forms part of our auditors' report.

Use of this report

This report, including the opinions, has been prepared for and only for the Company's members as a body in accordance with Chapter 3 of Part 16 of the Companies Act 2006 and for no other purpose. We do not, in giving these opinions, accept or assume responsibility for any other purpose or to any other person to whom this report is shown or into whose hands it may come save where expressly agreed by our prior consent in writing.

Other required reporting

Companies Act 2006 exception reporting

Under the Companies Act 2006 we are required to report to you if, in our opinion:

- we have not received all the information and explanations we require for our audit; or
- adequate accounting records have not been kept by the Company, or returns adequate for our audit have not been received from branches not visited by us; or
- certain disclosures of directors' remuneration specified by law are not made; or
- the Company financial statements and the part of the Directors' Remuneration Report to be audited are not in agreement with the accounting records and returns.

We have no exceptions to report arising from this responsibility.

Jonathan Lambert (Senior Statutory Auditor)
for and on behalf of PricewaterhouseCoopers LLP
Chartered Accountants and Statutory Auditors
London
30 April 2019

LIVANOVA PLC AND SUBSIDIARIES

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LIVANOVA PLC AND SUBSIDIARIES

Consolidated Statement of (Loss) Income

(In thousands, except per share amounts)	Note	Year Ended 31 December 2018	Year Ended 31 December 2017
Revenue	27	$ 1,106,961	$ 1,012,277
Costs and expenses:			
Cost of sales	29	364,843	360,045
Product remediation	20	10,680	7,254
Selling, general and administrative	29	498,423	409,749
Research and development	29	154,039	114,983
Exceptional items	31	334,356	32,584
Operating (loss) income from continuing operations		(255,380)	87,662
Finance income		847	1,318
Finance expense		(9,825)	(7,797)
Gain on acquisitions	7	4,212	39,428
Impairment of investments		—	(8,565)
Foreign exchange and other (losses) gains		(1,925)	1,084
Share of loss from equity accounted investments		(644)	(16,719)
(Loss) income from continuing operations before tax		(262,715)	96,411
Income tax benefit	24	72,030	9,985
(Loss) income from continuing operations		(190,685)	106,396
Discontinued operations:			
(Loss) income from discontinued operations, net of tax	8	(9,954)	4,538
Impairment of discontinued operations, net of tax	8	—	(36,868)
Loss from discontinued operations	8	(9,954)	(32,330)
(LOSS) INCOME ATTRIBUTABLE TO OWNERS OF THE PARENT		**$ (200,639)**	**$ 74,066**
Basic (loss) earnings per share:			
Continuing operations	26	$ (3.93)	$ 2.21
Discontinued operations	26	(0.21)	(0.67)
		$ (4.14)	**$ 1.54**
Diluted (loss) earnings per share:			
Continuing operations	26	$ (3.93)	$ 2.19
Discontinued operations	26	(0.21)	(0.66)
		$ (4.14)	**$ 1.53**
Shares used in computing basic earnings per share	26	48,497	48,157
Shares used in computing diluted earnings per share	26	48,497	48,501

See accompanying notes to the consolidated financial statements

LIVANOVA PLC AND SUBSIDIARIES

Consolidated Statement of Comprehensive Income

(In thousands)	Note	Year Ended 31 December 2018	Year Ended 31 December 2017
(Loss) income attributable to owners of the parent		$ (200,639)	$ 74,066
Items of other comprehensive (loss) income that will subsequently be reclassified to profit or loss:			
Cash flow hedges for interest rate fluctuations	16	66	(939)
Tax impact		(17)	402
Cash flow hedges for exchange rate fluctuations	16	(99)	(5,474)
Tax impact		25	1,473
Foreign currency translation differences		(64,118)	112,623
Unrealized gain on investment		—	7,272
Tax impact		—	(1,782)
Total items of other comprehensive (loss) income that will subsequently be reclassified to profit or loss		(64,143)	113,575
Items of other comprehensive income (loss) that will not subsequently be reclassified to profit or loss:			
Remeasurement of net assets for defined benefits		662	(327)
Tax impact		(190)	64
Total items of other comprehensive income (loss) that will not subsequently be reclassified to profit or loss		472	(263)
Total other comprehensive (loss) income, net of taxes		(63,671)	113,312
TOTAL COMPREHENSIVE (LOSS) INCOME FOR THE YEAR, NET OF TAXES ATTRIBUTABLE TO OWNERS OF THE PARENT		**$ (264,310)**	**$ 187,378**

See accompanying notes to the consolidated financial statements

LIVANOVA PLC AND SUBSIDIARIES

Consolidated Balance Sheet

(In thousands)	Note	As of 31 December 2018	As of 31 December 2017
ASSETS			
Non-current assets			
Property, plant and equipment	10	$ 180,352	$ 177,989
Intangible assets	11	781,487	549,767
Goodwill	11	960,437	787,929
Equity investments in associates and joint ventures		—	1,799
Financial assets	13	27,456	44,184
Deferred tax assets	24	70,581	78,466
Other assets		2,148	3,638
Total non-current assets		2,022,461	1,643,772
Current assets			
Inventories	14	153,535	144,470
Trade receivables	15	256,135	282,145
Other receivables	15	28,621	24,519
Derivative financial instruments	16	236	519
Other financial assets	13	714	1,395
Tax receivable		37,318	32,509
Cash and cash equivalents		47,204	93,615
TOTAL CURRENT ASSETS		**523,763**	**579,172**
Assets held for sale	9	—	13,628
Assets of discontinued operations	8	—	243,208
Total assets		$ 2,546,224	$ 2,479,780
LIABILITIES AND EQUITY			
Equity			
Share capital		$ 76,144	$ 74,750
Group reconstruction reserve		1,729,764	1,729,764
Share premium		18,516	14,485
Treasury shares		(1,462)	(133)
Accumulated other comprehensive (loss) income	17	(25,647)	43,514
Retained deficit		(287,921)	(45,273)
Total equity		$ 1,509,394	$ 1,817,107
Non-current liabilities			
Derivative financial instruments	16	$ 329	$ 751
Financial liabilities	18	139,538	61,958
Contingent consideration	20	161,381	33,973
Litigation provision liability	20	132,210	—
Other liabilities	19	9,680	10,318
Provisions	20	19,127	29,433
Provision for employee severance indemnities and other employee benefit provisions	23	21,991	25,277
Deferred taxes liabilities	24	55,826	96,732
Total non-current liabilities		540,082	258,442

LIVANOVA PLC AND SUBSIDIARIES

Consolidated Balance Sheet (continued)

(In thousands)	Note	As of 31 December 2018	As of 31 December 2017
Current liabilities			
Trade payables		75,182	84,716
Other payables	21	151,789	116,361
Derivative financial instruments	16	5,063	1,294
Other financial liabilities	18	28,794	84,034
Provisions	20	51,538	28,710
Current provision litigation liability	20	161,852	–
Tax payable		22,530	12,826
Total current liabilities		496,748	327,941
Liabilities of discontinued operations	8	–	76,290
TOTAL LIABILITIES AND EQUITY		**$ 2,546,224**	**$ 2,479,780**

See accompanying notes to the consolidated financial statements

The financial statements on pages 72 to 144 were approved by the Board of Directors and were signed on its behalf on 30 April 2019 by:

Damien McDonald

Chief Executive Officer & Director

LIVANOVA PLC AND SUBSIDIARIES

Consolidated Statement of Changes in Equity

(In thousands)	Note	Ordinary Number of Shares	Ordinary Share Capital	Group Reconstruction Reserve	Share Premium	Treasury Shares	Accumulated Other Comprehensive Income (Loss)	Retained Earnings (Deficit)	Total Equity
Balance at 31 December 2016		48,157	$ 74,578	$ 1,729,764	$ 9,684	$ (4,500)	$ (69,798)	$ (161,101)	$1,578,627
Share-based compensation plans	22	133	172	–	4,801	4,367	–	41,762	51,102
Total transactions with owners recognised directly in shareholders' equity		133	172	–	4,801	4,367	–	41,762	51,102
Net income		–	–	–	–	–	–	74,066	74,066
Other comprehensive income	17	–	–	–	–	–	113,312	–	113,312
Total comprehensive income for the year		–	–	–	–	–	113,312	74,066	187,378
Balance at 31 December 2017		48,290	74,750	1,729,764	14,485	(133)	43,514	(45,273)	1,817,107
Share-based compensation plans	22	110	147	–	4,031	558	–	1,861	6,597
Issuances of ordinary shares		1,423	1,887	–	–	(1,887)	–	–	–
Purchase of ordinary shares	17	(500)	(640)	–	–	–	–	(49,360)	(50,000)
Total transactions with owners recognised directly in shareholders' equity		1,033	1,394	–	4,031	(1,329)	–	(47,499)	(43,403)
Opening balance adjustment upon adoption of IFRS 9		–	–	–	–	–	(5,490)	5,490	–
Net loss		–	–	–	–	–	–	(200,639)	(200,639)
Other comprehensive loss	17	–	–	–	–	–	(63,671)	–	(63,671)
Total comprehensive loss for the year		–	–	–	–	–	(69,161)	(195,149)	(264,310)
BALANCE AT 31 DECEMBER 2018		**49,323**	**$ 76,144**	**$ 1,729,764**	**$ 18,516**	**$ (1,462)**	**$ (25,647)**	**$ (287,921)**	**$1,509,394**

See accompanying notes to the consolidated financial statements

LIVANOVA PLC AND SUBSIDIARIES

Consolidated Statement of Cash Flows

(In thousands)	Note	Year Ended 31 December 2018	Year Ended 31 December 2017
Cash Flows From Operating Activities:			
(Loss) income for the year		$ (200,639)	$ 74,066
Non-cash items included in (loss) income:			
Depreciation and amortization	10, 11	69,940	78,508
Share-based compensation	22	32,853	28,861
Gain on acquisitions	7	(4,212)	(39,428)
Impairment of discontinued operations	8	—	44,904
Impairment of cost-method investments		—	8,565
Amortization on income taxes payable on intercompany transfers		13,370	31,784
Impairment of property, plant and equipment		567	5,979
Loss from equity accounted investments		1,855	21,606
Net finance expense		8,978	6,479
Income tax benefit		(72,670)	(24,629)
Other non-cash items		(1,424)	2,858
Changes in operating assets and liabilities:			
Accounts receivable, net		21,181	(48,934)
Inventories		(10,647)	7,187
Other current and non-current assets		(12,989)	(6,180)
Restructuring reserve		6,504	(14,557)
Litigation provision liability	20	294,061	—
Current and non-current liabilities		9,432	(39,246)
Cash provided by operations		156,160	137,823
Interest paid		(9,278)	(7,510)
Income taxes paid		(26,393)	(38,974)
Net cash provided by operating activities		**120,489**	**91,339**
Cash Flow From Investing Activities:			
Purchase of property, plant, equipment and other	27	(37,997)	(34,107)
Acquisitions, net of cash acquired	7	(279,691)	(14,194)
Proceeds from the sale of the CRM business franchise, net of cash disposed	8	186,682	—
Proceeds from sale of investments		—	3,192
Proceeds from asset sales		14,220	5,935
Purchases of investments		(3,770)	(6,255)
Loans to equity method investees		—	(7,426)
Net cash used in investing activities		**(120,556)**	**(52,855)**

LIVANOVA PLC AND SUBSIDIARIES

Consolidated Statement of Cash Flows (continued)

(In thousands)	Note	Year Ended 31 December 2018	Year Ended 31 December 2017
Cash Flows From Financing Activities:			
Change in short-term borrowing, net		(30,745)	12,396
Proceeds from short-term borrowing (maturities greater than 90 days)		240,000	20,000
Repayments of short-term borrowing (maturities greater than 90 days)		(260,000)	–
Proceeds from long-term debt obligations	18	103,570	2,048
Repayment of long-term debt obligations	18	(23,827)	(22,755)
Payment of deferred consideration - acquisition of Caisson		(12,994)	–
Purchase of treasury shares		(50,000)	–
Proceeds from exercise of options for stock		4,178	4,973
Shares repurchased from employees for minimum tax withholding		(11,611)	(4,083)
Other financial assets and liabilities		(919)	(1,285)
Net cash (used in) provided by financing activities		**(42,348)**	**11,294**
Effect of exchange rate changes on cash and cash equivalents		(3,996)	4,048
Net (decrease) increase in cash and cash equivalents		**(46,411)**	**53,826**
Cash and cash equivalents at beginning of year		93,615	39,789
CASH AND CASH EQUIVALENTS AT END OF YEAR		**$ 47,204**	**$ 93,615**

See accompanying notes to the consolidated financial statements

LIVANOVA PLC AND SUBSIDIARIES

Notes to the Consolidated Financial Statements

Note 1 Nature of Operations

Company information

LivaNova PLC (collectively with its subsidiaries, the "Company," "LivaNova," "Group," "we" or "our") is a public limited company incorporated in the United Kingdom under the Companies Act 2006 (Registration number 09451374). The Company is domiciled in the United Kingdom and its registered address is 20 Eastbourne Terrace, London, W2 6LG, United Kingdom.

Background

LivaNova PLC was organized under the laws of England and Wales on 20 February 2015 for the purpose of facilitating the business combination of Cyberonics, Inc. ("Cyberonics"), a Delaware corporation and Sorin S.p.A. ("Sorin"), a joint stock company organized under the laws of Italy. As a result of the business combination, LivaNova, headquartered in London, became the holding company of the combined businesses of Cyberonics and Sorin. This business combination became effective on 19 October 2015, at which time LivaNova's Ordinary Shares were listed for trading on the Nasdaq and on the London Stock Exchange as a standard listing under the trading symbol "LIVN." Upon the consummation of the business combination of Cyberonics and Sorin, the historical financial statements of Cyberonics became the Company's historical financial statements. On 23 February 2017, we announced our voluntary cancellation of our standard listing of our shares with the London Stock Exchange due to the low trading volume of our shares and trading ceased at the close of business on 4 April 2017. We continue to serve our shareholders through our listing on the Nasdaq.

The principal legislation under which LivaNova operates is the Companies Act 2006, and regulations made thereunder. The LivaNova Shares were admitted to listing on the Official List pursuant to Chapter 14 of the Listing Rules, which sets out the requirements for standard listings. LivaNova complies with Listing Principles 1 and 2 as set out in Chapter 7 of the Listing Rules, as required by the Financial Conduct Authority.

Description of the business

LivaNova is a global medical device company focused on the development and delivery of important therapeutic solutions for the benefit of patients, healthcare professionals and healthcare systems throughout the world. Working closely with medical professionals in the fields of cardiovascular disease and neuromodulation, we design, develop, manufacture and sell innovative therapeutic solutions that are consistent with our mission to improve our patients' quality of life, increase the skills and capabilities of healthcare professionals and minimize healthcare costs.

Business franchises

LivaNova is comprised of two principal business franchises, which are also our operating segments: Cardiovascular (formerly Cardiac Surgery) and Neuromodulation, corresponding to our primary therapeutic areas. Other corporate activities include corporate business development and New Ventures, focused on new growth platforms and identification of other opportunities for expansion.

Note 2 Basis of Preparation, Use of Accounting Estimates and Significant Accounting Policies

Basis of Preparation

The consolidated financial statements have been prepared on a historical cost basis, except for derivative financial instruments and share awards that have been measured at fair value. The consolidated financial statements are presented in USD and all values are rounded to the nearest thousands, except where otherwise indicated.

The financial statements for the years ended 31 December 2018 and 31 December 2017 were prepared in accordance with IFRS as adopted by the European Union. The consolidated financial statements of LivaNova have been prepared on a going concern basis, in accordance with the Companies Act 2006 as applicable to companies using IFRS adopted by the European Union and interpretations issued by the IFRS Interpretations Committee. As further discussed in "Note 25. Commitments and Contingencies," the Company recorded a $294.1 million litigation provision liability based on managements' best estimate, of which $161.9 million is anticipated to be paid during 2019 and the majority of the remainder is expected to be paid in the first half of 2020. On 26 March 2019, we entered into a $350 million facility agreement with Bank of America Merrill Lynch International DAC, Barclays Bank PLC, BNP Paribas (London Branch) and Intesa Sanpaolo S.P.A. The Company has determined that no material uncertainties were raised regarding our ability to continue as a going concern as of the issuance date of these financial statements. Based on our current business plan, we believe that our existing cash and cash equivalents, future cash generated from operations and borrowings will be sufficient to fund our expected operating needs, working capital requirements, R&D opportunities, capital expenditures, obligations anticipated for the litigation involving our 3T device and debt service requirements over the 12-month period beginning from the issuance date of these financial statements. Our liquidity could be adversely impacted

by the factors affecting future operating results, including those referred to in the "Risks and Uncertainties" section of the Strategic Report of this Annual Report.

Fiscal Year-End

LivaNova's fiscal year ends 31 December.

Consolidation

The accompanying consolidated financial statements include LivaNova, our wholly owned subsidiaries and the LivaNova PLC Employee Benefit Trust. All significant intercompany accounts and transactions have been eliminated.

Reclassifications

We have reclassified certain prior year amounts for comparative purposes. These reclassifications did not have a material effect on our financial condition, results of operations or cash flows.

We reclassified $34.0 million from provisions to contingent consideration, a new financial statement line item, at 31 December 2017 to conform to the presentation on the consolidated balance sheet at 31 December 2018.

Equity method

Under the equity method of accounting, the investments are initially recognised at cost and adjusted thereafter to recognise the Company's share of the post-acquisition profits or losses of the investee in profit or loss, and the Company's share of movements in other comprehensive income (loss) of the investee in other comprehensive income (loss). Dividends received or receivable from associates are recognised as a reduction in the carrying amount of the investment.

Unrealised gains on transactions between the Company and its associates and joint ventures are eliminated to the extent of the Company's interest in these entities. Unrealised losses are also eliminated unless the transaction provides evidence of an impairment of the asset transferred.

Goodwill

We allocate the amounts we pay for an acquisition to the assets we acquire and liabilities we assume based on their fair values at the date of acquisition, including property, plant and equipment, inventories, accounts receivable, long-term debt, and identifiable intangible assets which either arise from a contractual or legal right or are separable from goodwill. We base the fair value of identifiable intangible assets acquired in a business combination, including in-process- research and development, on detailed valuations that use information and assumptions provided by management, which consider management's best estimates of inputs and assumptions that a market participant would use. We allocate any excess purchase price over the fair value of the net tangible and identifiable intangible assets acquired to goodwill. Transaction costs associated with these acquisitions are expensed as incurred and are reported as selling, general and administrative on the consolidated statement of (loss) income. We recognize adjustments to the provisional amounts identified during the measurement period with a corresponding adjustment to goodwill in the reporting year in which the adjustment amounts are determined. The effect on earnings of changes in depreciation, amortization or other income effects, if any, as a result of the change to the provisional amounts are recorded in the same year's consolidated financial statements, calculated as if the accounting had been completed at the acquisition date.

Intangible Assets, Other than Goodwill

Intangible assets shown on the consolidated balance sheets consist of finite-lived and indefinite-lived assets expected to generate future economic benefits and are recorded at their respective fair values as of their acquisition date. Finite-lived intangible assets consist primarily of developed technology and technical capabilities, including patents, related know-how and licensed patent rights, trade names, customer relationships and favorable leases acquired in acquisitions. Customer relationships consist of relationships with hospitals and cardiac surgeons in the countries where we operate. Indefinite-lived intangible assets other than goodwill are composed of IPR&D assets acquired in acquisitions. We estimate the useful lives of our intangible assets, which requires significant management judgement. We amortize our finite-lived intangible assets over their useful lives using the straight-line method.

We evaluate our intangible assets each reporting year to determine whether events and circumstances indicate either a different useful life or impairment. If we change our estimate of the useful life of an asset, we amortize the carrying amount over the revised remaining useful life.

Foreign currency

Our functional currency is the U.S. dollar; however, a portion of the revenues earned and expenses incurred by certain of our subsidiaries are denominated in currencies other than the U.S. dollar. We determine the functional currency of our subsidiaries that exist and operate in different economic and currency environments based on the primary economic environment in which the subsidiary operates, that is, the currency of the environment in which an entity primarily generates and expends cash. Our significant foreign subsidiaries are located in Europe and the U.S. The functional currency of our significant European subsidiaries is the Euro, and the functional currency of our significant U.S. subsidiaries is the U.S. dollar.

Assets and liabilities of subsidiaries whose functional currency is not the U.S. dollar are translated into U.S. dollars based on a combination of both current and historical exchange rates, while their revenues earned and expenses incurred are translated into U.S. dollars at average period exchange rates. Translation adjustments are included as AOCI on the consolidated balance sheets. Gains and losses arising from transactions denominated in a currency different from an entity's functional currency are included in foreign exchange and other (losses) gains on our consolidated statement of (loss) income. Taxes are not provided on cumulative translation adjustments, as substantially all translation adjustments are related to earnings which are intended to be indefinitely reinvested in the countries where earned.

Foreign currency differences arising from translation are recognised in the consolidated statement of (loss) income.

The GBP exchange rate to the USD used in preparing the Company financial statements was as follows:

	Weighted Average Rate GBP	Closing Rate GBP
Year ended 31 December 2018	**0.749697**	**0.781250**
Year ended 31 December 2017	0.776928	0.739730

Current versus non-current classification

The Company presents assets and liabilities in the statement of financial position based on current/non-current classification. An asset is current when it is:

- Expected to be realised or intended to be sold or consumed in the normal operating cycle
- Held primarily for the purpose of trading
- Expected to be realised within twelve months after the reporting year, or
- A Cash or cash equivalent unless restricted from being exchanged or used to settle a liability for at least twelve months after the reporting year

All other assets are classified as non-current.

A liability is current when:

- It is expected to be settled in the normal operating cycle
- It is held primarily for the purpose of trading
- It is due to be settled within twelve months after the reporting year, or
- There is no unconditional right to defer the settlement of the liability for at least twelve months after the reporting year

The Company classifies all other liabilities as non-current.

Deferred tax assets and liabilities are classified as non-current assets and liabilities.

Financial Instruments

A financial instrument is any contract that gives rise to a financial asset of one entity and a financial liability or equity instrument of another entity. Financial assets and financial liabilities are offset with the net amount reported in the consolidated balance sheet only if there is a current enforceable legal right to offset the recognised amounts and intent to settle on a net basis, or to realise the assets and settle the liabilities simultaneously.

(a) Financial assets

Initial recognition and measurement

Financial assets are classified, at initial recognition, as financial assets at fair value through profit or loss, loans and receivables, held-to-maturity investments, available-for-sale financial assets, or as derivatives designated as hedging instruments in an effective hedge, as appropriate. The Company determines the classification of its financial assets at initial recognition. All financial assets are recognised initially at fair value plus, in the case of assets not at fair value through profit or loss, transaction costs that are attributable to the acquisition of the financial asset. Purchases or sales of financial assets that require delivery of assets within a time frame established by regulation or convention in the marketplace (regular way trades) are recognised on the trade date, i.e., the date on which the Company commits to purchase or sell the asset.

The subsequent measurement and impairment of financial assets depends on their classification as described below:

Financial assets at fair value through profit or loss

Financial assets at fair value through profit or loss include financial assets held for trading and financial assets designated upon initial recognition at fair value through profit or loss. Financial assets are classified as held-for trading if they are acquired for the purpose of selling or re-purchasing in the near term. This category includes derivative financial instruments entered into by the Company that are not designated as hedging instruments in hedge relationships as defined by IAS 39. We use freestanding derivative forward contracts to offset exposure to the variability of the value associated with assets and liabilities denominated in a foreign currency. These derivatives are not designated as hedges, and therefore changes in the value of these forward contracts are recognised in income statement, thereby offsetting the current net income (loss) effect of the related change in value of foreign currency denominated assets and liabilities. The Company has not designated any financial assets as at fair value through profit or loss.

Loans and receivables

Loans and receivables are non-derivative financial assets with fixed or determinable payments that are not quoted in an active market. After initial measurement, such financial assets are subsequently measured at amortised cost using the effective interest rate method, less impairment. Amortised cost is calculated by taking into account any discount or premium on acquisition and fees or costs that are an integral part of the EIR. The EIR amortisation is included in finance income in the statement of profit or loss. The receivable balance consists of trade receivables from direct customers and distributors and loans issued. We maintain an expected credit loss provision for expected credit losses based on our estimates of the ability of customers to make required payments, historical credit experience, existing economic conditions and expected future trends. We write off uncollectable accounts against the provision when all reasonable collection efforts have been exhausted. Loans, together with the associated provision are written off when there is no realistic prospect of future recovery and all collateral has been realised or has been transferred to the

Company. The losses arising from impairment are recognised in the consolidated statement of (loss) income in cost of sales or other operating expenses for receivables. Refer to "Note 15. Trade Receivables and Other Receivables" for further information.

Available-for-sale financial investments

The Company has certain investments in equity and other securities of unquoted companies that are in varied stages of development. The investments in these companies are classified as available-for-sale and are valued based on non-market observable information. The valuation requires management to make certain assumptions about the model inputs, including forecast cash flows, the discount rate, credit risk and volatility. The probabilities of the various estimates within the range can be reasonably assessed and are used in management's estimate of fair value for these unquoted equity investments. All financial assets are held at fair value through profit and loss. These investments are included in non-current "Financial assets" on the consolidated balance sheet.

Derecognition

A financial asset (or, where applicable, a part of a financial asset or part of a group of similar financial assets) is derecognised when:

- The rights to receive cash flows from the asset have expired, or
- The Company has transferred its rights to receive cash flows from the asset or has assumed an obligation to pay the received cash flows in full without material delay to a third party under a `pass-through arrangement, and either (a) the Company has transferred substantially all the risks and rewards of the asset, or (b) the Company has neither transferred nor retained substantially all the risks and rewards of the asset, but has transferred control of the asset.

(b) Financial liabilities

Initial recognition and measurement

Financial liabilities are classified, at initial recognition, as financial liabilities at fair value through profit or loss, loans and borrowings (bank debt), payables, or as derivatives designated as hedging instruments in an effective hedge, as appropriate. All financial liabilities are recognised initially at fair value and, in the case of loans, borrowings and payables, net of directly attributable transaction costs. The Company's financial liabilities include trade and other payables, loans and bank debt including bank overdrafts, and derivative financial instruments.

The measurement of financial liabilities depends on their classification, as follows:

Financial liabilities at fair value through profit or loss

Financial liabilities at fair value through profit or loss include financial liabilities held-for-trading and financial liabilities designated upon initial recognition as at fair value through profit or loss. Financial liabilities are classified as held-for-trading if they are acquired for the purpose of selling in the near term. This category includes derivative financial instruments entered into by the Company that are not designated as hedging instruments in hedge relationships as defined by IAS 39, which the Company has elected to apply. Gains or losses on liabilities held-for-trading are recognised in the consolidated statement of (loss) income. Financial liabilities designated upon initial recognition at fair value through profit or loss are designated at the initial date of recognition, and only if the criteria in IAS 39 are satisfied. The Company has not designated any financial liabilities as at fair value through profit or loss.

Loans and borrowings (bank debt)

After initial recognition, interest bearing loans and borrowings are subsequently measured at amortised cost using the effective interest rate method. Gains and losses are recognised in the consolidated statement of (loss) income when the liabilities are de-recognised, as well as through the EIR method amortisation process. Amortised cost is calculated by taking into account any discount or premium on acquisition and fees or costs that are an integral part of the EIR. The EIR amortisation is included in finance costs in the consolidated statement of (loss) income.

Financial guarantee contracts

Financial guarantee contracts issued by the Company are those contracts that require a payment to be made to reimburse the holder for a loss it incurs, because the specified debtor fails to make a payment when due, in accordance with the terms of a debt instrument. Financial guarantee contracts are recognised initially as a liability at fair value, and then adjusted for transaction costs that are directly attributable to the issuance of the guarantee. Subsequently, the liability is measured at the higher of the best estimate of the expenditure required to settle the present obligation at the reporting date and the amount recognised less cumulative amortisation.

Derecognition

A financial liability is de-recognised when the obligation under the liability is discharged, cancelled or expires. When an existing financial liability is replaced by another from the same lender on substantially different terms, or the terms of an existing liability are substantially modified, such an exchange or modification is treated as a de-recognition of the original liability and the recognition of a new liability. The difference in the respective carrying amounts is recognised in the consolidated statement of (loss) income.

Derivative financial instruments and hedge accounting

We use currency exchange rate derivative contracts and interest rate derivative instruments to manage the impact of currency exchange and interest rate changes on the consolidated statement of (loss) income and the consolidated statement of cash flows. Derivatives are initially recognised at fair value on the date a derivative contract is entered into and are subsequently re-measured at fair value. The method of recognising the resulting gain or loss depends on whether the derivative is designated as a hedging instrument, and if so, the nature

of the item being hedged. We evaluate hedge effectiveness at inception and on an ongoing basis. If a derivative is no longer expected to be highly effective, hedge accounting is discontinued. Hedge ineffectiveness, if any, is recorded in the consolidated statement of (loss) income. Cash flows from derivative contracts are reported as operating activities in the consolidated statement of cash flows.

When a hedging instrument expires, is sold or is terminated, or when a hedge no longer meets the criteria for hedge accounting, any cumulative gain or loss existing in equity at that time remains in equity and is recognised when the forecast transaction is ultimately recognised in the consolidated statement of (loss) income. When a forecast transaction is no longer expected to occur, the cumulative gain or loss that was reported in equity is immediately reclassified to profit or loss.

In order to minimize income statement and cash flow volatility resulting from currency exchange rate changes, we enter into derivative instruments, principally forward currency exchange rate contracts. These contracts are designed to hedge anticipated foreign currency transactions and changes in the value of specific assets and liabilities and of some revenue. At inception of the forward contract, the derivative is designated as either a freestanding derivative or a cash flow hedge. For derivative instruments that are designated and qualify as a cash flow hedge, the effective portion of the gain or loss on the derivative instrument is reported as a component of accumulated other comprehensive income (loss) and reclassified to the consolidated statement of (loss) income to offset exchange differences originated by the hedged item or to adjust the value of net income (loss) from continuing operations. We do not enter into currency exchange rate derivative contracts for speculative purposes.

We use interest rate derivative instruments designated as cash flow hedges to manage the exposure to interest rate movements and to reduce the risk of increased borrowing costs, by converting floating-rate debt into fixed-rate debt. Under these agreements, we agree to exchange, at specified intervals, the difference between fixed and floating interest amounts, calculated by reference to agreed-upon notional principal amounts. The interest rate swaps are structured to mirror the payment terms of the underlying loan. The fair value of the interest rate swaps is reported in the consolidated balance sheets financial assets or liabilities (current or non-current) depending upon the gain or loss position of the contract and the maturity of the future cash flows of the fair value of each contract. The effective portion of the gain or loss on these derivatives is reported as a component of accumulated other comprehensive income (loss). The non-effective portion is reported in interest expense in the consolidated statement of (loss) income.

Cash and Cash Equivalents

We consider all highly liquid investments with an original maturity of three months or less, consisting of demand deposit accounts and money market mutual funds, to be cash equivalents. Cash equivalents are carried on the consolidated balance sheet at cost, which approximated their fair value.

Borrowing costs

General and specific borrowing costs that are directly attributable to the acquisition, construction or production of a qualifying asset are capitalised during the period of time that is required to complete and prepare the asset for its intended use or sale. Qualifying assets are assets that necessarily take a substantial period of time to get ready for their intended use or sale. Investment income earned on the temporary investment of specific borrowings pending their expenditure on qualifying assets is deducted from the borrowing costs eligible for capitalisation. Other borrowing costs are expensed in the year in which they are incurred.

Non-monetary assets

Property, Plant and Equipment

PP&E is carried at cost, less accumulated depreciation and any accumulated impairment losses. Maintenance and repairs, and minor replacements are charged to expense as incurred, while significant renewals and improvements are capitalized. We compute depreciation using the straight-line method over estimated useful lives. Where an item of PP&E comprises several parts with different useful lives, each part is recognised as a separate item and depreciated over its useful life. Useful life and residual value of PP&E are reviewed at each year-end. As necessary, the occurrence of changes to the useful life or residual value is recognised prospectively as a change in accounting estimates.

Leasehold improvements are depreciated over the shorter of the useful life of an asset or the lease term. Capital improvements to the building are added as building components and depreciated over the useful life of the improvement or the building, whichever is less.

The estimated useful lives for all classes of depreciable PP&E, except for land and capital investment in process which are not depreciated, as of 31 December 2018 are as follow:

	Lives in Years
Building and building improvements	3 to 39
Equipment, furniture, fixtures	2 to 13

Where there are any internal or external indications that the value of an item of PP&E may be impaired, the recoverable amount of the group of CGUs to which it belongs is calculated. If the recoverable amount is less than the carrying amount of the group of CGUs, a provision for impairment is recorded. PP&E is reviewed for impairment annually on 31st of December.

Assets held for sale

We classify long-lived assets as held for sale in the year in which we commit to a plan to sell the asset, the asset is available for immediate sale, the asset is being actively marketed for sale at a price that is reasonable in relation to its current fair value and the sale of the asset is probable within the next twelve months and when actions required to complete the plan indicate that it is unlikely that significant changes to the plan will be made or that the plan will be withdrawn. A long-lived asset classified as held for sale is measured at the lower of its carrying amount or fair value less cost to sell and depreciation is discontinued. We recognize an impairment for any excess of carrying value over the fair value less cost to sell.

Impairment of Intangible Assets and Goodwill

The Company assesses, at each reporting date, whether there is an indication that an asset may be impaired. If any indication exists, or when annual impairment testing for an asset is required, the Company estimates the asset's recoverable amount. An asset's recoverable amount is the higher of an asset's CGU's fair value less costs of disposal and its value in use. It is determined for an individual asset, unless the asset does not generate cash inflows that are largely independent of those from other assets or groups of assets. Where the carrying amount of an asset or CGU exceeds its recoverable amount, the asset is considered impaired and is written down to its recoverable amount.

The methodology applied to our CGU's value in use calculations, reflecting past experience and external sources of information, includes Board approved budgets based on pre-tax cash flows, utilizing discount rates and long-term growth rates. The methodology applied to our IPR&D value in use calculations is based on projected periods and includes a discounted cash flow model test, utilizing discount rates and a long-term growth rate. Goodwill impairment evaluations are highly subjective. In most instances, they involve expectations of future cash flows that reflect our judgements and assumptions regarding future industry conditions and operations. The estimates, judgements and assumptions used in the application of our goodwill impairment policies reflect both historical experience and an assessment of current operational, industry, market, economic and political environments. Quantitative factors used to determine the value in use of the CGU reflect our best estimates, and we believe they are reasonable. Future declines in the CGU's operating performance or our anticipated business outlook may reduce the estimated value in use of our CGU and result in additional impairment. Factors that could have a negative impact on the value in use of the reporting units include, but are not limited to:

- Decreases in revenue as a result of the inability of our sales force to effectively market and promote our products;
- Increased competition, patent expirations or new technologies or treatments;
- Declines in anticipated growth rates;
- The outcome of litigation, legal proceedings, investigations or other claims resulting in significant cash outflows; and
- Increases in the market-participant risk-adjusted WACC.

Generally, for intangible assets with a definite useful life, the Company uses cash flow projections for the whole useful life of these assets with a terminal value based on cash flow projections usually in line with or lower than inflation rates for later years.

Discount rates used are based on the Company's estimated weighted average cost of capital adjusted for specific country and currency risks associated with cash flow projections as an approximation of the weighted average cost of capital of a comparable market participant. Due to the above factors, actual cash flows and values could vary significantly from forecasted future cash flows and related values derived using discounting techniques.

Goodwill is tested for impairment annually as at 31 December and when circumstances indicate that the carrying value may be impaired. Impairment is determined for goodwill by assessing the recoverable amount of each CGU (or group of CGUs) to which the goodwill relates. Where the recoverable amount of the cash generating unit is less than their carrying amount, an impairment loss is recognised. Impairment losses relating to goodwill cannot be reversed in future years.

We conduct impairment testing of our indefinite-lived intangible assets on 31 December each year. We test indefinite-lived intangible assets for impairment between annual tests if an event occurs or circumstances change that would indicate the carrying amount may be impaired. An impairment loss is recognized when the asset's carrying value exceeds its fair value.

Research and Development

Research costs are recognised as an expense for the year in which they are incurred. R&D includes costs of basic research activities as well as engineering and technical effort required to develop a new product or make significant improvement to an existing product or manufacturing process. R&D costs also include regulatory and clinical study expenses, including post-market clinical studies.

Inventories

We state our inventories at the lower of cost, using the first-in first-out, and net realizable value. Our calculation of cost includes the acquisition cost of raw materials and components, direct labour and overhead. We reduce the carrying value of inventories for those items that are potentially excess, obsolete or slow moving based on changes in customer demand, technology developments or other economic factors.

Revenue Recognition

On 1 January 2018, we adopted IFRS 15, *Revenue from Contracts with Customers*. Refer to "Note 3. Revenue Recognition." We elected the modified retrospective transition method; however, we recognized no cumulative effect to the opening balance of retained earnings because the impact on the timing of when revenue is recognized within our Cardiovascular ("CV") segment, specifically related to heart-lung machines

and preventative maintenance contracts on cardiopulmonary equipment, was insignificant. The timing of revenue recognition for products and related revenue streams within our Neuromodulation ("NM") segment and discontinued operations did not change. Prior to the adoption of IFRS 15 on January 1, 2018, the Company accounted for revenue recognition under IAS 18, *Revenue*.

Defined Benefit Pension Plans and Other Post-Employment Benefits

The Company sponsors various retirement benefit plans, including defined benefit pension plans (pension benefits), defined contribution savings plans and termination indemnity plans, covering substantially all U.S. employees and employees outside the U.S. The cost of providing benefits under the defined benefit plans is determined separately for each plan using the projected unit credit method.

Re-measurements, comprising of actuarial gains and losses, the effect of the asset ceiling (excluding amounts included in net interest on the net defined benefit liability) and the return on plan assets (excluding amounts included in net interest on the net defined benefit liability), are recognised immediately in the consolidated balance sheet with a corresponding debit or credit to retained earnings through OCI in the year in which they occur. Re-measurements are not reclassified to profit or loss in subsequent years.

Past service costs are recognised in profit or loss on the earlier of:

- The date of the plan amendment or curtailment, and
- The date on which the Company recognises related restructuring costs

Net interest is calculated by applying the discount rate to the net defined benefit liability or asset. The Company recognises the following changes in the net defined benefit obligation under cost of sales and selling, general and administrative expenses in the consolidated statement of (loss) income (by function):

- Service costs comprising current service costs, past-service costs, gains and losses on curtailment and non-routine settlements
- Net interest expense or income

Provision for severance indemnity is mandatory for Italian companies and is considered:

- a defined benefit plan with respect to amounts vested up to 31 December 2006 and amounts vesting from 1 January 2007 for employees who have chosen to maintain the TFR at the company, for companies with 50 or fewer employees;
- a defined contribution plan with respect to amounts vesting as from 1 January 2007 for employees who have opted for supplementary pensions or who have chosen to maintain the TFR at the company, for companies with more than 50 employees.

As a defined benefit plan, the TFR is measured using the unit credit projection method based on actuarial assumptions (demographic assumptions: mortality, turnover, disability of the population included in the above plan; financial assumptions: discount rate, benefit growth rate, capitalization rate). The increase in the present value of the TFR is included in personnel expense, with the exception of the revaluation of the net liability, which is recorded among items of other comprehensive income. The cost of TFR accrued through 31 December 2006 no longer includes the component related to future salary increases. Payments of TFR, as a defined contribution plan, are also included in personnel expense, and until they are settled financially, they have a balancing entry in the statement of financial position in the form of current payables.

Share-Based Compensation

We grant share-based incentive awards to directors, officers, key employees and consultants during each fiscal year. We measure the cost of employee services received in exchange for an award of equity instruments based on the grant date fair market value of the award. The cost of equity-settled transactions is recognised in employee benefits expense, together with a corresponding increase in Retained earnings over the period in which the service and the performance conditions are fulfilled (the vesting period). The cumulative expense recognised for equity-settled transactions at each reporting date until the vesting date reflects the extent to which the vesting period has expired and the Company's best estimate of the number of equity instruments that will ultimately vest. We issue new shares upon stock option exercises, otherwise issuance of stock for vesting of restricted stock, restricted stock units or exercises of stock appreciation rights are issued from treasury shares. We have the right to elect to pay the cash value of vested restricted stock units in lieu of the issuance of new shares. The social security contributions on employee share-based payment awards are accrued over the service period.

The following share-based incentive awards are offered by the Company:

- ***Share Appreciation Rights.*** A SAR confers upon an employee the contractual right to receive an amount of cash, share, or a combination of both that equals the appreciation in the Company's common share from an award's grant date to the exercise date. SARs may be exercised at the employee's discretion during the exercise period and do not give the employee an ownership right in the underlying share. The SARs may be settled in LivaNova shares and/or cash, as determined by LivaNova and as set forth in the individual award agreements. SARs do not involve payment of an exercise price. We use the Black-Scholes option pricing methodology to calculate the grant date fair market value of SARs. We determine the expected volatility on historical volatility.
- ***Restricted Share and Restricted Share Units.*** We may grant RS and RSUs at no purchase cost to the grantee. The grantees of unvested RSUs have no voting rights or rights to dividends.

Sale or transfer of the stock and stock units is restricted until they are vested. The fair market value of service-based RS and RSUs is determined using the market closing price on the grant date, and compensation is expensed ratably over the vesting period. Calculation of compensation for stock awards requires estimation of employee turnover and forfeiture rates. We have the right to elect to pay the cash value of vested restricted share units in lieu of the issuance of new shares. Under our share-based compensation plans we re-purchase a portion of these shares from our employees to permit our employees to meet their minimum statutory tax withholding requirements on vesting of their restricted share.

- ***Market and Performance-Based Restricted Share and Performance-Based Restricted Share Units.*** We may grant restricted share and restricted share units subject to market or performance conditions that vest based on the satisfaction of the conditions of the award. The fair market values of market condition-based awards are determined using the Monte Carlo simulation method. The Monte Carlo simulation method is subject to variability as several factors utilized must be estimated, including the derived service period, which is estimated based on our judgement of likely future performance and our share price volatility. The fair value of performance-based awards is determined using the market closing price on the grant date. Derived service periods and the periods charged with compensation expense for performance-based awards are estimated based on our judgement of likely future performance and may be adjusted in future periods depending on actual performance.

Income Taxes

The tax expense for the year comprises current and deferred tax. Current and deferred tax is recognised in profit or loss, except to the extent that it relates to items recognised in other comprehensive income or directly in equity. In this case, the tax is also recognised in other comprehensive income or directly in equity, respectively.

The income tax expense or credit for the year is the tax payable on the current year's taxable income based on the applicable income tax rate for each jurisdiction, adjusted by changes in deferred tax assets and liabilities attributable to temporary differences and to unused tax losses.

The current income tax charge is calculated on the basis of the tax laws enacted or substantively enacted at the end of the reporting year in the countries where the company's subsidiaries and associates operate and generate taxable income. The Company is subject to taxation on earnings in several countries under various tax regulations. Calculation of taxes on a global scale requires the use of estimates and assumptions developed based on the information available at the balance sheet date. Management establishes provisions where appropriate on the basis of amounts expected to be paid to the tax authorities.

Deferred taxes are recognised by the liability method for temporary differences between the carrying amount of assets and liabilities in the consolidated balance sheet and their tax base. They are measured at the tax rates that are expected to apply to the year when the asset is realized or the liability is settled, based on tax rates (and tax laws) that have been enacted or substantively enacted at the balance sheet date. Adjustments to deferred taxes resulting from changes in tax rates are recognised in profit or loss. However, when the deferred tax relates to items recognised in equity, the adjustment is also recognised in equity. A deferred tax asset is recognised for all deductible temporary differences to the extent that it is probable that taxable profit will be available against which the deductible temporary difference can be utilized. At each year-end, the Company reviews the recoverable value of deferred tax assets of tax entities holding significant loss carryforwards. This value is based, by tax entity, on the strategy for recoverability of the tax loss carryforwards. Deferred taxes are charged or credited directly to equity when the tax relates to items that are recognised directly in equity, such as gains and losses on cash flow hedges and actuarial gains and losses on defined benefit plan obligations. Deferred tax assets and liabilities are set off when they are levied on the same taxable entity (legal entity or tax group) by the same taxation authority and the entity has a legally enforceable right of set off. Deferred taxes are recognised for all temporary differences associated with investments in subsidiaries and associates, except to the extent that the Company is able to control the timing of the reversal of the temporary difference and it is probable that the temporary difference will not reverse in the foreseeable future. Deferred tax balances are not discounted.

Leases

We account for leases that transfer substantially all risks and rewards incident to the ownership of property as an acquisition of an asset and the incurrence of an obligation, and we account for all other leases as operating leases. Certain of our leases provide for tenant improvement allowances that have been recorded as deferred rent and amortized, using the straight-line method, over the life of the lease as a reduction to rent expense. In addition, scheduled rent increases and rent holidays are recognised on a straight-line basis over the term of the lease.

Equity

Ordinary Shares are classified as equity. Incremental costs directly attributable to the issue of new shares or options are shown in equity as a deduction, net of tax, from the proceeds.

Where any group company purchases the Company's equity instruments, for example as the result of a share buy-back or a share-based payment plan, the consideration paid, including any directly attributable incremental costs (net of income taxes) is deducted from equity attributable to the owners of LivaNova as treasury share until the shares are cancelled or reissued. Where such Ordinary Shares are subsequently reissued,any consideration received, net of any directly attributable incremental transaction costs and the related income tax effects, is included in equity attributable to the owners of LivaNova.

Provisions and warranties

Provisions for legal claims, service warranties and make good obligations are recognised when the Company has a present legal or constructive obligation as a result of past events, it is probable that an outflow of resources will be required to settle the obligation and the amount can be reliably estimated. Provisions are not recognised for future operating losses. Where there are a number of similar obligations, the likelihood that an outflow will be required in settlement is determined by considering the class of obligations as a whole. A provision is recognised even if the likelihood of an outflow with respect to any one item included in the same class of obligations may be small.

Provisions are measured at the present value of management's best estimate of the expenditure required to settle the present obligation at the end of the reporting year. The discount rate used to determine the present value is a pre-tax rate that reflects current market assessments of the time value of money and the risks specific to the liability. The increase in the provision due to the passage of time is recognised as interest expense.

The Company offers a warranty on various products. The Company estimates the costs that may be incurred under warranties and records a liability in the amount of such costs at the time the product is sold. The amount of the reserve recorded is equal to the net costs to repair or otherwise satisfy the claim. The warranty obligation is included in accrued liabilities on the consolidated balance sheet. Warranty expense is recorded to cost of sales in the consolidated statement of (loss) income.

Contingent Consideration

Contingent consideration is recognized at fair value at the date of acquisition based on the consideration expected to be transferred and estimated as the probability of future cash flows, discounted to present value in accordance with accepted valuation methodologies. The discount rate used is determined at the time of measurement. Contingent consideration is remeasured each reporting year with the change in fair value, including accretion for the passage of time, recorded in earnings. The change in fair value of contingent consideration based on the achievement of regulatory milestones is recorded as research and development expense while the change in fair value of sales-based earnout contingent consideration is recorded as cost of sales.

Product Liability Accruals

Accruals for product liability claims are recorded when it is probable that a liability has been incurred and the amount of the liability can be reasonably estimated based on existing information. Accruals for product liability claims are adjusted periodically as additional information becomes available. The Company accrues an estimate of the legal defense costs needed to defend each matter when those costs are probable and can be reasonably estimated.

Contingencies

The Company is subject to product liability claims, government investigations and other legal proceedings in the ordinary course of business. Legal fees and other expenses related to litigation are expensed as incurred and included in selling, general and administrative expenses in the consolidated statement of (loss) income. Contingent accruals are recorded when the Company determines that a loss is both probable and reasonably estimable. Due to the fact that legal proceedings and other contingencies are inherently unpredictable, our assessments involve significant judgement regarding future events.

Earnings Per Share

Basic (loss) earnings per share is calculated by dividing the (loss) income for the year attributable to equity holders of the parent by the weighted average number of shares outstanding during the year. Diluted EPS is calculated by dividing the income (loss) attributable to equity holders of the parent by the weighted average number of shares outstanding during the year plus the weighted average number of shares that would be issued on conversion of all the dilutive potential shares into shares. Refer to "Note 26. Earnings Per Share" for additional information.

Segments

LivaNova is comprised of two principal business franchises, which are also our operating segments: Cardiovascular and Neuromodulation, corresponding to our primary therapeutic areas. Other corporate activities include corporate business development and New Ventures, focused on new growth platforms and identification of other opportunities for expansion.

For further information regarding our business segments, historical financial information and our methodology for the presentation of financial results, please refer to "Note 27. Segment and Geographic Information" for additional information.

Critical Estimates and Judgements

The preparation of our consolidated financial statements in conformity with IFRS requires management to make estimates and judgements that affect the amounts reported in such financial statements and accompanying notes. These estimates and judgements are based on management's best knowledge of current events and actions we may undertake in the future. Actual results could differ materially from those estimates. Application of the following accounting policies requires certain judgements and estimates that have the potential for the most significant impact on our consolidated financial statements:

Critical Estimates

- ***Impairment of non-financial assets.*** An impairment exists when the carrying value of an asset or cash generating unit exceeds its recoverable amount, which is generally based on available data from binding sales transactions, conducted

at arm's length for similar assets, observable market prices less incremental costs for disposing of the asset or based on a discounted cash flow model. The discounted cash flow model is most sensitive to the discount rate used as well as the expected future cash inflows and the growth rate used for extrapolation purposes. Refer to disclosure in "Note 11. Goodwill and Intangible Assets" where reasonably possible changes in key assumptions could affect the carrying value.

- ***Retirement and Other Post-Employment Benefit Plans.*** We sponsor pension and other post-employment benefit plans in various forms that cover a significant portion of our current and former associates. For post-employment plans with defined benefit obligations, we are required to make significant assumptions and estimates about future events in calculating the expense and the present value of the liability related to these plans. These include assumptions about the interest rates we apply to estimate future defined benefit obligations and net periodic pension expense as well as rates of future pension increases. In addition, our actuarial consultants provide our management with historical statistical information, such as withdrawal and mortality rates in connection with these estimates. Assumptions and estimates used by the Company may differ materially from the actual results we experience due to changing market and economic conditions, higher or lower withdrawal rates, and longer or shorter life spans of participants among other factors. For more information on obligations under retirement and other post-employment benefit plans, underlying actuarial assumptions and sensitivity analysis, see ''Note 23. Employee Retirement Plans.''
- ***Goodwill and Intangible Assets - In-process research and development***. Goodwill and in-process R&D were recognized as part of the acquisitions of Caisson, ImThera and TandemLife, based on detailed valuations that use information and assumptions provided by management, which consider management's best estimates of inputs and assumptions that a market participant would use. The key estimates in the valuation include the discount rate and the expected future cash inflows.

Critical Judgements

- ***Commitments and Contingencies***. A number of LivaNova subsidiaries are involved in various government investigations and legal proceedings (product liability, commercial, employment, environmental claims, etc.) arising out of the normal conduct of their businesses. The outcome of these matters is not certain and judgement is required in determining whether these matters require the recognition of a liability. The most significant matter considered in the year relates to the product remediation plan for our 3T device. For more information, see ''Note 25. Commitments and Contingencies.''
- ***Taxes.*** We prepare and file our tax returns based on an interpretation of tax laws and regulations and record estimates based on these judgements and interpretations. Our tax returns are subject to examination by the competent taxing authorities, which may result in an assessment being made requiring payments of additional tax, interest or penalties. See "Note 24. Income Taxes" and "Note 25. Commitments and Contingencies."
- ***Exceptional Items.*** Exceptional items are expense or income items which have been determined by management as being material by their size or incidence and are presented separately within the results of the group. The determination of which items are disclosed as exceptional items will affect the presentation of profit measures and requires a degree of judgement. Details relating to exceptional items reported during the year are set out in "Note 31. Exceptional Items."

Note 3 Revenue Recognition

We generate our revenue through contracts with customers that primarily consist of hospitals, healthcare institutions, distributors and other organizations. Revenue is measured based on consideration specified in a contract with a customer, and excludes amounts collected on behalf of third parties. We measure the consideration based upon the estimated amount to be received. The amount of consideration we ultimately receive varies depending upon the return terms, sales rebates, discounts, and other incentives that we may offer, which are accounted for as variable consideration when estimating the amount of revenue to recognize. The estimate of variable consideration requires judgement.

We have historically experienced a low rate of product returns and the total dollar value of product returns has not been significant to our consolidated financial statements.

We recognize revenue when a performance obligation is satisfied by transferring the control of a product or providing service to a customer. Some of our contracts include the purchase of multiple products and/or services. In such cases, we allocate the transaction price based upon the relative estimated stand-alone price of each product and/or service sold. We exclude sales tax from revenue. Typically, our contracts do not have a significant financing component.

We incur incremental commission fees paid to the sales force associated with the sale of products. We apply the practical expedient within IFRS 15 and have elected to recognize the incremental costs of obtaining a contract as an expense when incurred if the amortization period of the asset the entity would otherwise recognize is one year or less. As a result, no commissions are capitalized as contract costs at 31 December 2018.

The following is a description of the principal activities (separated by operating segments) from which we generate our revenue. For more detailed information about our operating segments including disaggregated revenue results by major product line and primary geographic markets, see "Note 27. Segment and Geographic Information."

Cardiovascular Products and Services

Our CV segment has three primary product lines: cardiopulmonary products, heart valves and advanced circulatory support.

Cardiopulmonary products include oxygenators, heart-lung machines, autotransfusion systems, perfusion tubing systems, cannulae and other related accessories. Heart valves include mechanical heart valves, tissue heart valves and related repair products. Advanced circulatory support, which represents our recently acquired TandemLife business, includes temporary life support product kits that can include a combination of pumps, oxygenators, and cannulae.

Cardiopulmonary products may include performance obligations associated with assembly and installation of equipment. Accordingly, we allocate a portion of the sales prices to installation obligations and recognize that revenue when the service is provided. We recognize revenue for equipment and accessory product sales when control of the equipment or product passes to the customer.

Heart valve revenue is recognized when control passes to the customer, usually at the point of surgery.

Advanced circulatory support revenue is recognized when control passes to the customer, usually at the point of shipment.

Technical services include installation, repair and maintenance of cardiopulmonary equipment under service contracts or upon customer request. Technical service agreements generally provide for upfront payments in advance of rendering services or periodic billing over the contract term. Amounts billed in advance are deferred and recognized as revenue when the performance obligation is satisfied. Technical services are not a significant component of CV revenue and have been presented with the related equipment and accessories revenue.

Neuromodulation Products

NM segment products are comprised of NM therapy systems for the treatment of drug-resistant epilepsy, TRD and obstructive sleep apnea. Our NM product line includes the VNS Therapy System, which consists of an implantable pulse generator, a lead that connects the generator to the vagus nerve, and other accessories. Our NM product line also includes an implantable device for the treatment of obstructive sleep apnea that stimulates multiple tongue muscles via the hypoglossal nerve, which opens the airway while a patient is sleeping. We recognize revenue for NM product sales when control passes to the customer.

Contract Balances

Due to the nature of our products and services, revenue producing activities may result in contract assets and contract liabilities which are insignificant to our financial position and results of operations. These activities relate primarily to CV technical services contracts for short-term and multi-year service agreements. Contract assets are primarily comprised of unbilled revenues, which occur when a performance obligation has been completed, but not billed to the customer. Contract liabilities are made up of deferred revenue, which occurs when a customer pays for a service, before a performance obligation has been completed. Contract assets are included within prepaid expenses and other current assets on the consolidated balance sheets and were insignificant at 31 December 2018 and 31 December 2017. As of 31 December 2018 and 31 December 2017, contract liabilities of $4.8 million and $3.8 million, respectively, are included within accrued liabilities and other and other long-term liabilities on the consolidated balance sheets.

Note 4 Financial Risk Management

Management of Financial Risk

Increasing market fluctuations may result in significant earnings and cash flow volatility risk for LivaNova. The Company's operating business as well as its investment and financing activities are affected particularly by changes in foreign exchange rates, interest rates and concentration of procurement suppliers. In order to optimize the allocation of the financial resources across the LivaNova franchises and entities, as well as to achieve its aims, LivaNova identifies, analyses and manages the associated market risks. The Company seeks to manage and control these risks primarily through its regular operating and financing activities, and uses derivative financial instruments when deemed appropriate.

The Company's CFO oversees the management of these risks. The CFO is supported by a senior financial management team that advises on financial risks and the appropriate financial risk governance framework for the Company. The senior financial management team provides assurance to the Company's senior management that the Company's financial risk activities are governed by appropriate policies and procedures and that financial risks are identified, measured and managed in accordance with policies and risk appetite. All derivative activities for risk management purposes are carried out by teams that have the appropriate skills, experience and supervision. It is the Company's policy that no trading in derivatives for speculative purposes may be undertaken. Intercompany financing or investments of operating units are preferably carried out in their functional currency or on a hedged basis. The Board of Directors reviews and agrees to policies for managing each of these risks.

Liquidity Risk

Liquidity risk results from the Company's inability to meet its financial liabilities. LivaNova follows a financing policy that is aimed towards a balanced financing portfolio, a diversified maturity profile and a comfortable liquidity cushion. LivaNova mitigates liquidity risk by the implementation of an effective working capital and centralized cash management and arranged credit facilities with highly rated financial institutions. In addition, LivaNova constantly monitors funding options available in the capital markets, as well as trends in the availability and costs of such funding, with a view to maintaining financial flexibility and limiting repayment risks.

The following tables reflect the undiscounted cash outflows related to settlement and repayments, of the Company's financial liabilities at a balance sheet date. The disclosed expected undiscounted net cash outflows from derivative financial liabilities are determined based on each particular settlement date of an instrument and based on the earliest date on which LivaNova could be required to pay. Cash outflows for financial liabilities without fixed amount or timing are based on the conditions existing at the respective balance sheet date.

Contractual undiscounted cash outflows were as follows (in thousands):

	31 December 2018				
	Due Within 1 Year	1-2 Years	2-5 Years	Over 5 Years	Total
Non-derivative financial instruments					
Trade payables	$ 75,182	$ –	$ –	$ –	$ 75,182
Financial liabilities	28,794	36,540	62,599	40,399	168,332
TOTAL	**$ 103,976**	**$ 36,540**	**$ 62,599**	**$ 40,399**	**$ 243,514**
Financial derivative liabilities					
– on exchange risk	$ 4,527	$ –	$ –	$ –	$ 4,527
– on rate risk	536	281	48	–	865
TOTAL	**$ 5,063**	**$ 281**	**$ 48**	**$ –**	**$ 5,392**

	31 December 2017				
	Due Within 1 Year	1-2 Years	2-5 Years	Over 5 Years	Total
Non-derivative financial instruments					
Trade payables	$ 84,716	$ –	$ –	$ –	$ 84,716
Financial liabilities	84,034	21,026	38,456	2,476	145,992
TOTAL	**$ 168,750**	**$ 21,026**	**$ 38,456**	**$ 2,476**	**$ 230,708**
Financial derivative liabilities					
– on exchange risk	$ 460	$ –	$ –	$ –	$ 460
– on rate risk	834	506	245	–	1,585
TOTAL	**$ 1,294**	**$ 506**	**$ 245**	**$ –**	**$ 2,045**

Foreign Currency Exchange Rate Risk

Foreign exchange risk is the risk that reported financial performance of the fair value of future cash flows of a financial instrument will fluctuate because of changes in foreign exchange rates. LivaNova operates in many countries and currencies and therefore currency fluctuations may impact LivaNova's financial results. In the ordinary course of business LivaNova is exposed to foreign currency exchange rate fluctuations, particularly between the USD, Euro, Canadian Dollar, GBP and Japanese Yen. LivaNova is exposed to currency risk in the following areas:

- Transaction exposures, related to anticipated sales and purchases and on-balance-sheet receivables/ payables resulting from such transactions
- Translation exposure of foreign-currency intercompany and external debt
- Translation exposure of net income in foreign entities
- Translation exposure of foreign-currency denominated equity invested in consolidated companies

It is LivaNova's policy to reduce the potential year on year volatility caused by foreign-currency movements on its net earnings by hedging the anticipated net exposure of foreign currencies resulting from foreign-currency sales and purchases. Intercompany financing or investments of operating units are preferably carried out in their functional currency or on a hedged basis. Additionally, foreign currency exchange rate exposure is partly balanced by purchasing of goods, commodities and services in the respective currencies, as well as production activities in the local markets. LivaNova's operating units are prohibited from borrowing or investing in foreign currencies on a speculative basis. The target is to keep up to 80% of consolidated EBITDA denominated in material currencies, hedged against USD, LivaNova's reporting currency. At 31 December 2018, cash flow hedge is carried out for FX net risk positions denominated in Euro, Japanese Yen, Canadian Dollar and the GBP.

Based on our exposure to foreign currency exchange rate risk, a sensitivity analysis indicates that if the USD had uniformly strengthened by 10% against the Canadian Dollar, GBP, EUR and the Japanese Yen, in the year ended 31 December 2018, the effect on our unrealised income, for our derivatives outstanding at 31 December 2018, would have been approximately $(0.7) million; if the USD had uniformly weakened by 10% against the same currencies, the effect on our unrealized expenses for our derivatives outstanding at 31 December 2018 would have been approximately $0.9 million.

Any gains and losses on the fair value of derivative contracts would generally be offset by gains and losses on the underlying transactions. These offsetting gains and losses are not reflected in the above analysis.

With regard to financial instruments denominated in currencies other than the currency of account of the companies holding them, the currencies involving the greatest exposure are the USD, Euro, GBP and Japanese Yen as indicated below (in thousands):

	31 December 2018					
	EUR	USD	JPY	GBP	Other	Total
ASSETS						
Cash and cash equivalents denominated in foreign currency	$ 88	$ 6,557	$ 2,399	$ 1,536	$ 6,816	$ 17,396
Trade receivables denominated in foreign currency	658	34,707	810	950	9,191	46,316
Financial assets denominated in foreign currency	—	—	—	—	23	23
Other assets denominated in foreign currency	95	1,567	—	100	63	1,825
Total assets	841	42,831	3,209	2,586	16,093	65,560
LIABILITIES						
Trade payables denominated in foreign currency	(693)	9,801	62	971	(245)	9,896
Financial liabilities denominated in foreign currency	151,176	115	—	—	—	151,291
Other liabilities denominated in foreign currency	2,077	2,693	—	5,028	70	9,868
Total liabilities	152,560	12,609	62	5,999	(175)	171,055
NET EXPOSURE	**$ (151,719)**	**$ 30,222**	**$ 3,147**	**$ (3,413)**	**$ 16,268**	**$ (105,495)**
Financial derivative assets						
– not for hedging[1]	$ —	$ —	$ —	$ 236	$ —	$ 236
Financial derivative liabilities						
– not for hedging[1]	—	(287)	(255)	14	3,701	3,173
– for hedging	815	—	485	340	(286)	1,354
Total liabilities	815	(287)	230	354	3,415	4,527
NET EXPOSURE	**$ (815)**	**$ 287**	**$ (230)**	**$ (118)**	**$ (3,415)**	**$ (4,291)**

(1) For hedging transactions that do not meet the requirements for hedge accounting.

	31 December 2017					
	EUR	USD	JPY	GBP	Other	Total
ASSETS						
Cash and cash equivalents denominated in foreign currency	$ 21	$ 58,840	$ 3,220	$ 1,268	$ 5,654	$ 69,003
Trade receivables denominated in foreign currency	661	30,705	898	–	1,658	33,922
Financial assets denominated in foreign currency	–	417	–	–	–	417
Other assets denominated in foreign currency	12	881	–	122	135	1,150
Total assets	694	90,843	4,118	1,390	7,447	104,492
LIABILITIES						
Trade payables denominated in foreign currency	2,109	5,754	36	7,549	167	15,615
Financial liabilities denominated in foreign currency	69,894	204	–	–	–	70,098
Other liabilities denominated in foreign currency	208	585	–	4,402	267	5,462
Total liabilities	72,211	6,543	36	11,951	434	91,175
NET EXPOSURE	**$ (71,517)**	**$ 84,300**	**$ 4,082**	**$ (10,561)**	**$ 7,013**	**$ 13,317**
Financial derivative assets not for hedging[1]	$ –	$ (351)	$ 44	$ (405)	$ 1,232	$ 520
Financial derivative liabilities for hedging[1]	–	–	(505)	559	406	460
NET EXPOSURE	**$ –**	**$ (351)**	**$ 549**	**$ (964)**	**$ 826**	**$ 60**

(1) For hedging transactions that do not meet the requirements for hedge accounting.

Interest Rate Risk

The Company's main interest rate risk arises from long-term debt with variable rates, which expose the Company to cash flow interest rate risk. LivaNova's policy is to hedge, case by case, medium-long term loans from a floating to a fixed rate, to avoid the impact on net earnings of any potential increase of interest rates. During the year ended 31 December 2018, the Company's debt at variable rates was denominated both in EUR and in USD.

As at 31 December 2018, LivaNova Group had the following financing denominated in USD:

- a local credit facility in favour of LivaNova Columbia for an amount of $750,000,
- Medium-long term loans from EIB (2017 European Investment Bank) totalling $103.6 million.

As at 31 December 2017, LivaNova Group had the following financing denominated in USD:

- a local credit facility in favour of LivaNova Columbia for an amount of $770,000,
- a revolving credit facility of $20 million with Barclays Bank in favour of LivaNova PLC.

We manage a portion of our interest rate risk with contracts that swap floating-rate interest payments for fixed rate interest payments.

As at 31 December 2018 and 31 December 2017, the Company had outstanding derivative contracts to hedge against the risk of interest rate fluctuations in notional amounts of $38.1 million and $56.0 million, respectively, equal to about 23% and 38% of consolidated financial liabilities, respectively.

As at 31 December 2018, if interest rates on Euro-denominated floating rate debt had been 10 basis points higher or lower with all other variables held constant, the calculated post-tax profit for the year would have been approximately $38,000 lower or higher, mainly as a result of higher or lower interest expense on the debt. Other components of equity would have been $261,000 lower as a result of an increase in the interest rate curve with a positive impact on the fair value of our fixed interest rate swaps (derivative designated for hedge accounting) or $26,000 higher as a result of an decrease in the interest rate curve with a negative impact on the fair value of our fixed interest rate swaps (derivatives designed for hedge accounting).

The following assumptions were used for the sensitivity analysis as at 31 December 2018:

- Unhedged financial liabilities: change of +0.10% - (0.10)% in the rate curve at 31 December 2018 relative to Euro rates;
- Hedged financial liabilities: change of +0.50% - (0.05)% in the rate curve at 31 December 2018 relative to Euro and USD rates.

The following assumptions were used for the sensitivity analysis as at 31 December 2017:

- Unhedged financial liabilities: change of +0.10% - (0.10)% in the rate curve at 31 December 2017 relative to Euro rates;
- Hedged financial liabilities: change of +0.50% - (0.05)% in the rate curve at 31 December 2017 relative to Euro and USD rates.

Credit Risk

Our trade receivables represent potential concentrations of credit risk. This risk is limited due to the large number of customers and their dispersion across a number of geographic areas, as well as our efforts to control our exposure to credit risk by monitoring our receivables, the use of credit approvals and credit limits. Refer to "Note 15. Trade Receivables and Other Receivables" for more details. In addition, we have historically had strong collections and minimal write-offs. While we believe that our reserves for credit losses are adequate, essentially all of our trade receivables are concentrated in the hospital and healthcare sectors worldwide, and accordingly, we are exposed to their respective business, economic and country-specific variables. Although we do not currently foresee a concentrated credit risk associated with these receivables, repayment is dependent on the financial stability of these industry sectors and the respective countries' national economies and healthcare systems.

The maximum theoretical credit risk exposure for LivaNova is an aggregate carrying amount of financial assets at each reporting year date (in thousands):

	31 December 2018	31 December 2017
Financial assets	$ 27,456	$ 44,184
Other assets	2,148	3,638
Trade receivables	256,135	282,145
Other receivables	28,621	24,519
Other financial assets	714	1,395
Cash and cash equivalents	47,204	93,615
Guarantees	46,653	49,217
TOTAL	**$ 408,931**	**$ 498,713**

The risk related to bank accounts, financial assets and assets for financial derivatives is limited since all bank and financial counter-parties have a high rating.

The guarantees issued by LivaNova are primarily due to unconditional bank guarantees, irrevocable letters of credit, bid bonds, guarantees to the governmental tax authorities and tenancy guarantees, and thus, the related credit risk is remote and has been remote as viewed on a historical basis.

Since LivaNova operates in the medical technology sector, there is not a significant risk of customer insolvency, a significant portion of which is related to government agencies, but they are subject to the risk related to cash requirements due to the high level of trade receivables owing to average collection periods (days of sales outstanding) and the ageing of these receivables.

Credit risk is managed on a group basis. For banks and financial institutions, only independently rated parties with a minimum investment grade credit rating are accepted.

For customers, if there is no independent rating, risk control assesses the credit quality of the customer, taking into account its financial position, past experience and other factors. Individual risk limits are set based on internal or external information in accordance with limits set by the Company's Treasury Group. The compliance with and authorization of credit limits by customers is regularly monitored by line management. Additionally, the Company established a policy for expected credit loss provisions, which provides the methodology to be used to calculate an addition to the provision for uncollectable receivables for past-due receivables for each LivaNova entity and the ageing of each receivable.

Changes in provisions for uncollectable receivables are explained in "Note 15. Trade Receivables and Other Receivables."

For the purposes of disclosing the credit risk to which LivaNova is exposed, below is a breakdown of trade receivables by due dates (in thousands):

	31 December 2018	31 December 2017
Trade receivables		
Performing	$ 195,196	$ 213,856
Less than 30 days past due	26,206	14,173
31-120 days past due	12,463	34,726
121-365 days past due	10,838	14,760
366-730 days past due	10,798	3,139
Over 730 days past due	634	1,491
TOTAL	**$ 256,135**	**$ 282,145**

Trade receivables that are past due were $60.9 million and $68.3 million at 31 December 2018 and 31 December 2017, respectively. Of this amount 26.8% and 23.5% at 31 December 2018 and 31 December 2017, respectively, are receivables from certain government hospitals that pay their suppliers in 1-2 years on average, and the remaining are receivables from private customers, clinics and distributors, most of which have agreed to repayment plans through the renegotiation of payment terms.

Trade receivables that are not past due and not written down were $195.2 million and $213.9 million at 31 December 2018 and 31 December 2017, respectively. Of this amount, 9.1% and 15.1% at 31 December 2018 and 31 December 2017, respectively, were the receivables from government (public) hospitals. As indicated in the following table (in thousands):

	31 December 2018			31 December 2017		
	Total	Performing	Past Due	Total	Performing	Past Due
By Sector						
Public	$ 34,165	$ 17,824	$ 16,341	$ 48,296	$ 32,223	$ 16,073
Private	221,970	177,372	44,598	233,849	181,633	52,216
TOTAL	**$ 256,135**	**$ 195,196**	**$ 60,939**	**$ 282,145**	**$ 213,856**	**$ 68,289**

Concentrations of risk by region are provided below to further assess the risk related to the trade receivables (in thousands except D.S.O.):

	31 December 2018				31 December 2017			
	D.S.O.	Total	Performing	Past Due	D.S.O.	Total	Performing	Past Due
By Region								
Italy	155	$ 16,301	$ 12,252	$ 4,049	191	$ 17,839	$ 12,623	$ 5,216
Spain	131	7,698	5,808	1,890	148	7,766	5,708	2,058
France	59	7,422	5,730	1,692	75	8,374	6,761	1,613
Germany	31	3,671	3,363	308	32	3,210	3,162	48
Rest of Europe	46	13,911	11,020	2,891	73	23,968	14,701	9,267
North America	57	97,101	74,789	22,312	81	134,831	112,226	22,605
Japan	105	12,951	13,266	(315)	80	9,939	9,939	–
Rest of world	157	97,080	68,968	28,112	161	76,218	48,736	27,482
TOTAL	**81**	**$ 256,135**	**$ 195,196**	**$ 60,939**	**96**	**$ 282,145**	**$ 213,856**	**$ 68,289**

Revenues are derived from a large number of customers with no customers being individually material.

The average collection period decreased from 96 days at 31 December 2017 to 81 days at 31 December 2018. The D.S.O. (days of sales outstanding), or average collection period, is calculated as the ratio of total receivables at the end of the year to revenues generated in the 12 preceding months. D.S.O. = (Trade receivables/Revenues) * 365.

For comparability the revenue amounts include VAT.

For the purposes of the disclosure of credit risk, there were no past-due balances of a significant amount related to other assets, other receivables and financial assets.

Capital management

LivaNova maintains a sufficient amount of capital to meet its development needs, fund the business units' operations and ensure the Company continues to be a going concern.

The equilibrium of sources of funding, which is also aimed at minimising overall capital costs, is achieved by balancing risk capital contributed on a permanent basis by shareholders, and debt capital, which is in turn diversified and structured with several due dates and in many currencies. To this end, changes in debt levels in relation to both equity and operating profit, and the generation of cash by the business units are constantly kept under control. Please refer to the sections above titled *"Management of Financial Risk," "Liquidity Risk," "Foreign Currency Exchange Rate Risk," "Interest Rate Risk"* and *"Credit Risk."*

Note 5 Fair Value Measurements

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants as of the measurement date. The guidance also establishes a hierarchy for inputs used in measuring fair value that maximises the use of observable inputs and minimises the use of unobservable inputs by requiring that the most observable inputs be used when available. Observable inputs are inputs market participants would use in valuing the asset or liability, based on market data obtained from sources independent of us. Unobservable inputs are inputs that reflect our assumptions about the factors market participants would use in valuing the asset or liability developed based upon the best information available in the circumstances. The categorization of financial assets and financial liabilities within the valuation hierarchy is based upon the lowest level of input that is significant to the fair value measurement. The hierarchy is broken down into three levels defined as follows:

- Level 1 – Inputs are quoted prices in active markets for identical assets or liabilities
- Level 2 – Inputs include quoted prices for similar assets or liabilities in active markets, quoted prices for identical or similar assets or liabilities in markets that are not active and inputs (other than quoted prices) that are observable for the asset or liability, either directly or indirectly
- Level 3 – Inputs are unobservable for the asset or liability

No assets or liabilities are classified as Level 1. Financial assets and liabilities that are classified as Level 2 include derivative instruments, primarily forward and option currency contracts and interest rate swaps contracts, which are valued using standard calculations and models that use readily observable market data as their basis. Level 3 assets include investments in private companies classified as AFS and level 3 liabilities consist of include contingent payments recognised as a result of the acquisition of Cellplex Pty Ltd. and Inversiones Drilltex SAS and contingent consideration recognized as a result of the acquisitions of Caisson, ImThera and TandemLife.

Assets and Liabilities That Are Measured at Fair Value on a Recurring Basis

The following tables provide information by level for assets and liabilities that are measured at fair value on a recurring basis (in thousands):

	Fair Value as at 31 December 2018	Fair Value Measurements Using Inputs Considered as: Level 1	Level 2	Level 3
Assets:				
Financial assets at fair value	$ 24,823	$ –	$ –	$ 24,823
Derivative Assets – not for hedging (exchange rates)	236	–	236	–
TOTAL ASSETS	$ 25,059	$ –	$ 236	$ 24,823
Liabilities:				
Derivative Liabilities – for hedging (exchange rates)	$ 1,354	$ –	$ 1,354	$ –
Derivative Liabilities – for hedging (interest rates)	865	–	865	–
Derivative Liabilities – not for hedging (exchange rates)	3,173	–	3,173	–
Earnout for contingent payments	179,911	–	–	179,911
TOTAL LIABILITIES	**$ 185,303**	**$ –**	**$ 5,392**	**$ 179,911**

	Fair Value as at 31 December 2017	Fair Value Measurements Using Inputs Considered as: Level 1	Level 2	Level 3
Assets:				
Available-for-sale financial assets	$ 39,965	$ –	$ –	$ 39,965
Assets held for sale	13,628	–	13,628	–
Derivative Assets – not for hedging (exchange rates)	519	–	519	–
TOTAL ASSETS	$ 54,112	$ –	$ 14,147	$ 39,965
Liabilities:				
Derivative Liabilities – for hedging (exchange rates)	$ 460	$ –	$ 460	$ –
Derivative Liabilities – for hedging (interest rates)	1,585	–	1,585	–
Earnout for contingent payments	33,973	–	–	33,973
TOTAL LIABILITIES	**$ 36,018**	**$ –**	**$ 2,045**	**$ 33,973**

Level 2

To measure the fair value of its derivative transactions (transactions to hedge exchange risk and interest rate risk), we calculate the mark-to-market of each transaction using prices quoted in active markets (e.g. the spot exchange rate of a currency for forward exchange transactions) and observable market inputs processed for the measurement (e.g. the fair value of an interest rate swap using the interest rate curve), or the measurement of an exchange rate option (with the processing of listed prices and observable variables such as volatility).

For all level 2 valuations, we use the information provided by a third-party as a source for obtaining quoted observable prices and to process market variables. In particular, we use the following techniques to calculate the fair value of derivatives:

- For forward exchange rate transactions, fair value is calculated using the forward market exchange rate on the reporting date for each contract. The difference calculated between this amount and the contractual forward rate is discounted (present value) to the same reporting date;
- For interest rate swaps, the fair value is calculated taking into account the present value of interest flows calculated on the notional amount of each contract using the forward interest rate curve applicable on the reporting date.

The derivative valuation models incorporate the credit quality of counterparts, adjustments for counterparts' credit risk and the Company's own non-performance risk.

Level 3

Available-for-sale investments are financial assets that consist of investments in equity shares and convertible preferred shares of privately held companies for which there are no quoted market prices. These investments fall within Level 3 of the fair value hierarchy due to the use of significant unobservable inputs to determine fair value as the investments are privately held entities without quoted market prices. To determine the fair value of these investments management used all pertinent financial information available related to the entities including valuation reports prepared by third parties. Refer to "Note 13. Financial Assets" for a further discussion of our available-for-sale investments.

Earnout for contingent payments represents our contingent consideration liability. This liability falls within Level 3 of the fair value hierarchy due to the use of significant unobservable inputs to determine fair value as the liability is estimated as the probability of future cash flows, discounted to present value in accordance with accepted valuation methodologies. The discount rate used is determined at the time of measurement. Refer to "Note 20. Contingent Consideration, Litigation Provision Liability and Other Provisions" for a reconciliation of the changes in the fair value of our contingent consideration liability.

Transfers

We review the fair value hierarchy classification on a quarterly basis. Changes in the ability to observe valuation inputs may result in a reclassification of levels for certain securities within the fair value hierarchy. Our policy is to recognise transfers into and out of levels within the fair value hierarchy at the end of the fiscal quarter in which the actual event or change in circumstances that caused the transfer occurs. There were no transfers between Level 1, Level 2 or Level 3 during the years ended 31 December 2018 and 31 December 2017. When a determination is made to classify an asset or liability within Level 3, the determination is based upon the significance of the unobservable inputs to the overall fair value.

Assets and Liabilities that are Measured at Fair Value on a Non-recurring Basis

Non-financial assets such as investments in shares that are accounted for using the cost or equity method, goodwill, intangible assets and property, plant and equipment are measured at fair value when there is an indicator of impairment and recorded at fair value only when impairment is recognised. The fair values of these non-financial assets are based on our own judgements about the assumptions that market participants would use in pricing the asset and on observable market data, when available. We classify these measurements as Level 3 within the fair value hierarchy.

During the year ended 31 December 2018, we acquired the remaining outside interests in ImThera Medical Inc. and as a result, we recognized an overall gain of $11.5 million for the fair value in excess of the cost of our investment of $14.1 million. $4.2 million of the overall gain is included in Gain on acquisitions on our consolidated statement of (loss) income for the year ended 31 December 2018. $7.3 million of the overall gain is recorded as an opening balance adjustment to retained earnings (deficit) upon the adoption of IFRS 9.

During the year ended 31 December 2017, we recorded an impairment of our investment in, and notes receivable from Highlife of $13.0 million; consisting of investment impairment of $4.7 million and the notes receivable impairment of $8.3 million.

In May 2017, we acquired the remaining equity interests in Caisson and we began consolidating the results of Caisson as of the acquisition date and recognized a pre-tax non-cash gain of $38.1 million.

Financial Instruments Not Measured at Fair Value

The carrying values of our cash and cash equivalents, accounts receivable, accounts payable and accrued liabilities approximate fair value due to the short-term nature of these items.

The carrying value of our long and short-term debt as of 31 December 2018 and 31 December 2017 was $168.3 million and $146.0 million, respectively, which we believe approximates fair value.

Note 6 Financial Instruments

The Company uses several instruments to fund its operating activities including short and long-term debt from credit institutions and other lenders and short-term bank loans. The Company's other financial instruments consist of trade payables and receivables resulting from operating activities, investments in other companies, assets and liabilities for financial derivatives (primarily interest rate swaps and forward foreign currency contracts) and other receivables and payables other than those related to staff, tax authorities and welfare agencies.

Classification of financial instruments

Upon the adoption of IFRS 9, the classification of financial instruments measured at fair value changed from being measured through OCI to being measured in the profit or loss. With regard to classification of financial instruments on the basis of the types as specified in IFRS 9, the following should be noted:

- Assets and liabilities for financial derivatives related to contracts entered into to mitigate exchange risk on imports and exports are classified under "Financial assets/liabilities at fair value through OCI" when they meet the requirements for being recognised as hedge accounting instruments, and under "Financial assets/liabilities at fair value through profit or loss" when these requirements are not met.
- Assets and liabilities for financial derivatives related to contracts entered into to mitigate interest rate risk are classified under "Financial assets/liabilities at fair value through OCI" when they meet the requirements for being recognised as hedge accounting instruments, and under "Financial assets/liabilities at fair value through profit or loss" when these requirements are not met.

Classification of Financial Instruments at 31 December 2018

	Classification						Carrying Amount			
(in thousands)	Financial Assets/ Liabilities at Fair Value Through Profit or Loss	Receivables and Loans Measured at Amortised Cost	Financial Assets Measured at Amortised Cost	Financial Assets at Fair Value Through Profit or Loss	Financial Liabilities at Amortised Cost	Financial Liabilities at Fair Value Through OCI	Total	Current Portion	Non-Current Portion	Fair Value
Assets										
Financial assets	$ —	$ —	$ 2,633	$ 24,823	$ —	$ —	$ 27,456	$ —	$ 27,456	$ 27,456
Other assets	—	2,148	—	—	—	—	2,148	—	2,148	2,148
Trade receivables	—	256,135	—	—	—	—	256,135	256,135	—	256,135
Other receivables	—	28,621	—	—	—	—	28,621	28,621	—	28,621
Financial derivative assets	236	—	—	—	—	—	236	236	—	236
Other financial assets	—	714	—	—	—	—	714	714	—	714
Cash and cash equivalents	—	47,204	—	—	—	—	47,204	47,204	—	47,204
TOTAL FINANCIAL ASSETS	**$ 236**	**$ 334,822**	**$ 2,633**	**$ 24,823**	**$ —**	**$ —**	**$ 362,514**	**$ 332,910**	**$ 29,604**	**$ 362,514**
Liabilities										
Financial liabilities	$ —	$ —	$ —	$ —	$ 162,841	$ —	$ 162,841	$ 23,303	$ 139,538	$ 163,169
Other liabilities	—	—	—	—	3,178	—	3,178	—	3,178	3,178
Trade payables	—	—	—	—	75,182	—	75,182	75,182	—	75,182
Other payables	—	—	—	—	69,238	—	69,238	69,238	—	69,238
Financial derivative liabilities	3,173	—	—	—	—	2,219	5,392	5,063	329	5,392
Other financial liabilities	—	—	—	—	5,491	—	5,491	5,491	—	5,491
TOTAL FINANCIAL LIABILITIES	**$ 3,173**	**$ —**	**$ —**	**$ —**	**$ 315,930**	**$ 2,219**	**$ 321,322**	**$ 178,277**	**$ 143,045**	**$ 321,650**

Classification of Financial Instruments at 31 December 2017

	Classification						Carrying Amount			
(in thousands)	Financial Assets/ Liabilities at Fair Value Through Profit or Loss	Receivables and Loans Measured at Amortised Cost	Financial Assets Measured at Amortised Cost	Financial Assets at Fair Value Through OCI	Financial Liabilities at Amortised Cost	Financial Liabilities at Fair Value Through OCI	Total	Current Portion	Non-Current Portion	Fair Value
Assets										
Financial assets	$ —	$ 1,276	$ 2,943	$ 39,965	$ —	$ —	$ 44,184	$ —	$ 44,184	$ 44,184
Other assets	—	3,638	—	—	—	—	3,638	—	3,638	3,638
Trade receivables	—	282,145	—	—	—	—	282,145	282,145	—	282,145
Other receivables	—	24,519	—	—	—	—	24,519	24,519	—	24,519
Financial derivative assets	519	—	—	—	—	—	519	519	—	519
Other financial assets	—	1,395	—	—	—	—	1,395	1,395	—	1,395
Cash and cash equivalents	—	93,615	—	—	—	—	93,615	93,615	—	93,615
TOTAL FINANCIAL ASSETS	**$ 519**	**$ 406,588**	**$ 2,943**	**$ 39,965**	**$ —**	**$ —**	**$ 450,015**	**$ 402,193**	**$ 47,822**	**$ 450,015**
Liabilities										
Financial liabilities	$ —	$ —	$ —	$ —	$ 87,802	$ —	$ 87,802	$ 25,844	$ 61,958	$ 87,802
Other liabilities	—	—	—	—	4,927	—	4,927	—	4,927	4,927
Trade payables	—	—	—	—	84,716	—	84,716	84,716	—	84,716
Other payables	—	—	—	—	50,137	—	50,137	50,137	—	50,137
Financial derivative liabilities	—	—	—	—	—	2,045	2,045	1,294	751	2,045
Other financial liabilities	—	—	—	—	58,190	—	58,190	58,190	—	58,190
TOTAL FINANCIAL LIABILITIES	**$ —**	**$ —**	**$ —**	**$ —**	**$ 285,772**	**$ 2,045**	**$ 287,817**	**$ 220,181**	**$ 67,636**	**$ 287,817**

Note 7 Business Combinations

Caisson

Caisson is focused on the design, development and clinical evaluation of a novel TMVR implant device with a fully transvenous delivery system for the treatment of MR.

On 2 May 2017, we acquired the remaining 51% equity interests in Caisson for a purchase price of up to $72.0 million, net of $6.3 million of debt forgiveness, consisting to $18.0 million paid at closing, $14.4 million paid during the year ended 31 December 2018, and contingent consideration of up to $39.6 million to be paid on a schedule driven primarily by regulatory approvals and a sales-based earnout.

The following table presents the acquisition date fair-value of the consideration transferred and the fair value of our interest in Caisson prior to the acquisition (in thousands):

Cash[1]	$ 16,216
Debt forgiven[2]	6,309
Deferred consideration[1]	13,455
Contingent consideration[1]	30,342
Fair value of consideration transferred	66,322
Fair value of our interest prior to the acquisition[2]	52,505
FAIR VALUE OF TOTAL CONSIDERATION	**$ 118,827**

(1) Concurrent with the acquisition, we recognized $3.7 million of post-combination compensation expense. Of this amount, $1.8 million is reflected as a reduction of $18.0 million in cash paid at closing of the acquisition, while $1.9 million increased the deferred consideration and contingent consideration liabilities recognized at the date of the acquisition to a total of $14.1 million and $31.7 million, respectively.

(2) On the acquisition date, we remeasured the notes receivable from Caisson and our existing investment in Caisson at fair value and recognized a pre-tax non-cash gain of $1.3 million and $38.1 million, respectively, which are included in Gain on acquisitions on our consolidated statement of (loss) income for the year ended 31 December 2017.

The purchase price allocation presented in the following table (in thousands) was finalised during the second quarter of 2018 and there were no adjustments to the preliminary purchase price allocation during the measurement period:

Cash and cash equivalents	$ 1,468
In-process research and development[1]	89,000
Goodwill	44,473
Other assets	918
Current liabilities	1,023
Deferred income tax liabilities, net[2]	16,009
NET ASSETS ACQUIRED	**$ 118,827**

(1) The fair value of IPR&D was determined using the income approach, which is a valuation technique that provides a fair value estimate based on the market participant expectations of cash flows the asset would generate. The cash flows were discounted commensurate with the level of risk associated with the asset. The discount rates were developed after assigning a probability of success to achieving the projected cash flows based on the current stage of development, inherent uncertainty in reaching certain regulatory milestones and risks associated with commercialization of the product. The IPR&D amount is included in intangible assets, net on the consolidated balance sheet at 31 December 2018.

(2) The amounts are presented net of deferred tax assets acquired.

Acquired goodwill of $9.6 million is expected to be deductible for tax purposes. Additionally, $3.0 million of the initial cash payment was deposited in escrow for future claims indemnification. These escrow deposits were released during 2018.

We recognized acquisition-related expenses of approximately $1.3 million for legal and valuation expenses during the year ended 31 December 2017. Additionally, the results of Caisson for the period of 2 May 2017 through 31 December 2017 added no revenue and $20.1 million in expenses on our consolidated statement of (loss) income. This included $7.2 million in compensation expense associated with the retention of employees of Caisson. Pro forma financial information, assuming the Caisson acquisition had occurred as of the beginning of the calendar year prior to the year of acquisition, was not material for disclosure purposes.

The contingent consideration arrangements are composed of potential cash payments upon the achievement of certain regulatory milestones and a sales-based earnout associated with sales of products covered by the purchase agreement. The sales-based earnout was valued using projected sales from our internal strategic plans.

Both arrangements are Level 3 fair value measurements and include the following significant unobservable inputs (in thousands):

Caisson Acquisition	Fair value at 2 May 2017	Valuation Technique	Unobservable Input	Ranges
Regulatory milestone-based payments	$ 14,250	Discounted cash flow	Discount rate	2.6% - 3.4%
			Probability of payment	90% - 95%
			Projected payment years	2018 - 2023
Sales-based earnout	16,092	Monte Carlo simulation	Discount rate	11.5% - 12.7%
			Sales volatility	36.9%
			Projected years of earnout	2019 - 2033
	$ 30,342			

ImThera

ImThera manufactures an implantable device for the treatment of obstructive sleep apnea that stimulates multiple tongue muscles via the hypoglossal nerve, which opens the airway while a patient is sleeping. ImThera has a commercial presence in the European market, and an FDA pivotal study is ongoing in the U.S.

On 16 January 2018, we acquired the remaining 86% outstanding interest in ImThera for cash consideration of up to $225 million. Cash in the amount of $78.3 million was paid at closing with the balance to be paid based on achievement of a certain regulatory milestone and a sales-based earnout.

The following table presents the acquisition date fair value of the consideration transferred and the fair value of our interest in ImThera prior to the acquisition (in thousands):

Cash	$ 78,332
Contingent consideration	112,744
Fair value of our interest in ImThera prior to the acquisition[1]	25,580
FAIR VALUE OF CONSIDERATION TRANSFERRED	**$ 216,656**

(1) The fair value of our previously held interest in ImThera was determined based on the fair value of total consideration transferred and application of a discount for lack of control. As a result, we recognized an overall gain of $11.5 million for the fair value in excess of the cost of our investment of $14.1 million. $4.2 million of the overall gain is included in Gain on acquisitions on our consolidated statement of (loss) income for the year ended 31 December 2018. $7.3 million of the overall gain is recorded as an opening balance adjustment to retained earnings (deficit) upon the adoption of IFRS 9.

The following table presents the purchase price allocation at fair value for the ImThera acquisition including certain measurement period adjustments (in thousands):

	Initial Purchase Price Allocation	Measurement Period Adjustments[1]	Adjusted Purchase Price Allocation
In-process research and development[2]	$ 151,605	$ 10,677	$ 162,282
Developed technology	5,661	(5,661)	—
Goodwill	87,063	(4,467)	82,596
Deferred income tax liabilities, net[3]	27,980	1,278	29,258
Other assets and liabilities, net	836	200	1,036
NET ASSETS ACQUIRED	**$ 217,185**	**$ (529)**	**$ 216,656**

(1) During the second quarter of 2018, measurement period adjustments were recorded based upon new information obtained about facts and circumstances that existed as of the acquisition date.

(2) The fair value of IPR&D was determined using the income approach, which is a valuation technique that provides a fair value estimate based on the market participant expectations of cash flows the asset would generate. The cash flows were discounted commensurate with the level of risk associated with the asset. The discount rates were developed after assigning a probability of success to achieving the projected cash flows based on the current stage of development, inherent uncertainty in reaching certain regulatory milestones and risks associated with commercialization of the product. The IPR&D amount is included in intangible assets, net on the consolidated balance sheet at 31 December 2018.

(3) The amounts are presented net of deferred tax assets acquired.

Goodwill arising from the ImThera acquisition, which is not deductible for tax purposes, primarily represents the synergies anticipated between ImThera and our existing NM business. The assets acquired, including goodwill, are recognized in our NM segment.

The results of the ImThera acquisition added $0.3 million in revenue and $8.8 million in operating losses during the year ended 31 December 2018. Additionally, we recognized ImThera acquisition-related expenses of approximately $0.7 million for legal and valuation expenses during the year ended 31 December 2018. These expenses are included within "Selling, general and administrative" expenses on our consolidated statement of (loss) income. Pro forma financial information, assuming the ImThera acquisition had occurred as of the beginning of the calendar year prior to the year of acquisition, was not material for disclosure purposes.

The ImThera business combination involved contingent consideration arrangements composed of potential cash payments upon the achievement of a certain regulatory milestone and a sales-based earnout associated with sales of products covered by the purchase agreement. The sales-based earnout was valued using projected sales from our internal strategic plan. Both arrangements are Level 3 fair value measurements and include the following significant unobservable inputs (in thousands):

ImThera Acquisition	Fair value at 16 January 2018	Valuation Technique	Unobservable Input	Ranges
Regulatory milestone-based payment	$ 50,429	Discounted cash flow	Discount rate	4.3% - 4.7%
			Probability of payment	85% - 95%
			Projected payment years	2020 - 2021
Sales-based earnout	62,315	Monte Carlo simulation	Risk-adjusted discount rate	11.5%
			Credit risk discount rate	4.7% - 5.8%
			Revenue volatility	29.3%
			Probability of payment	85% - 95%
			Projected years of earnout	2020 - 2025
	$ 112,744			

TandemLife

TandemLife is focused on the delivery of leading-edge temporary life support systems, including cardiopulmonary and respiratory support solutions. TandemLife complements our CV segment portfolio and expands our existing product line of cardiopulmonary products.

On 4 April 2018, we acquired TandemLife for cash consideration of up to $254 million. Cash of $204 million was paid at closing with up to $50 million in contingent consideration based on the achievement of regulatory milestones.

The following table presents the acquisition date fair value of the consideration transferred (in thousands):

Cash	$ 203,671
Contingent consideration	40,190
FAIR VALUE OF CONSIDERATION TRANSFERRED	**$ 243,861**

The following table presents the preliminary purchase price allocation at fair value for the TandemLife acquisition (in thousands):

	Initial Purchase Price Allocation	Measurement Period Adjustments[1]	Adjusted Purchase Price Allocation
In-process research and development[2] [3]	$ 110,977	$ (3,474)	$ 107,503
Trade names[2]	11,539	—	11,539
Developed technology[2]	6,387	—	6,387
Goodwill	118,917	2,529	121,446
Inventory	10,296	(140)	10,156
Other assets and liabilities, net	3,632	242	3,874
Deferred income tax liabilities, net[4]	17,887	(843)	17,044
NET ASSETS ACQUIRED	**$ 243,861**	**$ —**	**$ 243,861**

(1) During the third quarter of 2018, measurement period adjustments were recorded based upon new information regarding future estimates of R&D expenses that existed as of the acquisition date.

(2) The amounts are included in intangible assets, net on the consolidated balance sheet at 31 December 2018. Trade names and developed technology are amortized over remaining useful lives of 15 and 2 years, respectively.

(3) The fair value of IPR&D was determined using the income approach, which is a valuation technique that provides a fair value estimate based on the market participant expectations of cash flows the asset would generate. The cash flows were discounted commensurate with the level of risk associated with the asset. The discount rates were developed after assigning a probability of success to achieving the projected cash flows based on the current stage of development, inherent uncertainty in reaching certain regulatory milestones and risks associated with commercialization of the product.

(4) The amounts are presented net of deferred tax assets and include a provisional estimate for deferred tax assets acquired.

Goodwill arising from the TandemLife acquisition, which is not deductible for tax purposes, primarily represents the synergies anticipated between TandemLife and our existing CV business. The assets acquired, including goodwill, are recognized in our CV segment.

The results of the TandemLife acquisition added $19.5 million in revenue and $14.0 million in operating losses during the year ended 31 December 2018. Additionally, we recognized TandemLife acquisition-related expenses of approximately $2.1 million for legal and valuation expenses during the year ended 31 December 2018. These expenses are included within Selling, general and administrative expenses on our consolidated statement of (loss) income. Pro forma financial information, assuming the TandemLife acquisition had occurred as of the beginning of the calendar year prior to the year of acquisition, was not material for disclosure purposes.

The TandemLife business combination involved a contingent consideration arrangement composed of potential cash payments upon the achievement of certain regulatory milestones. The arrangement is a Level 3 fair value measurement and includes the following significant unobservable inputs (in thousands):

TandemLife Acquisition	Fair value at 4 April 2018	Valuation Technique	Unobservable Input	Ranges
Regulatory milestone-based payments	$ 40,190	Discounted cash flow	Discount rate	4.2% - 4.8%
			Probability of payments	75% - 95%
			Projected payment years	2019 - 2020

Note 8 Discontinued Operations

In November 2017, we concluded that the sale of CRM represented a strategic shift in our business that would have a major effect on future operations and financial results. Accordingly, the operating results of CRM are classified as discontinued operations on our consolidated statement of (loss) income for all the years presented in this Annual Report on Form 10-K. The assets and liabilities of CRM are presented as assets or liabilities of discontinued operations on the consolidated balance sheet at 31 December 2017.

We completed the CRM Sale on 30 April 2018 for total cash proceeds of $195.9 million, less cash transferred of $9.2 million, subject to a closing working capital adjustment. In conjunction with the sale, we entered into transition services agreements to provide certain support services generally for up to twelve months from the closing date of the sale. The services include, among others, accounting, information technology, human resources, quality assurance, regulatory affairs, supply chain, clinical affairs and customer support. During the year ended 31 December 2018 we recognized income of $2.8 million for providing these services. Income recognized related to the transition services agreements is recorded as a reduction to the related expenses in the associated expense line items on our consolidated statement of (loss) income.

The following table presents the assets and liabilities of CRM classified as held for sale and presented as assets and liabilities of discontinued operations in the consolidated balance sheets (in thousands):

	31 December 2017
Property, plant and equipment	$ 9,348
Intangible assets	88,239
Equity investments in associated and joint ventures measured at equity	6,098
Deferred tax assets	2,517
Other assets	3,500
Inventories	54,097
Trade receivables	64,684
Tax assets	14,725
ASSETS OF DISCONTINUED OPERATIONS	**$ 243,208**
Provision for employee severance indemnities and other employee benefit provisions	$ 9,860
Deferred income tax liability	6,037
Trade payables	26,501
Other payables	**23,230**
Provisions	3,337
Public grants	2,241
Tax payable	5,084
LIABILITIES OF DISCONTINUED OPERATIONS	**$ 76,290**

The following table represents the financial results of CRM presented as net loss from discontinued operations in the consolidated statement of (loss) income (in thousands):

	Year Ended 31 December 2018	Year Ended 31 December 2017
Net sales	$ 77,366	$ 245,171
Costs and expenses:		
Cost of sales	28,019	91,632
Selling, general and administrative expenses	43,198	109,945
Research and development	16,551	41,992
Exceptional items	(917)	43,309
Operating loss	(9,485)	(41,707)
Foreign exchange and other gains (losses)	102	(380)
Share of loss from equity accounted investments	(1,211)	(4,887)
Loss before tax	(10,594)	(46,974)
Income tax benefit	640	14,644
NET LOSS FROM DISCONTINUED OPERATIONS	**$ (9,954)**	**$ (32,330)**

The following exceptional items are included within operating loss above (in thousands):

	Year Ended 31 December 2018	Year Ended 31 December 2017
CRM (Revaluation) Impairment	$ (1,213)	$ 44,904
Restructuring expenses	651	(1,617)
Gain on sale of CRM	(355)	—
Merger and integration expenses	—	22
TOTAL EXCEPTIONAL ITEMS	**$ (917)**	**$ 43,309**

The following table represents the cash flows from operating, investing and financing activities of CRM presented within the results of the consolidated statement of cash flows (in thousands):

	Year Ended 31 December 2018	Year Ended 31 December 2017
Net cash provided by operating activities	$ 1,018	$ 10,202
Net cash used in investing activities	(1,018)	(10,202)
Net change in cash and cash equivalents	—	—
Cash and cash equivalents at beginning of year	—	—
CASH AND CASH EQUIVALENTS AT END OF YEAR	**$ —**	**$ —**

During the year ended 31 December 2017, we invested $4.5 million in MicroPort Sorin CRM (Shanghai) Co. Ltd. which is included in assets of discontinued operations on the consolidated balance sheet at 31 December 2017.

Note 9 Restructuring

We initiate restructuring plans to leverage economies of scale, streamline distribution and logistics and strengthen operational and administrative effectiveness in order to reduce overall costs. Costs associated with these plans were reported as restructuring expenses in the operating results of our consolidated statement of (loss) income.

Our 2015 and 2016 Reorganization Plans (the "Prior Plans") were initiated October 2015 and March 2016, respectively, in conjunction with the completion of the merger of Cyberonics, Inc. and Sorin S.p.A. in October 2015. The Prior Plans include the closure of the R&D facility in Meylan, France and consolidation of its R&D capabilities into the Clamart, France facility. In addition, during the year ended 31 December 2016, we initiated a plan to exit the Costa Rica manufacturing operation and transfer its operations to Houston, Texas. We completed the exit of the Costa Rica manufacturing operations in the first half of 2017 and substantially completed the Prior Plans during 2018.

Included in Prior Plans was our commitment to sell our Suzhou Industrial Park facility in Shanghai, China, which we announced in March 2017. As a result of this exit plan we recorded an impairment of the building and equipment of $5.4 million and accrued $0.5 million of additional costs, primarily related to employee severance, during the year ended 31 December 2017. In addition, the remaining carrying value of the land, building and equipment, of $13.6 million, was reclassified to assets held for sale on the consolidated balance sheet as of 31 December 2017. We completed the sale of the Suzhou facility in April and received cash proceeds from the sale of $13.3 million.

In December 2018, we initiated a reorganization plan (the "2018 Plan") in order to reduce manufacturing and operational costs associated with our CV facilities in Saluggia and Mirandola, Italy and Arvada, Colorado. We estimate that the 2018 Plan will result in a net reduction of approximately 75 personnel and is expected to be completed by the end of 2019.

The restructuring plans' liabilities for the year 1 January 2018 to 31 December 2018 are as follows, including the balances and activity related to the CRM business franchise (in thousands):

	Employee Severance and Other Termination Costs	Other	Total
Beginning liability balance	$ 3,889	$ 2,625	$ 6,514
Charges	15,641	925	16,566
Cash payments	(9,335)	(481)	(9,816)
ENDING LIABILITY BALANCE	**$ 10,195**	**$ 3,069**	**$ 13,264[1]**

(1) The restructuring plans' liabilities are recorded in the Consolidated Balance Sheet as $9.4 million within provisions and $3.9 million within other payables as of 31 December 2018.

The following table presents restructuring expense by operating segment, with discontinued operations included (in thousands):

	Year Ended 31 December 2018	Year Ended 31 December 2017
Cardiovascular[1]	$ 11,497	$ 8,819
Neuromodulation	1,595	561
Other	2,823	7,676
Restructuring expense from continuing operations	15,915	17,056
Discontinued operations	651	(1,617)
TOTAL	**$ 16,566**	**$ 15,439**

(1) CV restructuring expense for the year ended 31 December 2018 included $6.5 million of 2018 Plan expenses. In addition, CV restructuring expense for the year ended 31 December 2017 included building and equipment impairment of $5.4 million related to the Suzhou, China facility exit plan.

Note 10 Property, Plant and Equipment

(in thousands)	Land	Buildings and Building Improvements	Equipment, Other, Furniture, Fixtures	Capital Investment in Process	Total
At 31 December 2017					
Gross amount	$ 16,293	$ 80,280	$ 157,520	$ 9,944	$ 264,037
Accumulated depreciation and impairment	—	(11,542)	(74,506)	—	(86,048)
NET AMOUNT	**$ 16,293**	**$ 68,738**	**$ 83,014**	**$ 9,944**	**$ 177,989**
At 31 December 2018					
Gross amount	$ 15,866	$ 82,035	$ 169,315	$ 20,228	$ 287,444
Accumulated depreciation and impairment	—	(15,244)	(91,848)	—	(107,092)
NET AMOUNT	**$ 15,866**	**$ 66,791**	**$ 77,467**	**$ 20,228**	**$ 180,352**

Changes during the year in the net amount of each category of property, plant and equipment are indicated below (in thousands):

	Land	Buildings and Building Improvements	Equipment, Other, Furniture, Fixtures	Capital Investment in Process	Total
NET AMOUNT AT 31 DECEMBER 2016	**$ 15,181**	**$ 84,452**	**$ 89,884**	**$ 17,012**	**$ 206,529**
Additions	—	1,623	14,273	7,613	23,509
Acquisition of Caisson	—	55	465	250	770
Disposals	—	(232)	(2,682)	(420)	(3,334)
Impairment	—	(3,963)	(6,554)	(709)	(11,226)
Depreciation	—	(4,112)	(25,544)	—	(29,656)
Currency translation gains	1,112	6,138	7,680	958	15,888
Reclassifications	—	(714)	11,799	(12,600)	(1,515)
Assets classified as held for sale	—	(13,628)	—	—	(13,628)
Discontinued Operations[1]	—	(881)	(6,307)	(2,160)	(9,348)
NET AMOUNT AT 31 DECEMBER 2017	**16,293**	**68,738**	**83,014**	**9,944**	**177,989**
Additions	$ —	$ 2,096	$ 11,799	$ 21,848	$ 35,743
Acquisitions of ImThera and TandemLife	—	—	1,817	907	2,724
Disposals	—	—	(920)	(1,029)	(1,949)
Impairment	—	—	17	(149)	(132)
Depreciation	—	(4,135)	(22,490)	—	(26,625)
Currency translation loss	(427)	(2,070)	(2,639)	(317)	(5,453)
Reclassifications	—	2,162	6,869	(10,976)	(1,945)
NET AMOUNT AT 31 DECEMBER 2018	**$ 15,866**	**$ 66,791**	**$ 77,467**	**$ 20,228**	**$ 180,352**

(1) Refer to "Note 8. Discontinued Operations."

During the year ended 31 December 2017, we initiated a plan to sell our Suzhou Industrial Park facility in Shanghai, China and as a result of this exit plan we recorded impairments of the building and equipment of $5.4 million, which were recorded in Exceptional items in the consolidated statement of (loss) income. In addition, we classified the remaining carrying value of the land, building and equipment of our Suzhou facility, of $13.6 million, to assets held for sale in the consolidated balance sheet as of 31 December 2017. We completed the sale of the Suzhou facility in April 2018 and received cash proceeds from the sale of $13.3 million.

Note 11 Goodwill and Intangible Assets

(in thousands)	Goodwill	Developed Technology	Customer Relationships	Trade Names	In-Process R&D	Other Intangible Assets	Software	Total
At 31 December 2017								
Gross amount	$ 787,929	$ 178,610	$ 327,496	$ 14,391	$ 89,000	$ 805	$ 31,653	$ 641,955
Accumulated amortisation and impairment	—	(26,428)	(40,469)	(7,795)	—	(213)	(17,283)	(92,188)
NET AMOUNT	**$ 787,929**	**$ 152,182**	**$ 287,027**	**$ 6,596**	**$ 89,000**	**$ 592**	**$ 14,370**	**$ 549,767**
At 31 December 2018								
Gross amount	$ 960,437	$ 176,476	$ 317,292	$ 25,260	$ 358,785	$ 897	$ 33,991	$ 912,701
Accumulated amortisation and impairment	—	(39,145)	(57,350)	(11,440)	—	(336)	(22,943)	(131,214)
NET AMOUNT	**$ 960,437**	**$ 137,331**	**$ 259,942**	**$ 13,820**	**$ 358,785**	**$ 561**	**$ 11,048**	**$ 781,487**

The changes in the net carrying value of each class of intangible assets during the year are indicated below (in thousands):

(in thousands)	Goodwill	Developed Technology	Customer Relationships	Trade Names	In-Process R&D	Other Intangible Assets	Software	Total
NET AMOUNT AT 31 DECEMBER 2016	$ 693,175	$ 177,168	$ 373,726	$ 8,960	$ —	$ 880	$ 11,814	$ 572,548
Acquisition of Caisson	44,472	—	—	—	89,000	—	—	89,000
Additions	—	—	—	—	—	1,106	9,491	10,597
Disposals	—	—	—	—	—	(8)	(11)	(19)
Amortisation	—	(15,103)	(23,745)	(3,520)	—	(166)	(6,319)	(48,853)
Impairment	—	(10,375)	(30,361)	—	—	1,014	—	(39,722)
Currency translation gains	50,282	19,699	32,453	1,156	—	(1)	1,148	54,455
Discontinued operations[1]	—	(19,207)	(65,046)	—	—	(2,233)	(1,753)	(88,239)
NET AMOUNT AT 31 DECEMBER 2017	**787,929**	**152,182**	**287,027**	**6,596**	**89,000**	**592**	**14,370**	**549,767**
Acquisitions of ImThera and TandemLife	$ 204,042	$ 6,387	$ —	$ 11,539	$ 269,785	$ —	$ 33	$ 287,744
Additions	—	—	—	—	—	310	927	1,237
Disposals	—	—	—	—	—	—	(11)	(11)
Amortisation	—	(14,505)	(18,208)	(4,158)	—	(298)	(6,121)	(43,290)
Impairment	—	—	—	—	—	—	(2)	(2)
Currency translation gains	(31,534)	(6,823)	(8,801)	(157)	—	3	(125)	(15,903)
Reclassifications	—	90	(76)	—	—	(46)	1,977	1,945
NET AMOUNT AT 31 DECEMBER 2018	**$ 960,437**	**$ 137,331**	**$ 259,942**	**$ 13,820**	**$ 358,785**	**$ 561**	**$ 11,048**	**$ 781,487**

(1) Refer to "Note 8. Discontinued Operations."

Amortisation of intangible assets charged to the consolidated statement of (loss) income totalled $43.3 million and $48.9 million for the year ended 31 December 2018 and 31 December 2017, respectively, and is included within cost of sales, selling, general and administrative and research and development.

The amortisation periods for our finite-lived intangible assets as at 31 December 2018 were as follows:

	Minimum Life in Years	Maximum Life in Years
Developed technology	2	19
Customer relationships	17	18
Trade names	4	15
Other intangible assets	5	11
Software	3	10

Impairment of Goodwill and Intangible Assets

Our CGUs consist of Cardiopulmonary, Heart Valves, Advanced Circulatory Support, Obstructive Sleep Apnea, TMVR and Neuromodulation. The carrying amount of goodwill by CGU (in thousands):

	31 December 2018	31 December 2017
Cardiopulmonary	$ 191,774	$ 201,218
Heart Valves	204,206	226,296
Advanced Circulatory Support	121,446	—
Obstructive Sleep Apnea	82,596	—
Neuromodulation	315,943	315,943
TMVR	44,472	44,472
TOTAL	**$ 960,437**	**$ 787,929**

We performed quantitative assessments of our CGUs as of 31 December 2018 in accordance with IAS 36 'Impairment of Assets'. The methodology applied to our CGUs value in use calculations, reflecting past experience and external sources of information, include Board approved budgets based on pre-tax cash flows with discount rates between 9% and 20% derived from the Company's benchmarked weighted average cost of capital (WACC) and a long-term nominal growth rate of 2%. The discount rates utilized in the assessments of our Cardiopulmonary, Heart Valves and Neuromodulation CGUs were 12.5%, 9.0%, and 13.0%, respectively. The discount rates utilized in the assessments of our Advanced Circulatory Support, Obstructive Sleep Apnea and TMVR CGUs were 20%, 19.5%, and 18.5%, respectively. The value in use models used for calculating fair value is most sensitive to the discount rate as well as the expected revenue growth rate and the growth rate for extrapolation purposes. We performed a sensitivity analysis for each of these assumptions for each CGU and determined that an increase of 0.5% in the discount rate used or a decrease of 0.5% in the terminal growth rate would not result in an impairment of goodwill. Based on the assessments performed, we determined that goodwill was not impaired.

Additionally, we performed quantitative assessments of the IPR&D recognized in conjunction with the acquisitions of Caisson, TandemLife and ImThera. The value in use calculations have been based on projection periods ranging from 20 to 21 years. The assessments included a discounted cash flow model test that included discount rates ranging from 18 to 20% and a long-term growth rate of 2%. Based on the assessments performed, we determined that the IPR&D assets were not impaired.

IAS 36 provides that, if there is any reasonably possible change to a key assumption that would cause the carrying amount of an IPR&D asset to exceed its recoverable amount, further disclosures are required. The fair value of the IPR&D assets recognized in conjunction with the acquisition of ImThera exceed its carrying value by approximately 6% or $10.2 million. A 1% change in the discount rate or growth rate used would affect the fair value of the ImThera IPR&D assets calculated by $22 million. Additionally, future delays in regulatory approvals or changes in management estimates could result in fair values that are below their carrying amount.

Note 12 Investments in Subsidiaries

Subsidiaries

The Company had the following subsidiaries as at 31 December 2018:

	Registered Office	Country of Incorporation	% Consolidated Group Ownership
LivaNova PLC (Italian Branch)	Via Benigno Crespi 17 20159 Milan, Italy	Italy	100
Caisson Interventional LLC	6500 Wedgwood Rd., Maple Grove, MN 55311	U.S.	100
CardiacAssist, Inc. Dba TandemLife	240 Alpha Drive, Pittsburgh, PA 15238	U.S.	100
Cyberonics Holdings LLC	100 Cyberonics Boulevard, Houston, TX 77058 USA	U.S.	100
Cyberonics Latam SRL	Edificio B49, 51 Ave O, Zona Franca Coyo, Coyo-Alajeuela, Costa Rica 20113	Costa Rica	100
CYBX Netherlands CV	100 Cyberonics Boulevard, Houston, TX 77058 USA	Netherlands	100
Cyberonics Spain SL	100 Cyberonics Boulevard, Houston, TX 77058 USA	Spain	100
ImThera Medical, Inc.	100 Cyberonics Boulevard, Houston, TX 77058 USA	U.S.	100
LivaNova Australia PTY Limited	Tower 2, 123 St Georges Terrace Perth, WA 6000	Australia	100
LivaNova Austria GmbH	Schottengasse 1, 4. Stock, Wien, Austria, 1010	Austria	100
LivaNova Belgium NV	Ikaroslaan 83, 1930 Zaventem, Belgium	Belgium	100
Livanova Brasil Comércio e Distribuição de Equipamentos Médico-hospitalares Ltda	Rua Liege, 54 – Vila Vermelha, 04298-070 – São Paulo - SP - Brasil	Brazil	100
LivaNova Canada Corp.	Suite 900, 1959 Upper Water Street, Halifax, NS, B3J 2X2, Canada	Canada	100
LivaNova Cayman Limited	Cannon Place, Grand Cayman, Cayman Islands	Cayman Islands	100
LivaNova Colombia Sas	Avenida Calle 80 No. 69-70 Bodega 37, Bogotá, Colombia	Colombia	100
LivaNova Deutschland GmbH	Lindberghstrasse 25, D - 80939 München, Germany	Germany	100
LivaNova Espana, S.L.	Avenida Diagonal 123, planta 10, 08005, Barcelona, Spain	Spain	100
LivaNova Finland OY	c/o Kalliolaw Asianajotoimisto Oy, Södra kajen 12, 00130 Helsinki, Finland	Finland	100

	Registered Office	Country of Incorporation	% Consolidated Group Ownership
LivaNova Holding S.r.l.	Via Benigno Crespi, 17 - 20159 Milano, Italy	Italy	100
LivaNova Holding USA Inc.	14401 W. 65th Way - Arvada, CO 80004 USA	U.S.	100
LivaNova Hong Kong Limited	9/F, Wah Yuen Bldg, 149 Queen's Road, Central, Hong Kong, Hong Kong	Hong Kong	100
LivaNova Hungary Limited Liability Company	H-1062 Budapest, Váci út 1-3, A épület, 6. em.	Hungary	100
LivaNova Inc.	100 Cyberonics Boulevard, Houston, TX 77058 USA	U.S.	100
LivaNova India Private Limited	Barakhamba Road 110001 New Delhi, India	India	100
LivaNova IP Limited	20 Eastbourne Terrace, London, England W2 6LG, United Kingdom	United Kingdom	100
LivaNova Japan K.K.	11-1 Nagatacho 2 chome, Chiyoda-ku, Tokyo, 100-6110 Japan	Japan	100
LivaNova (Thailand) Ltd	4,4/5 Zen World Tower Level 12, Rajdamri Road, Pathumwan, Pathumwan, Bangkok, 10330, Thailand	Thailand	100
LivaNova (China) Medical Technology Co. Ltd	Room 3006, 30F, C Building, SML Centre, No. 610 Xujiahui Road, Huangpu District, Shanghai, 200025, China	China	100
LivaNova Malaysia Sdn. Bhd.	Level 10, Meara LGB 1Jalan Wan Kadir Taman Tun Dr. Ismail 60000, Kuala Lumpur, Malaysia	Malaysia	100
LivaNova Nederland N.V.	Westerdoksdijk 423, 1013 BX, Amsterdam, Netherlands	Netherlands	100
LivaNova Norway AS	c/o AmestoAccounthouse AS, Smeltedigelen 1, 0195 Oslo, Norway	Norway	100
LivaNova Poland Sp. Z o.o.	Park Postepu Bud A Ul. Postepu 21 PL-02 676 Warszawa, Poland	Poland	100
LivaNova SAS	200 Avenue de Paris, Châtillon, 92320, France	France	100
LivaNova Scandinavia AB	Djupdalsvägen 16, 192 51 Sollentuna, Sweden	Sweden	100
LivaNova Singapore Pte Ltd	The Adelphi, 1 Coleman Street, #10-07, Singapore 179803	Singapore	100
LivaNova Site Management S.r.l.	Via Benigno Crespi 17 20159 Milan, Italy	Italy	100
LivaNova Switzerland SA	Rue du Grand-Pont 12, 1003 Lausanne	Switzerland	100
LivaNova UK Limited	1370 Montpellier Court, Gloucester Business Park, Gloucester, Gloucestershire, GL3 4AH, United Kingdom	United Kingdom	100
LivaNova USA Inc.	100 Cyberonics Boulevard, Houston, TX 77058 USA	U.S.	100
Livn Irishco 2 UC	Deloitte, 6 Lapps Quay, Cork, T12 TA48, Ireland	Ireland	100
Livn Irishco Unlimited Company	Deloitte, 6 Lapps Quay, Cork, T12 TA48, Ireland	Ireland	100
Livn Luxco 2 Sarl	15 Rue Edward Steichen L-2540 Luxembourg	Luxembourg	100
Livn Luxco Sarl	15 Rue Edward Steichen L-2540 Luxembourg	Luxembourg	100
Livn UK 2 Co Limited	20 Eastbourne Terrace, London, England W2 6LG, United Kingdom	United Kingdom	100
Livn UK 3 Co Limited	20 Eastbourne Terrace, London, England W2 6LG, United Kingdom	United Kingdom	100
Livn UK Holdco Limited	20 Eastbourne Terrace, London, England W2 6LG, United Kingdom	United Kingdom	100
Livn US 1, LLC	100 Cyberonics Boulevard, Houston, TX 77058 USA	U.S.	100
Livn US 3 LLC	100 Cyberonics Boulevard, Houston, TX 77058 USA	U.S.	100
Livn US Holdco, Inc.	100 Cyberonics Boulevard, Houston, TX 77058 USA	U.S.	100
Livn US LP	14401 West 65th Way, Arvada, CO 80004	U.S.	100
Sobedia Energia	Via Crescentino sn 13040 Saluggia (VC), Italy	Italy	75
Sorin Group Czech Republic	Na poriçi 1079/3a Nové Mesto Praha 110 00 Praha 1, Czech Republic	Czech Republic	100
Sorin Group Italia S.r.l.	Via Benigno Crespi, 17 - 20159 Milano, Italy	Italy	100
Sorin Group Rus LLC	Marshal Proshlyakov str. 30 office 304 123458 Moscow, Russia	Russia	100

All subsidiary undertakings are included in the consolidation. The proportion of the voting rights in the subsidiary undertakings held directly by the parent company do not differ from the proportion of Ordinary Shares held.

Operating performance of the main group companies

SORIN GROUP ITALIA S.R.L. *(thousands of euros)*	For The Year Ended 31 December 2018
Revenue	317,382
Earnings before interest and taxes	(9,907)
Net profit/(loss)	(6,239)

LIVANOVA HOLDING USA, INC. *(thousands of USD)*	For The Year Ended 31 December 2018
Revenue	–
Earnings before interest and taxes	(341)
Net profit/(loss)	1,462

LIVANOVA DEUTSCHLAND GMBH[1] *(thousands of euros)*	For The Year Ended 31 December 2018
Revenue	119,540
Earnings before interest and taxes	(6,281)
Net profit/(loss)	(6,785)

(1) LivaNova Deutschland GmbH is a 100% consolidated LivaNova group company that is formally exempt for FS 2018 from GERMAN GAAP auditing and publishing.

LIVANOVA CANADA CORP. *(thousands of Canadian dollars)*	For The Year Ended 31 December 2018
Revenue	127,458
Earnings before interest and taxes	30,700
Net profit/(loss)	14,485

LIVANOVA USA, INC. *(thousands of USD)*	For The Year Ended 31 December 2018
Revenue	509,380
Earnings before interest and taxes	11,855
Net profit/(loss)	(4,093)

Note 13 Financial Assets

Non-Current Financial Assets

(in thousands)	31 December 2018	31 December 2017
Investments in equity instruments in private-held companies	$ 24,823	$ 39,965
Corporate owned life insurance policies	2,633	2,943
Financial receivables due from associated companies	–	417
Other	–	859
TOTAL NON-CURRENT FINANCIAL ASSETS	**$ 27,456**	**$ 44,184**

The table below lists our non-current financial assets of investments in equity instruments in privately-held companies held at fair value in the consolidated balance sheets (in thousands):

	31 December 2018	31 December 2017
Respicardia Inc.[1]	$ 17,706	$ 17,422
Ceribell, Inc.[2]	3,000	–
Rainbow Medical Ltd.[3]	1,119	1,172
MD Start II[4]	1,144	1,199
Highlife SAS[5]	1,084	–
ImThera Medical, Inc. – convertible preferred shares and warrants[6]	–	20,172
Noctrix Investment Fund	770	–
TOTAL	**$ 24,823**	**$ 39,965**

(1) Respicardia Inc. ("Respicardia") is a privately funded U.S. company developing an implantable device designed to restore a more natural breathing pattern during sleep in patients with central sleep apnea by transvenously stimulating the phrenic nerve. We have a loan outstanding to Respicardia with a carrying amount of $0.6 million and $0.4 million as of 31 December 2018, and 31 December 2017, respectively, which is included in current financial assets on the consolidated balance sheet. Refer to the paragraph below for further details regarding this investment.

(2) On 7 September 2018, we acquired 1,007,319 shares of Series B Preferred Stock of Ceribell, Inc. ("Ceribell"). Ceribell is focused on utilizing electroencephalography to improve the diagnosis and treatment of patients at risk for seizures.

(3) Rainbow Medical Ltd. is an Israeli company that seeds and grows companies developing medical devices in a diverse range of medical fields. During the fourth quarter of 2017, we impaired our investment in Rainbow Medical. Refer to the paragraph below for further details.

(4) MD Start II is a private venture capital collaboration for the development of medical device technology in Europe.

(5) Highlife S.A.S. ("Highlife") is a privately held clinical-stage medical device company located in France and is focused on the development of a unique TMRV replacement system to treat patients with MR. Refer to the paragraph below for further details. At 31 December 2017, we accounted for Highlife under the equity method and the carrying value was $1.8 million. Due to an additional investment by a third party during the year ended 31 December 2018, our equity interest in Highlife decreased to 7.8% from 24.6%. We determined that we no longer had significant influence over Highlife and, as a result, we no longer accounted for Highlife under the equity method.

(6) ImThera Medical, Inc. is a private U.S. company developing a neurostimulation device system for the treatment of obstructive sleep apnea. On 16 January 2018, we acquired the remaining outstanding interests in ImThera. Refer to "Note 7. Business Combinations" for a discussion of our acquisition of ImThera.

Respicardia Impairment

We recognized an impairment of our investment in Respicardia during the year ended 31 December 2017. Terms of an additional round of financing with a new strategic investor indicated that the carrying value of our aggregate investment might not be recoverable and that the decrease in value of our aggregate investment was other than temporary. We, therefore, estimated the fair value of our investment using the income approach. The estimated fair value of our investment was below our carrying value by $5.5 million. This impairment was included in impairment of investments in the consolidated statement of (loss) income.

Rainbow Medical Impairment

We recognized an impairment of our cost-method investment in Rainbow Medical during the year ended 31 December 2017. An additional round of financing, which included a new investor, indicated that the carrying value of our aggregate investment might not be recoverable and that the decrease in value of our aggregate investment was other than temporary. We, therefore, estimated the fair value of our investment using the income approach. The estimated fair value of our aggregate investment was below our carrying value by $3.0 million. This aggregate impairment was included in impairment of investments in the consolidated statement of (loss) income.

Highlife Impairment

We recognized an impairment of our investment in, and notes receivable from, Highlife, during the year ended 31 December 2017. Certain factors, including a revision in our investment strategy and a new strategic investor, indicated that the carrying value of our aggregate investment might not be recoverable and that the decrease in value of our aggregate investment was other than temporary. We, therefore, estimated the fair value of our investment and notes receivable using the market approach. The estimated fair value of our aggregate investment was below our carrying value by $13.0 million. This aggregate impairment was included in losses from equity method investments on our consolidated statement of (loss) income.

Istituto Europeo di Oncologia S.R.L Sale

During the year ended 31 December 2017, we sold our investment in Istituto Europeo di Oncologia S.R.L, for a gain of $3.2 million. This gain is included in foreign exchange and other - gain in the consolidated statement of (loss) income.

Current Financial Assets

(in thousands)	31 December 2018	31 December 2017
Financial receivables due from equity investments[1]	$ 597	$ 1,000
Other	117	395
TOTAL CURRENT FINANCIAL ASSETS	**$ 714**	**$ 1,395**

(1) We recognized an impairment of our notes receivable from Highlife during the year ended 31 December 2017 of $8.3 million. This impairment was included in "Share of loss from equity accounted investments" in the consolidated statement of (loss) income.

Note 14 Inventories

Inventories consisted of the following (in thousands):

	31 December 2018	31 December 2017
Raw materials	$ 40,387	$ 39,810
Work-in-process	15,999	18,206
Finished goods	97,149	86,454
TOTAL	**$ 153,535**	**$ 144,470**

Inventories are reported net of the provision for obsolescence which totaled $11.6 million and $10.5 million as at 31 December 2018 and 31 December 2017, respectively. The provision for obsolescence at 31 December 2018 reflects normal obsolescence and includes components that are phased out or expired.

Note 15 Trade Receivables and Other Receivables

Trade receivables, net, consisted of the following (in thousands):

	31 December 2018	31 December 2017
Trade receivables from third parties	$ 267,733	$ 291,563
Expected credit loss provision	(11,598)	(9,418)
TOTAL	**$ 256,135**	**$ 282,145**

Our customers consist of hospitals, other healthcare institutions, distributors, organized purchase groups and government and private entities. Actual collection periods for trade receivables vary significantly as a function of the nature of the customer (e.g. government or private) and its geographic location.

Trade receivables are reported net of the expected credit loss provision, the changes in which are provided below (in thousands):

	31 December 2018	31 December 2017
Beginning of year	$ (9,418)	$ (9,606)
Additions to provision	(3,184)	(1,801)
Utilisation	(36)	240
Reclassifications	724	–
Currency translation gains/losses	316	(1,137)
Discontinued operations	–	2,886
END OF YEAR	**$ (11,598)**	**$ (9,418)**

Actual collection periods for trade receivables vary significantly due to the nature of a customer (e.g. government or private) and its geographic location. LivaNova may utilize non-recourse and with-recourse factoring arrangements as a part of its funding policy; however, as at 31 December 2018 and 31 December 2017, there are no factoring arrangements outstanding.

Below is a summary of other receivables (in thousands):

	31 December 2018	31 December 2017
Prepaid assets	$ 21,495	$ 13,372
Deposits and advances to suppliers	3,776	4,551
Receivable from MicroPort Scientific Corporation	1,749	–
Earthquake grant receivable	805	4,064
Guarantee deposits	796	532
Escrow deposit – Caisson	–	2,000
TOTAL	**$ 28,621**	**$ 24,519**

Note 16 Derivative Financial Instruments

Due to the global nature of our operations, we are exposed to foreign currency exchange rate fluctuations. In addition, due to certain loans with floating interest rates, we are also subject to the impact of changes in interest rates on our interest payments. We enter into foreign currency exchange rate derivative contracts and interest rate swap contracts to reduce the impact of foreign currency rate and interest rate fluctuations on earnings and cash flow. We measure all outstanding derivatives each year end at fair value and report the fair value as either financial assets or liabilities in the consolidated balance sheets. We do not enter into derivative contracts for speculative purposes. At inception of the contract, the derivative is designated as either a freestanding derivative or hedge. Derivatives that are not designated as hedging instruments are referred to as freestanding derivatives with changes in fair value included in profit or loss. Cash flows from derivative contracts are reported as operating activities in the consolidated statement of cash flows.

If the derivative qualifies for hedge accounting, depending on the nature of the hedge and hedge effectiveness, changes in the fair value of the derivative will either be recognized immediately in earnings or recorded in other comprehensive income (loss) until the hedged item is recognized in earnings upon settlement/termination. FX derivative gains and losses in OCI are reclassified to the consolidated statement of (loss) income as shown in the tables below and interest rate swaps gains and losses in OCI are a reclassified to interest expense in the consolidated statement of (loss) income. We evaluate hedge effectiveness at inception of the hedge relationship and on an ongoing basis to ensure that an economic relationship exists between the hedged item and the hedging instrument. If a derivative is no longer expected to be highly effective, hedge accounting is discontinued. Hedge ineffectiveness, if any, is recorded in profit or loss.

Freestanding derivative foreign currency contracts

The gross notional amount of our FX derivative contracts not designated as hedging instruments, outstanding at 31 December 2018 and 31 December 2017, was $320.2 million and $231.9 million, respectively. These derivative contracts are designed to offset the FX effects in earnings of various intercompany loans, our 2014 EIB loan and trade receivables. We recorded net losses for these freestanding derivatives of $11.2 million and $11.7 million for the years ended 31December 2018 and 2017, respectively. These gains and losses are included in foreign exchange and other (losses) gains on our consolidated statement of (loss) income.

Cash Flow Hedges

Foreign Currency Risk

We utilize FX derivative contracts, designed as cash flow hedges, to hedge the variability of cash flows associated with our 12 month USD forecasts of revenues denominated in GBP, Japanese Yen and Canadian Dollar. We transfer to earnings from accumulated other comprehensive income (loss), the gain or loss realized on the FX derivative contracts at the time of invoicing.

There was no hedge ineffectiveness or component of the FX derivative contracts excluded in the measurement of hedge effectiveness during the years ended 31 December 2018 and 31 December 2017.

Interest Rate Risk

In July 2014, Sorin entered into a European Investment Bank long-term loan agreement that matures in June 2021 with variable interest payments due quarterly based on the Euribor 3 month floating interest rate. To minimize the impact of changes in the interest rate we entered into an interest rate swap agreement program to swap the EIB floating-rate interest payments for fixed-rate interest payments. The interest rate swap contracts qualify for, and are designated as, cash flow hedges.

There was no interest rate swap hedge ineffectiveness or component of the swap contract excluded in the measurement of hedge effectiveness during the years ended 31 December 2018 and 31 December 2017.

Open derivative contracts designated as cash flow hedges (in thousands):

Description of derivative contract:	31 December 2018	31 December 2017
FX derivative contracts to be exchanged for British Pound	$ 9,629	$ 16,847
FX derivative contracts to be exchanged for Japanese Yen	23,985	32,302
FX derivative contracts to be exchanged for Canadian Dollars	7,637	16,494
FX derivative contracts to be exchanged for Euros	29,768	—
Interest rate swap contracts	38,115	55,965

After-tax net loss associated with derivatives designated as cash flow hedges recorded in the ending balance of Accumulated Other Comprehensive Loss and the amount expected to be reclassified to earnings in the next 12 months (in thousands):

	31 December 2018	Amount Expected to be Reclassed to Earnings in Next 12 Months
FX derivative contracts	$ (787)	$ (787)
Interest rate swap contracts	(157)	(62)
TOTAL	**$ (944)**	**$ (849)**

Presentation in Financial Statements

Pre-tax gains (losses) posted to other comprehensive income and the amount reclassified to earnings for derivative contracts designated as cash flow hedges (in thousands):

		Year Ended 31 December 2018	
Description of derivative contract	Location in earnings of reclassified gain or loss	Losses Recognized in OCI	Gains (Losses) Reclassified from OCI to Earnings:
FX derivative contracts	Foreign Exchange and Other	$ 44	$ 2,697
FX derivative contracts	SG&A	—	(2,554)
Interest rate swap contracts	Interest expense	—	(66)
TOTAL		**$ 44**	**$ 77**

		Year Ended 31 December 2017	
Description of derivative contract	Location in earnings of reclassified gain or loss	Gains Recognized in OCI	Gains Reclassified from OCI to Earnings:
FX derivative contracts	Foreign Exchange and Other	$ (9,861)	$ (6,471)
FX derivative contracts	SG&A	—	2,084
Interest rate swap contracts	Interest expense	—	939
TOTAL		**$ (9,861)**	**$ (3,448)**

The following tables present the fair value, and the location of, derivative contracts reported in the consolidated balance sheets (in thousands):

31 December 2018	Asset Derivatives		Liability Derivatives	
Derivatives designated as hedging instruments	**Balance Sheet Location**	**Fair Value[1]**	**Balance Sheet Location**	**Fair Value[1]**
Interest rate contracts	Current financial derivative assets	$ —	Current financial derivative liabilities	$ 536
Interest rate contracts	Non-current financial derivative assets	—	Non-current financial derivative liabilities	329
Foreign currency exchange rate contracts	Current financial derivative assets	—	Current financial derivative liabilities	1,354
Total derivatives designated as hedging instruments		—		2,219
Derivatives not designated as hedging instruments				
Foreign currency exchange rate contracts	Current financial derivative assets	236	Current financial derivative liabilities	3,173
Total derivatives not designated as hedging instruments		236		3,173
TOTAL DERIVATIVES		**$ 236**		**$ 5,392**

(1) For the classification of input used to evaluate the fair value of our derivatives, refer to "Note 5. Fair Value Measurements."

31 December 2017	Asset Derivatives		Liability Derivatives	
Derivatives designated as hedging instruments	**Balance Sheet Location**	**Fair Value[1]**	**Balance Sheet Location**	**Fair Value[1]**
Interest rate contracts	Current financial derivative assets	$ —	Current financial derivative liabilities	$ 834
Interest rate contracts	Non-current financial derivative assets	—	Non-current financial derivative liabilities	751
Foreign currency exchange rate contracts	Current financial derivative assets	—	Current financial derivative liabilities	460
Total derivatives designated as hedging instruments		—		2,045
Derivatives not designated as hedging instruments				
Foreign currency exchange rate contracts	Current financial derivative assets	519	Current financial derivative liabilities	—
Total derivatives not designated as hedging instruments		519		—
TOTAL DERIVATIVES		**$ 519**		**$ 2,045**

(1) For the classification of input used to evaluate the fair value of our derivatives, refer to "Note 5. Fair Value Measurements."

Note 17 Shareholders' Equity

LivaNova is incorporated in England and Wales as a public company limited by shares. The principal legislation under which LivaNova operates is the Companies Act 2006, and regulations made thereunder. LivaNova Ordinary Shares were registered under the U.S. Securities Act, pursuant to the Registration Statement on Form S-4 (File No. 333-203510), as amended, filed with the SEC by LivaNova and declared effective on 19 August 2015. LivaNova's Ordinary Shares are listed on Nasdaq under the ticker symbol "LIVN."

The Company's authorised share capital is as following:

(in number of shares)	31 December 2018	31 December 2017
Authorised share capital, Ordinary Shares of £1 each, unlimited shares authorized		
Issued – fully paid	49,323,418	48,290,276
Outstanding	**48,205,783**	**48,287,346**

Preferred shares

LivaNova is not authorised to issue preferred shares.

Treasury shares

We issued 1.4 million and nil shares to our Employee Benefit Trust ("EBT") for the years ended 31 December 2018 and 31 December 2017, respectively. Shares held by the EBT are issued to employees and directors at exercise of stock-based compensation grants. The balance of shares in the EBT are reported as treasury shares.

Share repurchase plans

On 1 August 2016, the Board of Directors of LivaNova approved the authorization of a share repurchase plan (the "Share Repurchase Program") pursuant to an authority granted by shareholders at the 2016 annual general meeting held on 15 June 2016. The Share Repurchase Program was structured to enable us to buy back up to $150.0 million of our shares on NASDAQ between 1 September 2016 through 31 December 2016. On 15 November 2016, the Board of Directors approved an amendment (the "Amended Share Repurchase Program") to the Share Repurchase Program. The Amended Share Repurchase Program authorized the Company to repurchase up to $150.0 million of our shares between 1 September 2016 and 31 December 2018. As of 31 December 2018, we repurchased 1,493,672 shares under this plan at a cost of $100 million for an average price of $66.95. All repurchased shares were canceled and are no longer considered issued or outstanding. No shares may be repurchased under the Share Repurchase Program or the Amended Share Repurchase Program after 31 December 2018.

Group reconstruction reserve

The 'Group reconstruction reserve' represents the excess of value attributed to shares and share appreciation rights issued during the acquisition of Sorin S.p.A on 19 October 2015 over the nominal value of those shares and share rights.

Comprehensive income

The table below presents the change in each component of accumulated other comprehensive (loss) income, net of tax and the reclassifications out of accumulated other comprehensive (loss) income into retained earnings (deficit).

Taxes were not provided for foreign currency translation adjustments for the years ended 31 December 2018 and 2017 as translation adjustment related to earnings that are intended to be reinvested in the countries where earned.

(in thousands)	Change in Unrealised gain (loss) on investments	Change in Unrealised Gain (Loss) on Derivatives	Foreign Currency Translation Adjustments	Revaluation of Net Liability (Asset) for Defined Benefits	Total
Beginning Balance – 31 December 2016	$ —	$ 3,619	$ (72,134)	$ (1,283)	$ (69,798)
Other comprehensive income (loss) before reclassifications, before tax	7,272	(9,861)	112,623	(327)	109,707
Tax benefit (expense)	(1,782)	2,653	—	64	935
Other comprehensive income (loss) before reclassifications, net of tax	5,490	(7,208)	112,623	(263)	110,642
Reclassification of gain/(loss) from accumulated other comprehensive income, before tax	—	3,448	—	—	3,448
Tax effect	—	(778)	—	—	(778)
Reclassification of gain/(loss) from accumulated other comprehensive income, after tax	—	2,670	—	—	2,670
Net other comprehensive income (loss), net of tax	5,490	(4,538)	112,623	(263)	113,312
ENDING BALANCE – 31 DECEMBER 2017	**$ 5,490**	**$ (919)**	**$ 40,489**	**$ (1,546)**	**$ 43,514**
Opening balance adjustment upon adoption of IFRS 9	(5,490)	—	—	—	(5,490)
Other comprehensive income (loss) before reclassifications, before tax	—	44	(64,118)	662	(63,412)
Tax benefit (expense)	—	(11)	—	(190)	(201)
Other comprehensive income (loss) before reclassifications, net of tax	(5,490)	33	(64,118)	472	(69,103)
Reclassification of gain/(loss) from accumulated other comprehensive income, before tax	—	(77)	—	—	(77)
Tax effect	—	19	—	—	19
Reclassification of gain/(loss) from accumulated other comprehensive income, after tax	—	(58)	—	—	(58)
Net other comprehensive income (loss), net of tax	(5,490)	(25)	(64,118)	472	(69,161)
ENDING BALANCE – 31 DECEMBER 2018	**$ —**	**$ (944)**	**$ (23,629)**	**$ (1,074)**	**$ (25,647)**

Note 18 Financial Liabilities

The outstanding principal amount of long-term debt at 31 December 2018 and at 31 December 2017 consisted of the following (in thousands, except interest rates):

	Principal Amount at 31 December 2018	Principal Amount at 31 December 2017	Maturity	Effective Interest Rate
2017 European Investment Bank	$ 103,570	$ —	June 2026	3.79%
2014 European Investment Bank	47,606	69,893	June 2021	0.99%
Mediocredito Italiano	7,623	9,118	December 2023	0.50% – 2.98%
Banca del Mezzogiorno	2,718	5,499	December 2019	0.50% – 3.05%
Region Wallonne	742	845	December 2023 - June 2033	0.00% – 2.45%
Mediocredito Italiano - mortages and other	582	997	September 2021 and September 2026	0.75% – 1.24%
Bpifrance (ex-Oséo)	—	1,450	—	—
Total long-term facilities	162,841	87,802		
Less current portion of long-term debt	23,303	25,844		
TOTAL LONG-TERM DEBT	**$ 139,538**	**$ 61,958**		

Cash movements associated with the outstanding principal amounts of our long-term debt for the year ended 31 December 2018 included the following:

	Beginning of fiscal year 2018	Borrowing	Scheduled principal reductions	Early extinguishment	Amortization of prepaid loan fees	FX – Translation	End of fiscal year 2018
2017 European Investment Bank	$ —	$ 103,570	$ —	$ —	$ —	$ —	$ 103,570
2014 European Investment Bank	69,893	—	(19,246)	—	22	(3,063)	47,606
Banca del Mezzogiorno	5,499	—	(2,660)	—	135	(256)	2,718
Mediocredito Italiano	9,118	—	(1,151)	—	80	(424)	7,623
Bpifrance (ex-Oséo)	1,450	—	(353)	(1,086)	—	(11)	—
Region Wallonne	845	—	(64)	—	—	(39)	742
Mediocredito Italiano - mortgages and other	997	—	(353)	—	(16)	(46)	582
TOTALS	**$ 87,802**	**$ 103,570**	**$ (23,827)**	**$ (1,086)**	**$ 221**	**$ (3,839)**	**$ 162,841**

Revolving Credit

The outstanding principal amount of our short-term unsecured revolving credit agreements and other agreements with various banks was $5.5 million and $58.2 million at 31 December 2018 and 31 December 2017, respectively, with interest rates ranging from 0.50% and 9.34% and loan terms ranging from 90 to 180 days.

On 10 April 2018, we entered into an amendment and restatement agreement with Barclays Bank PLC amending the revolving facility agreement originally dated 21 October 2016 (the "Amendment"). The Amendment increases the borrowing capacity under the facility from $40.0 million to $70.0 million and extends the term of the facility one year, terminating 20 October 2019. Borrowings under the facility bear interest at a rate of LIBOR plus 0.85%.

Bridge Facility Agreement

In connection with the April 2018 acquisition of TandemLife, we entered into a bridge facility agreement (the "Bridge Facility Agreement") providing a term loan facility with the aggregate principal amount of $190.0 million. On 3 April 2018, we borrowed $190.0 million under the Bridge Facility Agreement to facilitate the initial payment for our acquisition of TandemLife. We used the proceeds from the sale of the CRM business franchise to repay the borrowings under the Bridge Facility Agreement in full during the second quarter of 2018.

New Facility Agreement

On 26 March 2019, we entered into a $350 million facility agreement with Bank of America Merrill Lynch International DAC, Barclays Bank PLC, BNP Paribas (London Branch) and Intesa Sanpaolo S.P.A. For more information see "Note 34. Subsequent Events."

Note 19 Other Non-Current Liabilities

(in thousands)	31 December 2018	31 December 2017
Amounts due to employees	$ 6,502	$ 5,390
Unfavourable operating leases	213	252
Escrow indemnity liability - Caisson	–	1,000
Other	2,965	3,676
TOTAL	**$ 9,680**	**$ 10,318**

Note 20 Contingent Consideration, Litigation Provision Liability and Other Provisions

The provisions in the table below are expected to result in payments within the next year.

Current Provisions

(in thousands)	31 December 2018	31 December 2017
Litigation provision liability	$ 161,852	$ –
Contingent consideration	18,530	–
Product remediation	13,945	16,811
Restructuring reserve	9,393	3,560
Contractual warranty reserve	892	1,476
Escrow indemnity liability - Caisson	–	2,000
Other	8,778	4,863
TOTAL	**$ 213,390**	**$ 28,710**

Non-Current Provisions

(in thousands)	31 December 2018	31 December 2017
Litigation provision liability	$ 132,210	$ –
Contingent consideration	161,381	33,973
Liability for uncertain tax provisions (inclusive of penalties and interest)	17,878	18,306
Product remediation	800	10,735
Restructuring reserve	–	392
Other	449	–
TOTAL	**$ 312,718**	**$ 63,406**

Product Remediation

In December 2015, we received an FDA Warning Letter (the "Warning Letter") alleging certain violations of FDA regulations applicable to medical device manufacturing at our Munich, Germany and Arvada, Colorado facilities. On 13 October 2016, the CDC and FDA separately released safety notifications regarding 3T Heater-Cooler devices in response to which we issued a Field Safety Notice Update for U.S. users of our 3T Heater-Cooler devices to proactively and voluntarily contact facilities to facilitate implementation of the CDC and FDA recommendations.

At 31 December 2016, we recognized a liability for a product remediation plan related to our 3T Heater-Cooler device ("3T device"). The remediation plan we developed consists primarily of a modification of the 3T device design to include internal sealing and the addition of a vacuum system to new and existing devices. These changes are intended to address regulatory actions and to reduce further the risk of possible dispersion of aerosols from 3T devices in the operating room. We concluded that it was probable that a liability had been incurred upon management's approval of the plan and the commitments made by management to various regulatory authorities globally in November and December 2016, and furthermore, the cost associated with the plan was reasonably estimable. The deployment of this solution for commercially distributed devices has been dependent upon final validation and verification of the design changes and approval or clearance by regulatory authorities worldwide, including FDA clearance in the U.S. It is reasonably possible that our estimate of the remediation liability could materially change in future years due to the various significant assumptions involved such as customer behaviour, market reaction and the timing of approvals or clearance by regulatory authorities worldwide.

In April 2017, we obtained CE Mark in Europe for the design change of the 3T device, and in May 2017 we completed our first vacuum canister and internal sealing upgrade on a customer-owned device. We are currently implementing the vacuum canister and internal sealing upgrade program in as many countries as possible until all devices are upgraded. On 11 October 2018, after review of information provided by us, the FDA concluded that we could commence the vacuum canister and internal sealing upgrade program in the U.S.

As part of the remediation plan, we continue to offer a no-charge deep disinfection service (deep cleaning service) for 3T device users as we receive the required regulatory approvals. On 12 April 2018, the FDA agreed to allow us to move forward with the deep cleaning service in the U.S., adding to the growing list of countries around the world in which we offer this service. Finally, we are continuing to offer the loaner program for 3T devices, initiated in the fourth quarter of 2016, to provide existing 3T device users with a new loaner 3T device at no charge pending regulatory approval and implementation of the vacuum system addition and deep disinfection service worldwide. This loaner program began in the U.S. and is being made available progressively on a global basis, prioritizing and allocating devices to 3T device users based on pre-established criteria.

We recognized product remediation expenses during the years ended 31 December 2018 and 2017 of $10.7 million and $7.3 million, respectively. Product remediation expenses include internal labour costs, costs to remediate certain inspectional observations made by the FDA at our Munich facility and costs associated with the incorporation of the modification of the 3T device design into the next generation 3T device. These costs and related legal costs are expensed as incurred and are not included within the product remediation liability presented above. During the fourth quarter of 2018, we recognized a $294.1 million liability related to the litigation involving the 3T device. Our related legal costs are expensed as incurred. For further information, please refer to "Note 25. Commitments and Contingencies."

Restructuring reserve

Refer to "Note 9. Restructuring" for more details.

The changes in the carrying value of current provisions during the year are indicated below (in thousands):

	Litigation Provision Liability[1]	Contingent Consideration[2]	Restructuring Reserve	Contractual Warranty Reserve	Product Remediation	Other Reserves	Total
31 December 2016	$ —	$ —	$ 16,859	$ 2,736	$ 23,464	$ 7,642	$ 50,701
Additions to provision	—	—	5,362	1,066	3,458	4,361	14,247
Utilisation	—	—	(16,752)	(1,897)	(12,900)	(1,777)	(33,326)
Release of provisions	—	—	(3,126)	—	(1,071)	(71)	(4,268)
Reclassifications from/(to) non-current	—	—	(433)	—	669	—	236
Currency translation gains/losses	—	—	1,650	322	3,191	(937)	4,226
Discontinued operations	—	—	—	(751)	—	(2,355)	(3,106)
31 December 2017	—	—	3,560	1,476	16,811	6,863	28,710
Opening adjustment for discontinued operations	—	—	(494)	—	—	289	(205)
Change in fair value	—	690	—	—	—	—	690
Additions to provision	161,829	—	11,949	—	—	2,511	176,289
Utilisation	—	(2,465)	(5,962)	(25)	(12,412)	(695)	(21,559)
Release of provisions	—	—	—	(535)	—	—	(535)
Reclassifications from/(to) non-current	—	20,283	392	—	9,679	—	30,354
Currency translation gains/losses	23	22	(52)	(24)	(133)	(190)	(354)
31 DECEMBER 2018	**$ 161,852**	**$ 18,530**	**$ 9,393**	**$ 892**	**$ 13,945**	**$ 8,778**	**$ 213,390**

(1) For additional information refer to "Note 25. Commitments and Contingencies."
(2) The acquisition and nature of the contingent consideration liability for TandemLife is discussed in "Note 7. Business Combinations."

The changes in the carrying value of non-current provisions during the year are indicated below (in thousands):

	Litigation Provision Liability[1]	Contingent Consideration[2] [3]	Liability for Uncertain Tax Provisions	Product Remediation	Restructuring Reserve	Other Reserves	Total
31 December 2016	$ —	$ 3,890	$ 16,857	$ 10,023	$ —	$ 237	$ 31,007
Acquisition of Caisson Interventional LLC	—	31,688	—	—	—	—	31,688
Additions to provision	—	65	(79)	—	—	138	124
Utilisation	—	(1,907)	—	—	—	—	(1,907)
Release of provisions	—	—	—	—	(41)	(172)	(213)
Reclassifications from/(to) current	—	—	—	(669)	433	—	(236)
Currency translation gains/losses	—	237	1,528	1,381	—	28	3,174
Discontinued operations	—	—	—	—	—	(231)	(231)
31 December 2017	—	33,973	18,306	10,735	392	—	63,406
Acquisition of ImThera	—	112,744	—	—	—	—	112,744
Acquisition of TandemLife	—	40,190	—	—	—	—	40,190
Change in fair value(4)	—	(5,001)	—	—	—	—	(5,001)
Additions to provision	132,192	—	4,793	—	—	462	137,447
Utilisation	—	(196)	(8,053)	—	—	—	(8,249)
Reclassifications from/(to) current	—	(20,283)	3,478	(9,679)	(392)	—	(26,876)
Reclassification to tax payable	—	—	—	—	—	—	—
Currency translation gains/losses	18	(46)	(646)	(256)	—	(13)	(943)
31 DECEMBER 2018	**$ 132,210**	**$ 161,381**	**$ 17,878**	**$ 800**	**$ —**	**$ 449**	**$ 312,718**

(1) For additional information refer to "Note 25. Commitments and Contingencies."
(2) The acquisitions of, and nature of the contingent consideration liabilities for, Caisson, ImThera and TandemLife are discussed in "Note 7. Business Combinations."
(3) Utilisation during the years ended 31 December 2018 and 31 December 2017 are payments of sales-based earnouts for Cellplex and for Drilltex.
(4) Includes a net decrease of $2.8 million during 2018 due to a delay in the timing of anticipated regulatory approval for ImThera.

Note 21 Other Payables

(in thousands)	31 December 2018	31 December 2017
Accrued expenses- employee-related charges	$ 54,059	$ 45,616
Amounts due to employees	23,756	14,048
Other accrued expenses	23,294	24,443
Other current liabilities	16,877	5,295
CRM purchase price adjustments payable to MicroPort Scientific Corporation	14,891	—
Other amounts payable to MicroPort Scientific Corporation	9,319	—
Other amounts due to health and social security institution	4,736	6,560
Deferred income	3,304	2,900
Current advances from customers	1,553	1,199
Deferred compensation - Caisson acquisition	—	14,300
Escrow deposit - Caisson	—	2,000
TOTAL	**$ 151,789**	**$ 116,361**

Note 22 Share-Based Incentive Plans

Share-Based Incentive Plans

On 16 October 2015, we approved the adoption of the Company's 2015 Incentive Award Plan, which was previously approved by the Board of Directors of the Company on 14 September 2015 subject to such shareholder approval. The Plan was adopted in order to facilitate the grant of cash and equity incentives to non-employee directors, employees (including our named executive officers) and consultants of the Company and certain of our affiliates and to enable the Company and certain of our affiliates to obtain and retain services of these individuals. The Plan became effective as of 19 October 2015. Incentive awards may be granted under the 2015 Plan in the form of share options, share appreciation rights, restricted share, restricted share units, other share and cash-based awards and dividend equivalents. As of 31 December 2018 and 2017, there were approximately 5,380,000 and 6,115,000 shares available for future grants under the 2015 Plan, respectively.

Share-Based Compensation

Amounts of share-based compensation recognised in the consolidated statement of (loss) income, by expense category are as follows (in thousands):

	Year Ended 31 December 2018	Year Ended 31 December 2017
Cost of sales	$ 1,312	$ 770
Selling, general and administrative	24,000	24,723
Research and development	5,581	1,935
Share-based compensation from continuing operations	30,893	27,428
Stock-based compensation from discontinued operations	1,960	1,433
TOTAL STOCK-BASED COMPENSATION	**$ 32,853**	**$ 28,861**

Amounts of share-based compensation expense recognised in the consolidated statement of (loss) income, by type of arrangement are as follows (in thousands):

	Year Ended 31 December 2018	Year Ended 31 December 2017
Service-based stock appreciation rights	$ 10,637	$ 8,537
Service-based restricted stock units	14,197	16,343
Market performance-based restricted stock units	2,357	732
Operating performance-based restricted stock units	3,702	1,816
TOTAL SHARE-BASED COMPENSATION EXPENSE	**$ 30,893**	**$ 27,428**

The expense for the years ended 31 December 2018 and 31 December 2017 related to awards that were accounted for as equity settled.

Share Options and Share Appreciation Rights

We use the Black-Scholes option pricing methodology to calculate the grant date fair market value of share option awards and share appreciation rights. The following table lists the assumptions we utilized as inputs to the Black-Scholes model:

	Year Ended 31 December 2018	Year Ended 31 December 2017
Weighted average share price	91.06	56.84
Exercise price	88.38–124.79	56.17–80.26
Dividend Yield[1]	–	–
Risk-free interest rate - based on grant date[2]	2.5% – 2.9%	1.7% – 2.2%
Expected option term - in years per group of employees/consultants[3]	5.0 – 5.1	4.6 – 5.2
EXPECTED VOLATILITY AT GRANT DATE[4]	**29.2% – 29.9%**	**29.6% – 30.4%**

(1) *We have not paid dividends and no future dividends have been approved.*
(2) *We use yield rates on U.S. Treasury securities for a period that approximated the expected term of the award to estimate the risk-free interest rate.*
(3) *We estimated the expected term of the awards granted using historic data of actual time elapsed between the date of grant and the exercise or forfeiture of options or SARs for employees. For consultants, the expected term is the remaining time until expiration of the option or SAR.*
(4) *Refer to "Note 2. Basis of Preparation, Use of Accounting Estimates and Significant Accounting Policies - Share-based Compensation" for further information regarding expected volatility.*

The following tables detail the activity for service-based share option awards and share appreciation rights, including awards assumed or issued as a result of the Mergers:

	Year Ended 31 December 2018		Year Ended 31 December 2017	
Options and SARs	**Number of Optioned Shares**	**Wtd. Avg. Exercise Price**	**Number of Optioned Shares**	**Wtd. Avg. Exercise Price**
Outstanding – at beginning of year	2,025,122	$ 56.82	1,949,328	$ 57.07
Granted	648,184	$ 91.06	654,478	$ 56.84
Exercised	(599,601)	$ 57.45	(345,513)	$ 56.60
Forfeited	(118,831)	$ 68.91	(154,381)	$ 59.52
Expired	(13,287)	$ 54.01	(78,790)	$ 58.90
Outstanding – end of year	1,941,587	$ 67.33	2,025,122	$ 56.82
Fully vested and exercisable – end of year	708,485	$ 57.78	944,051	$ 58.37
Fully vested and expected to vest – end of year[1]	1,907,577	$ 67.14	1,990,317	$ 56.82

(1) *Includes the impact of expected future forfeitures.*

The weighted average remaining contractual life for the share options and SARs outstanding at 31 December 2018 and 31 December 2017 is 7.20 years and 6.80 years, respectively.

The aggregate intrinsic value of the options and SARs outstanding at 31 December 2018 and 31 December 2017 is $48.3 million and $46 million, respectively. The aggregate intrinsic value of options and SARs is based on the difference between the fair market value of the underlying share at the end of the year using the market closing share price, and exercise price for in-the-money awards.

The range of exercise prices for options and SARs outstanding year end are categorized in exercise price ranges as follows:

Outstanding Options	**31 December 2018**	**31 December 2017**
$10–30	19,060	46,027
$31–50	166,829	247,505
$51–70	1,137,884	1,715,956
$71–90	533,252	15,634
$91–110	70,254	–
$111–130	14,308	–
TOTAL	**1,941,587**	**2,025,122**

	Year Ended 31 December 2018	**Year Ended 31 December 2017**
Weighted average grant date fair value of SARs granted during the year	$ 28.13	$ 17.19
Weighted average share price of share option and SAR exercises during the year	$ 57.45	$ 56.60
Aggregate intrinsic value of share option and SAR exercises during the year (in thousands)	$ 27,281	$ 5,462

Restricted Share and Restricted Share Units Awards

The following tables detail the activity for service-based restricted share and restricted share unit awards, including activity from restricted share units assumed or issued as a result of the Mergers:

	Year Ended 31 December 2018		Year Ended 31 December 2017	
	Number of Shares	Wtd. Avg. Grant Date Fair Value	Number of Shares	Wtd. Avg. Grant Date Fair Value
Non-vested shares at beginning of year	380,108	$ 57.07	506,219	$ 56.56
Granted	257,004	$ 95.63	131,442	$ 61.37
Vested	(125,140)	$ 59.69	(169,580)	$ 59.09
Forfeited	(61,675)	$ 65.29	(87,973)	$ 56.68
Non-vested shares at end of year	450,297	$ 78.70	380,108	$ 57.07

	Year Ended 31 December 2018	Year Ended 31 December 2017[1]
Weighted average grant date fair value of service-based share grants issued during the year	$ 95.63	$ 61.37
Aggregate fair value of service-based share grants that vested during the year (in thousands)	$ 11,505	$ 9,966

(1) Amounts restated from the 2017 UK Annual Report, which was previously reported as $55.53 and $4,810 thousand for weighted average grant date fair value of service-based share grants issued during the year and aggregate fair value of service-based share grants that vested during the year, respectively, due to a calculation error.

The following tables detail the activity for performance-based and market-based restricted share and restricted share unit awards:

	Year Ended 31 December 2018		Year Ended 31 December 2017	
	Number of Shares	Wtd. Avg. Grant Date Fair Value	Number of Shares	Wtd. Avg. Grant Date Fair Value
Non-vested shares at beginning of year	341,387	$ 41.90	52,083	$ 42.01
Granted	86,409	$ 95.62	346,584	$ 42.11
Vested	(104,887)	$ 43.89	(2,171)	$ 57.60
Forfeited	(27,545)	$ 60.20	(55,109)	$ 42.73
Non-vested shares at end of year	295,364	$ 56.48	341,387	$ 41.9

	Year Ended 31 December 2018	Year Ended 31 December 2017
Weighted average grant date fair value of performance-based share grants issued during the year	$ 95.62	$ 42.11
Aggregate fair value of performance-based share grants that vested during the year (in thousands)	$ 9,409	$ 110

Note 23 Employee Retirement Plans

We sponsor several defined benefit pension plans, which include plans in the U.S., Italy, Germany, Japan and France. We maintain a frozen cash balance retirement plan in the U.S. that is a contributory, defined benefit plan designed to provide the benefit in terms of a stated account balance dependent on the employer's promised interest-crediting rate. In Italy and France we maintain a severance pay defined benefit plan that obligates the employer to pay a severance payment in case of resignation, dismissal or retirement. In other jurisdictions we sponsor non-contributory, defined benefit plans designated to provide a guaranteed minimum retirement benefits to eligible employees.

As at 31 December 2018 and 2017 the net underfunded status of our U.S. and non-U.S. defined benefit pension plans was $19.5 million and $22.6 million, respectively.

Risks Related to Defined-benefit Plans

The defined benefit plans expose the Company to various demographic and economic risks such as longevity risk, investment risks, currency and interest rate risk and in some cases inflation risk. The latter plays a role in the assumed wage increase and in some smaller plans where indexation is mandatory. Pension fund Trustees are responsible for and have full discretion over the investment strategy of the plan assets. In general Trustees manage pension fund risks by diversifying the investments of plan assets and by (partially) matching interest rate risk of liabilities.

The Company has an active de-risking strategy in which it constantly looks for opportunities to reduce the risks associated with its defined benefit plans. The plans are governed by Trustees who have a legal obligation to evenly balance the interests of all stakeholders and operate under the local regulatory framework.

The change in benefit obligations and funded status of our U.S. and non-U.S. pension benefits are as follows (in thousands):

	Year Ended 31 December 2018		Year Ended 31 December 2017	
	U.S. Pension Benefits	Non-U.S. Pension Benefits	U.S. Pension Benefits	Non-U.S. Pension Benefits
ACCUMULATED BENEFIT OBLIGATION AT END OF YEAR	**$ 10,591**	**$ 18,676**	**$ 11,191**	**$ 23,785**
Change in projected benefit obligation				
Projected benefit obligation at beginning of year	$ 11,001	$ 21,548	$ 10,425	$ 20,402
Service cost	–	478	–	503
Interest cost	336	289	361	291
Plan settlements	(340)	–	–	–
Actuarial (gain) loss	8	(818)	770	(27)
Benefits paid	(414)	(1,631)	(555)	(2,222)
Foreign currency exchange rate changes and other	–	(891)	–	2,601
PROJECTED BENEFIT OBLIGATION AT END OF YEAR	**$ 10,591**	**$ 18,975**	**$ 11,001**	**$ 21,548**
Change in plan assets				
Fair value of plan assets at beginning of year	$ 6,879	$ 3,075	$ 5,925	$ 2,898
Actual return on plan assets	(405)	51	444	54
Employer contributions	1,047	361	870	369
Plan settlements	(340)	–	–	–
Benefits paid	(414)	(156)	(360)	(393)
Foreign currency exchange rate changes	–	10	–	147
FAIR VALUE OF PLAN ASSETS AT END OF YEAR	**6,767**	**3,341**	**6,879**	**3,075**
Funded status at end of year				
Fair value of plan assets	6,767	3,341	6,879	3,075
Benefit obligations	10,591	18,975	11,001	21,548
Underfunded status of the plans[1]	3,824	15,634	4,122	18,473
Recognised liability	3,824	15,634	4,122	18,473
Amounts recognised on the consolidated balance sheets consist of:				
Non-current[2]	3,824	15,634	4,122	18,473
RECOGNISED LIABILITY	**$ 3,824**	**$ 15,634**	**$ 4,122**	**$ 18,473**

(1) In certain non-U.S. countries, fully funding pension plans is not a common practice. Consequently, certain pension plans have been partially funded.

(2) These amounts are included within provision for employee severance indemnities and other employee benefit provisions on the consolidated balance sheet as well as social security taxes payable associated with our share-based incentive plans.

Major actuarial assumptions used in determining the benefit obligations and net periodic benefit (income) cost for our significant benefit plans are presented in the following table as weighted averages:

	Year Ended 31 December 2018		Year Ended 31 December 2017	
	U.S. Pension Benefits	Non-U.S. Pension Benefits	U.S. Pension Benefits	Non-U.S. Pension Benefits
Actuarial assumptions used to determine benefit obligation:				
Discount rate	3.97%	0.20% – 1.55%	3.28%	0.27% – 2.73%
Rate of compensation increase	N/A	2.50% – 3.00%	N/A	2.50% – 3.00%
Actuarial assumptions used to determine net periodic benefit cost:				
Discount rate	3.28%	0.27% – 1.55%	3.63%	0.27% – 2.73%
Rate of compensation increase	N/A	2.50% – 3.00%	N/A	2.50% – 3.00%
Expected return on plan assets	**5.00%**	**N/A**	5.00%	N/A

To determine the discount rates for our U.S. benefit plan, we used the FTSE Above Median Pension Discount Curve. For the discount rates used to determine the other non-U.S. benefit plans we consider local market expectations of long-term returns. The resulting discount rates are consistent with the duration of plan liabilities.

The expected long-term rate of return on plan assets assumptions are determined using a building block approach, considering historical averages and real returns of each asset class. In certain countries, where historical returns are not meaningful, consideration is given to local market expectations of long-term returns.

Retirement Benefit Plan Investment Strategy

In the U.S., we have an account that holds the defined benefit frozen balance pension plan assets. The Qualified Plan Committee sets investment guidelines for U.S. pension plans with the assistance of an external consultant. The plan assets in the U.S. are invested in accordance with sound investment practices that emphasize long-term fundamentals. The investment objectives for the plan assets in the U.S. are to achieve a positive rate of return that would be expected to close the current funding deficit and so enable us to terminate the frozen pension plan at a reasonable cost. These guidelines are established based on market conditions, risk tolerance, funding requirements and expected benefit payments. The Plan Committee also oversees the investment allocation process, selects the investment managers, and monitors asset performance. The investment portfolio contains a diversified portfolio of fixed income and equity index funds. Securities are also diversified in terms of domestic and international securities, short- and long-term securities, growth and value styles, large cap and small cap stocks.

Outside the U.S., pension plan assets are typically managed by decentralized fiduciary committees. There is a significant variation in policy asset allocation from country to country. Local regulations, local funding rules, and local financial and tax considerations are part of the funding and investment allocation process in each country. Pension plan assets outside of the U.S. were $3.3 million as of 31 December 2018.

Our U.S. pension plan target allocations as of 31 December 2018 and 31 December 2017, by asset category, are as follows:

	U.S. Pension Benefits	
	31 December 2018	31 December 2017
Equity Securities	29%	27%
Debt Securities	70%	63%
OTHER	**1%**	**10%**

Retirement Benefit Fair Values

The following is a description of the valuation methodologies used for retirement benefit plan assets measured at fair value:

Equity Mutual Funds: Valued based on the year-end net asset values of the investment vehicles. The net asset values of the investment vehicles are based on the fair values of the underlying investments of the partnerships valued at the closing price reported in the active markets in which the individual security is traded. Equity mutual funds have a daily reported net asset value and we classify these investments as Level 2.

Fixed Income Mutual Funds: Valued based on the year-end net asset values of the investment vehicles. The net asset values of the investment vehicles are based on the fair values of the underlying investments of the partnerships valued based on inputs other than quoted prices that are observable.

Money Markets: Valued based on quoted prices in active markets for identical assets.

The following tables provide information by level for the retirement benefit plan assets that are measured at fair value, as defined by IFRS. Refer to "Note 2. Basis of Preparation, Use of Accounting Estimates and Significant Accounting Policies" for discussion of the fair value measurement terms of Levels 1, 2, and 3.

(in thousands)	Fair Value as at 31 December 2018	Fair Value Measurement Using Inputs Considered as Level 1	Level 2	Level 3
Equity mutual funds	$ 1,961	$ –	$ 1,961	$ –
Fixed income mutual funds	4,734	–	4,734	–
Money market funds	72	72	–	–
TOTAL	**$ 6,767**	**$ 72**	**$ 6,695**	**$ –**

(in thousands)	Fair Value as at 31 December 2017	Fair Value Measurement Using Inputs Considered as Level 1	Level 2	Level 3
Equity mutual funds	$ 1,879	$ –	$ 1,879	$ –
Fixed income mutual funds	4,334	–	4,334	–
Money market funds	666	666	–	–
TOTAL	**$ 6,879**	**$ 666**	**$ 6,213**	**$ –**

Retirement Benefit Funding Plan

We have the policy to make the minimum required contribution to fund the U.S. pension plan as determined by MAP – 21 and the Highway and Transportation Funding Act of 2014.

We contributed $1.4 million and $1.2 million to the pension plans (U.S. and non-U.S.) during the years ended 31 December 2018 and 2017, respectively. We anticipate that we will make contributions to the U.S. pension plan of approximately $0.8 million during fiscal year 2019. Contributions to the non-U.S. pension plans in fiscal year 2019 are not expected to be material. The weighted average duration of the defined benefit plans is 14 years and about 10 years for U.S. plan and Non-U.S. plans respectively.

Benefit payments, including amounts to be paid from our assets, and reflecting expected future service, as appropriate, as of 31 December 2018 are expected to be paid as follows:

(in thousands)	U.S. Plan	Non-U.S. Plans
2019	$ 2,242	$ 1,789
2020	1,027	725
2021	790	828
2022	1,046	870
2023	608	1,097
Thereafter	4,878	13,666

Sensitivity Analysis

The sensitivity of the defined benefit obligation as of 31 December 2018 and 31 December 2017 to significant changes in actuarial assumptions are as follows:

	31 December 2018		31 December 2017	
	Increase +0.50%	Decrease –0.50%	Increase +0.50%	Decrease –0.50%
Discount rate	**(5.08)%**	**5.42%**	**(1.01)%**	**5.31%**

The above sensitivity analysis is based on a change in an assumption while holding all other assumptions constant. In practice, this is unlikely to occur, and changes in some of the assumptions may be correlated. When calculating the sensitivity of the defined benefit obligation to significant actuarial assumptions, the same method (present value of the defined benefit obligation calculated with the projected until credit method at the end of the reporting year) has been applied as when calculating the defined benefit liability recognised in the consolidated balance sheets.

Severance Indemnity. In Italy, upon termination of employment for any reason, employers are required to pay a TFR to all employees as required by Italian legislation. The TFR serves as a backup in the event of redundancy or as an additional pension benefit after retirement. The TFR is considered a defined contribution plan with respect to amounts vesting after 1 January 2007 for employees who have opted for a supplementary pensions system or who have chosen to maintain the TFR at the company, for companies with more than 50 employees. A similar termination indemnity is required in France. In France the Indemnités de Fin de Carrière consists in a termination indemnity which must be paid by the employer to an employee in case of retirement, based on a number of monthly gross salary depending by seniority, type of contract and employee level. We have incurred expenses related to the Italian TFR and France severance indemnity of approximately $(0.2) million and $0.4 million, respectively, for the years ended 31 December 2018 and 31 December 2017, respectively.

Defined Contribution Plans. We sponsor defined contribution plans, including the Cyberonics, Inc. Employee Retirement Savings Plan, which qualifies under Section 401(k) of the IRC, covering U.S. employees, the Cyberonics, Inc. Non-Qualified Deferred Compensation Plan, covering certain U.S. middle and senior management and the Belgium Defined Contribution Pension Plan for Cyberonics's Belgium employees. We incurred expenses for our defined contribution plans of $12.0 million and $13.9 million for the years ended 31 December 2018 and 31 December 2017, respectively.

Note 24 Income Taxes

Income tax benefit consists of the following (in thousands):

	Year Ended 31 December 2018	Year Ended 31 December 2017
Current tax	$ (6,697)	$ (40,128)
Deferred tax	78,727	50,113
INCOME TAX BENEFIT	**$ 72,030**	**$ 9,985**

The following is a reconciliation of the statutory income tax rate to our effective income tax rate expressed as a percentage of income before income taxes:

	Year Ended 31 December 2018	Year Ended 31 December 2017
Statutory tax rate at U.K. Rate	19.0%	19.0%
Effect of changes in tax rate	0.6	(27.5)
Change in unrecognized deferred tax assets	(0.8)	13.4
Reduced tax benefit due to non-deductible transaction costs	(0.8)	2.5
U.S. state and local tax provision, net of federal benefit	4.2	1.6
Foreign tax rate differential	2.9	14.9
Notional interest deduction	5.9	(17.0)
U.S. Subpart F	(0.5)	1.8
Research and development tax credits	1.0	(2.1)
Reserve for uncertain tax positions	(0.6)	1.5
Domestic manufacturing deduction	–	(2.2)
Base erosion anti-abuse tax	(1.1)	–
Tax on UK CFC Interest	(1.0)	–
Foreign tax withholding and credits	(0.4)	–
Sale of intellectual property	–	0.2
Distribution of subsidiary earnings	–	(0.4)
Revaluation of investment in subsidiaries	(0.8)	(15.3)
Other, net	(0.2)	(0.8)
EFFECTIVE TAX RATE	**27.4%**	**(10.4)%**

U.S. Tax Reform

On 22 December 2017, the U.S. enacted the Tax Act, which significantly changed U.S. corporate income tax laws by, among other things, reducing the U.S. corporate income tax rate to 21%, which commenced in 2018. In addition, the Tax Act created a mandatory deemed repatriation tax ("transition tax") on previously deferred foreign earnings of non-U.S. subsidiaries controlled by a U.S. corporation, or, in our case, a non-U.S. subsidiary controlled by one of our U.S. subsidiaries. We recorded no transition tax for the year ended 31 December 2017 as we had no previously deferred foreign earnings of U.S. controlled foreign subsidiaries as of the measurement dates. During the fourth quarter of 2018, we finalised our accounting for the remeasurement of the deferred tax assets and liabilities and impairment of foreign tax credits related to the Tax Act. Our accounting for the remeasurement is complete with a final non-cash net charge of $21.0 million.

A new provision enacted under Tax Reform called the base erosion and anti-abuse tax ("BEAT") is effective for 2018. The BEAT provisions provide for a new minimum tax (imposed for certain base erosion payments to Non-U.S. related corporations) if greater than regular tax. For the year ended 31 December 2018, the company was subject to a BEAT of $2.8 million.

To determine the full impact of the tax reform provisions, we are awaiting finalization of proposed U.S. Treasury regulations under the Tax Act that were issued during 2018. We will continue to analyze the Tax Act to determine the full effects of the new law as additional regulations are proposed and finalised.

Deferred Tax Assets and Liabilities

The change in net deferred tax assets (liabilities), inclusive of discontinued operations, as recognized in the balance sheet can be analysed as follows (in thousands):

	Year Ended 31 December 2018	Year Ended 31 December 2017
At the beginning of the year	$ (21,788)	$ (82,550)
Deferred tax benefit for the year, net	93,977	63,261
Deferred tax recorded in equity[1]	(75,140)	3,913
Changes from divestitures	9,298	–
Currency translation and other	8,408	(6,412)
AT THE END OF THE YEAR	**$ 14,755**	**$ (21,788)**

(1) The $75.1 million reduction in deferred tax liability offset to equity was primarily due to excess tax benefit from stock-based compensation and adjustments relating to the ImThera and TandemLife acquisition purchase price accounting.

Deferred tax assets and liabilities, inclusive of discontinued operations, on a gross basis are summarised as follows (in thousands):

	31 December 2018	31 December 2017
Deferred tax assets		
Net operating loss carryforwards (NOLs)	$ 61,107	$ 52,475
Tax credit carryforwards	12,196	5,343
Deferred compensation	11,024	28,521
Accruals and reserves	96,483	27,409
Depreciation and amortization	(6,592)	76,026
Inventory	13,490	16,524
Investments	3,793	3,858
Other	2,226	3,366
Gross deferred tax assets	193,727	213,522
Deferred tax liabilities		
Gain on sale of intellectual property	(59,249)	(75,624)
Investments	(3,114)	(4,917)
Property, equipment & intangible assets	(115,890)	(153,588)
Other	(719)	(1,181)
Gross deferred tax liabilities	(178,972)	(235,310)
DEFERRED TAX ASSETS (LIABILITIES), NET	**$ 14,755**	**$ (21,788)**
Reported in the consolidated balance sheet (after jurisdictional netting)		
Net deferred tax assets	$ 70,581	$ 80,983
Deferred tax liabilities	(55,826)	(102,771)
DEFERRED TAX ASSETS (LIABILITIES), NET	**$ 14,755**	**$ (21,788)**

We remeasured certain deferred tax assets and liabilities based on the rates at which they are expected to reverse in the future.

We have $13.6 million of unrecognised foreign tax credits in the U.S., $6 million of U.S. State tax credits and $5.9 million of other credits.

Net Operating Loss Carryforwards

We had the following net operating loss carryforwards as of 31 December 2018 which can be used to reduce our income tax payable in future years (in thousands):

Region	Gross Amount	Gross Amount with No Expiration	With Expiration	Starting Expiration Year
Europe	$ 183,729	$ 174,125	$ 9,604	2022
U.S. Federal	179,942	—	179,942	2021
U.S. State	120,639	—	120,639	2019
Rest of World	15,613	15,596	17	2023

Included in the table above are gross deferred tax assets that have not been recognized with respect of the following items (in thousands):

	31 December 2018	31 December 2017
Tax loss carryforwards[1]	$ 174,438	$ 274,638
Other[2]	13,956	13,241
TOTAL	**$ 188,394**	**$ 287,879**

(1) Included in tax loss carryforwards for the year ended 31 December 2017 were unrecognized gross deferred tax assets of $182.5 million related to discontinued operations. The tax loss carryforwards represent tax benefits that were not recorded due to the inability to utilize the carryforwards.

(2) Other deferred tax assets for which tax benefits were not recorded refers primarily to U.S. foreign tax credits and U.S. alternative minimum tax credits.

The historic NOLs of Sorin U.S., obtained in the acquisition of Sorin S.p.A. on 19 October 2015, are limited by U.S. Internal Revenue Code Section 382. The limitation on the utilization of NOL is approximately $14.2 million per year, which is expected to be sufficient to absorb the U.S. net operating losses prior to their expiration.

A significant portion of our worldwide net deferred tax liability relates to the tax effect of the step-up in value of the assets acquired with the acquisition of Sorin S.p.A. on 19 October 2015.

No provision has been made for income taxes on undistributed earnings of foreign subsidiaries as of 31 December 2018 because it is our intention to indefinitely reinvest undistributed earnings of our foreign subsidiaries. In the event of the distribution of those earnings in the form of dividends, a sale of the subsidiaries, or certain other transactions, we may be liable for income taxes. There should be no material tax liability on future distributions as most jurisdictions with undistributed earnings have various participation exemptions / no withholding tax. As of 31 December 2018, it was not practicable to determine the amount of the deferred income tax liability related to those investments.

Uncertain Tax Positions

Tax authorities may disagree with certain positions we have taken and assess additional taxes. We regularly assess the likely outcomes of our tax positions in order to determine the appropriateness of our reserves for uncertain tax positions. However, there can be no assurance that we will accurately predict the outcome of these audits and the actual outcome of an audit could have a material impact on our consolidated results of income, financial position or cash flows. If all of our unrecognized tax benefits as of 31 December 2018 were recognized, $19.7 million would impact our effective tax rate. We believe it is reasonably possible that the amount of gross unrecognised tax benefits could be reduced by up to $3.4 million in the next 12 months as a result of the resolution of tax matters in various global jurisdictions and the lapses of statutes of limitations. Refer to "Note 25. Commitments and Contingencies" for additional information regarding the status of current tax litigation.

Accrued interest and penalties related to uncertain tax positions totaled $6.3 million and $8.0 million as of 31 December 2018 and 31 December 2017, respectively, and were included in non-current provisions on our consolidated balance sheets.

On 26 October 2017, the EC announced that an investigation will be opened with respect to the UK's CFC rules. The CFC rules under investigation provide GFE to entities controlled by UK parent companies that are subject to lower tax rates if the activities being undertaken by the CFC relate to financing. On April 2, 2019, the EC concluded that "when financing income from a foreign group company, channelled through an offshore subsidiary, is financed with UK connected capital and there are no UK activities involved in generating the finance profits, the GFE is justified and does not constitute State aid under EU rules." However, in relation to Significant People Functions, "when financing income from a foreign group company, channelled through an offshore subsidiary, derives from UK activities, the GFE is not justified and constitutes State aid under EU rules." HMRC has stated that they do not consider the timing and form of the UK's exit from the EU will have a practical impact on the requirement to recover the alleged aid. Within the coming weeks, HMRC will provide details as to how it will be recovering the amounts required by the decision. Based upon

our assessment of the issue and the limited level of UK activities involved in our financing, no uncertain tax position reserve has been recognized related to this matter.

Other Matters

LivaNova PLC is domiciled and resident in the UK. Our subsidiaries conduct operations and earn income in numerous countries and are subject to the laws of taxing jurisdictions within those countries, and the income tax rates imposed in the tax jurisdictions in which our subsidiaries conduct operations vary. As a result of the changes in the overall level of our income, and the changes in tax laws, our consolidated effective income tax rate may vary from one reporting year to another.

The major jurisdictions where we are subject to income tax examinations are as follows:

Jurisdiction	Earliest year open
U.S. - federal and state	1998
Italy	2014
Germany	2011
England and Wales	2014
Canada	2014

On 13 October 2016, the IRS and U.S. Treasury Department released final and temporary regulations under section 385. In response to comments, the final regulations significantly narrow the scope of the proposed regulations previously issued on 4 April 2016. Like the proposed regulations, the final regulations establish extensive documentation requirements that must be satisfied for a debt instrument to constitute debt for U.S. federal tax purposes and re-characterizes a debt instrument as stock if the instrument is issued in one of a number of specified transactions. Pursuant to a 2017 Executive Order, the Treasury Department reviewed these regulations and determined that they should be retained subject to further review following the enactment of U.S. tax reform. We are awaiting the U.S. Treasury's review of the existing section 385 regulations which could impact our internal financings and potential restructuring in future years.

Executive Order 13789, issued in April 2017, ordered the US Treasury to examine tax regulations for excessive cost, complexity or whether such regulation exceeded IRS's statutory authority, which included IRC Sec. 385.

Note 25 Commitments and Contingencies

FDA Warning Letter

On 29 December 2015, the FDA issued a Warning Letter alleging certain violations of FDA regulations applicable to medical device manufacturers at our Munich, Germany and Arvada, Colorado facilities.

The FDA inspected the Munich facility from 24 August 2015 to 27 August 2015 and the Arvada facility from 24 August 2015 to 1 September 2015. On 27 August 2015, the FDA issued a Form 483 identifying two observed non-conformities with certain regulatory requirements at the Munich facility. We did not receive a Form 483 in connection with the FDA's inspection of the Arvada facility. Following the receipt of the Form 483, we provided written responses to the FDA describing corrective and preventive actions that were underway or to be taken to address the FDA's observations at the Munich facility. The Warning Letter responded in part to our responses and identified other alleged violations related to the manufacture of our 3T Heater-Cooler device that were not previously included in the Form 483.

The Warning Letter further stated that our 3T devices and other devices we manufactured at our Munich facility are subject to refusal of admission into the U.S. until resolution of the issues set forth by the FDA in the Warning Letter. The FDA has informed us that the import alert is limited to the 3T devices, but that the agency reserves the right to expand the scope of the import alert if future circumstances warrant such action. The Warning Letter did not request that existing users cease using the 3T device, and manufacturing and shipment of all of our products other than the 3T device remain unaffected by the import limitation. To help clarify these issues for current customers, we issued an informational Customer Letter in January 2016 and that same month agreed with the FDA on a process for shipping 3T devices to existing U.S. users pursuant to a certificate of medical necessity program.

Finally, the Warning Letter stated that premarket approval applications for Class III devices to which certain Quality System regulation deviations identified in the Warning Letter are reasonably related will not be approved until the violations have been corrected; however, this restriction applies only to the Munich and Arvada facilities, which do not manufacture or design devices subject to Class III premarket approval.

We continue to work diligently to remediate the FDA's inspectional observations for the Munich facility, as well as the additional issues identified in the Warning Letter. We take these matters seriously and intend to respond timely and fully to the FDA's requests.

CDC and FDA Safety Communications and Company Field Safety Notice Update

On 13 October 2016, the CDC and the FDA separately released safety notifications regarding the 3T devices. The CDC's Morbidity and Mortality Weekly Report ("MMWR") and Health Advisory Notice ("HAN") reported that tests conducted by CDC and its affiliates indicate that there appears to be genetic similarity between both patient and 3T device strains of the non-tuberculous mycobacterium ("NTM") bacteria M. chimaera isolated in hospitals in Iowa and Pennsylvania. Citing the geographic separation between the two hospitals referenced in the investigation, the report asserts that 3T devices manufactured prior to 18 August 2014 could have been contaminated during the manufacturing process. The CDC's HAN and FDA's Safety Communication, issued contemporaneously with the MMWR report, each assess certain risks associated with 3T devices and provide guidance for providers and patients. The CDC notification states that the decision to use the 3T device during a surgical operation is to be taken by the surgeon based on a risk approach and on patient need. Both the CDC's and FDA's communications confirm that 3T devices are critical medical devices and enable doctors to perform life-saving cardiac surgery procedures.

Also on 13 October 2016, concurrent with the CDC's HAN and FDA's Safety Communication, we issued a Field Safety Notice Update for U.S. users of 3T devices to proactively and voluntarily contact facilities to aid in implementation of the CDC and FDA recommendations. In the fourth quarter of 2016, we initiated a program to provide existing 3T device users with a new loaner 3T device at no charge pending regulatory approval and implementation of additional risk mitigation strategies worldwide, including a vacuum canister and internal sealing upgrade program and a deep disinfection service. This loaner program began in the U.S. and is being made available progressively on a global basis, prioritizing and allocating devices to 3T device users based on pre-established criteria. We anticipate that this program will continue until we are able to address customer needs through a broader solution that includes implementation of the risk mitigation strategies described above. We are currently implementing the vacuum and sealing upgrade program in as many countries as possible until all devices are upgraded. On 11 October 2018, after review of information provided by us, the FDA concluded that we could commence the vacuum and sealing upgrade program in the U.S. Furthermore, we continue to offer a no-charge deep disinfection service (deep cleaning service) for 3T device users as we receive the required regulatory approvals. On 12 April 2018, the FDA agreed to allow us to move forward with the deep cleaning service in the U.S. adding to the growing list of countries around the world in which we offer this service.

On 31 December 2016, we recognized a liability for our product remediation plan related to our 3T device. We concluded that it was probable that a liability had been incurred upon management's approval of the plan and the commitments made by management to various regulatory authorities globally in November and December 2016, and furthermore, the cost associated with the plan was reasonably estimable. At 31 December 2018, the product remediation liability was $14.7 million. Refer to "Note 20. Contingent Consideration, Litigation Provision Liability and Other Provisions" for additional information.

Litigation

Product Liability

The Company is currently involved in litigation involving our 3T device. The litigation includes a class action complaint in the U.S. District Court for the Middle District of Pennsylvania, federal multi-district litigation in the U.S. District Court for the Middle District of Pennsylvania, various U.S. state court cases and cases in jurisdictions outside the U.S. As of 4 April, 2019, we are aware of approximately 210 filed and unfiled claims worldwide, with the majority of the claims in various federal or state courts throughout the United States. The complaints generally seek damages and other relief based on theories of strict liability, negligence, breach of express and implied warranties, failure to warn, design and manufacturing defect, fraudulent and negligent misrepresentation or concealment, unjust enrichment, and violations of various state consumer protection statutes. The class action, filed in February 2016, consists of all Pennsylvania residents who underwent open heart surgery at WellSpan York Hospital and Penn State Milton S. Hershey Medical Center between 2011 and 2015 and who currently are asymptomatic for NTM infection. Members of the class seek declaratory relief that the 3T devices are defective and unsafe for intended uses, medical monitoring, damages, and attorneys' fees. On 29 March 2019, we announced a settlement framework that provides for a comprehensive resolution of the personal injury cases pending in the multi-district litigation in U.S. federal court, the related class action pending in federal court, as well as certain cases in state courts across the United States. The agreement, which makes no admission of liability, is subject to certain conditions, including acceptance of the settlement by individual claimants and provides for a total payment of up to $225 million to resolve the claims covered by the settlement, with up to $135 million to be paid no earlier than July 2019 and the remainder in January 2020.

However, cases in state courts in the U.S. and in jurisdictions outside the U.S continue to progress. In the fourth quarter of 2018, we recognized a $294.0 million provision, which represents our best estimate of the Company's liability for these matters. While the amount accrued represents our best estimate, the actual liability for resolution of these matters remains uncertain and may vary from our estimate.

Total coverage under the Company's product liability insurance policies is $32.9 million, once the self-retention limit of $11.0 million is met. While the Company has not currently recorded a receivable for recovery under the insurance policies as of 31 December 2018, the Company intends to pursue recovery under the policies in connection with the future settlement of the litigation involving our 3T device.

Environmental Liability

SNIA Litigation

Our subsidiary, Sorin S.p.A. ("Sorin") was created as a result of a spin-off (the "Sorin spin-off") from SNIA S.p.A. ("SNIA") in January 2004. SNIA subsequently became insolvent and the Italian Ministry of the Environment and the Protection of Land and Sea (the "Italian Ministry of the Environment"), sought compensation from SNIA in an aggregate amount of approximately $4 billion for remediation costs relating to the environmental damage at chemical sites previously operated by SNIA's other subsidiaries.

In September 2011 and July 2014, the Bankruptcy Court of Udine and the Bankruptcy Court of Milan held (in proceedings to which we are not parties) that the Italian Ministry of the Environment and other Italian government agencies (the "Public Administrations") were not creditors of either SNIA or its subsidiaries in connection with their claims in the Italian insolvency proceedings. The Public Administrations appealed and in January 2016, the Court of Udine rejected the appeal. The Public Administrations have also appealed that decision to the Supreme Court. In addition, the Bankruptcy Court of Milan's decision has been appealed.

In January 2012, SNIA filed a civil action against Sorin in the Civil Court of Milan asserting joint liability of a parent and a spun-off company. On 1 April 2016, the Court of Milan dismissed all legal actions of SNIA and of the Public Administrations further requiring the Public Administrations to pay Sorin approximately $338,000 for legal fees. The Public Administrations appealed the 2016 Decision to the Court of Appeal of Milan. On 5 March 2019, the Court of Appeal issued a partial decision on the merits: the Court has declared Sorin/LivaNova jointly liable with SNIA for SNIA's environmental liabilities in an amount up to the fair value of the net worth received by Sorin because of the Sorin spin-off. Additionally the Court issued a separate order, continuing the proceeding until a Panel of three experts is appointed to identify the environmental damages and the costs that the Public Administrations already has borne for the clean-up of the Sites to allow the Court to decide on the second claim of the Public Administrations, for a refund for the SNIA environmental liabilities.

We have not recognized an expense in connection with this matter because any potential loss is not currently probable or reasonably estimable. In addition, we cannot reasonably estimate a range of potential loss, if any, that may result from this matter.

Environmental Remediation Order

On 28 July 2015, Sorin received an administrative order (the "Remediation Order") from the Italian Ministry of the Environment directing prompt commencement of environmental remediation at the chemical sites previously operated by SNIA's other subsidiaries. We challenged the Remediation Order before the Administrative Court of Lazio in Rome (the "TAR"), and the TAR annulled the Remediation Order. The Italian Ministry of the Environment appealed to the Council of State. On 22 August 2018, the Council of State confirmed the decision and ordered the Public Administrations to bear court expenses of approximately $5,000. The Public Administrations did not appeal the decision within the required time period and the matter is now concluded.

Opposition to Merger Proceedings

On 28 July 2015, the Public Administrations filed an opposition proceeding before the Commercial Courts of Milan to the merger of Sorin and Cyberonics, Inc., the predecessor companies to LivaNova. The Court authorized the merger and the Public Administrations did not appeal that decision. The proceeding then continued as a civil case, with the Public Administrations seeking damages. The Commercial Court of Milan delivered a decision in October 2016, fully rejecting the Public Administrations' request and awarding us approximately €400,000 (approximately $457,000) in damages for frivolous litigation and legal fees. The Public Administrations appealed to the Court of Appeal of Milan. On 15 May 2018, the Court of Appeal of Milan confirmed its decision authorizing the merger but annulled the penalty for frivolous litigation and reduced the overall contribution to legal fees to €84,000 (approximately $96,000). The Public Administrations subsequently filed an appeal with the Supreme Court against the decision of the Court of Appeal of Milan. The proceedings before the Supreme Court are presently pending, and no decision is expected in 2019. We have not recognized an expense in connection with this matter because any potential loss is not currently probable or reasonably estimable. In addition, we cannot reasonably estimate a range of potential loss, if any, that may result from this matter.

Patent Litigation

On 11 May 2018, Neuro and Cardiac Technologies LLC ("NCT"), a non-practicing entity, filed a complaint in the United States District Court for the Southern District of Texas asserting that the VNS Therapy System, when used with the SenTiva Model 1000 generator, infringes the claims of U.S. Patent No. 7,076,307 owned by NCT. The complaint requests damages that include a royalty, costs, interest, and attorneys' fees. On 13 September 2018 and 12 November 2018, we petitioned the Patent Trial and Appeal Board of the U. S. Patent and Trademark Office (the "Patent Office") for an *inter partes review* ("IPR") of the validity of the '307 patent. The Patent Office declined to institute the IPR related to the September 13 petition, but the November 12 IPR is still pending. The Court has stayed the litigation pending the outcome of the remaining IPR proceeding. We have not recognized an expense in connection with this matter because any potential loss is not currently probable or reasonably estimable. In addition, we cannot reasonably estimate a range of potential loss, if any, that may result from this matter.

Tax Litigation

In a tax audit report received 30 October 2009, the Regional Internal Revenue Office of Lombardy (the "Internal Revenue

Office") informed Sorin Group Italia S.r.l. that, among several issues, it was disallowing in part (for a total of €102.6 million (approximately $117.3 million), related to tax years 2002 through 2006) a tax-deductible write down of the investment in the U.S. company, Cobe Cardiovascular Inc., which Sorin Group Italia S.r.l. recognized in 2002 and deducted in five equal installments, beginning in 2002. In December 2009, the Internal Revenue Office issued notices of assessment for 2002, 2003 and 2004. The assessments for 2002 and 2003 were automatically voided for lack of merit. In December 2010 and October 2011, the Internal Revenue Office issued notices of assessment for 2005 and 2006, respectively. We challenged all three notices of assessment (for 2004, 2005 and 2006) before the relevant Provincial Tax Courts.

The preliminary challenges filed for 2004, 2005 and 2006 were denied at the first jurisdictional level. We appealed these decisions. The appeal submitted against the first-level decision for 2004 was successful. The Internal Revenue Office appealed this second-level decision to the Italian Supreme Court (Corte di Cassazione) on 3 February 2017. The Italian Supreme Court's decision is pending.

The appeals submitted against the first-level decisions for 2005 and 2006 were rejected. We appealed these adverse decisions to the Italian Supreme Court. On 16 November 2018, the Supreme Court returned the decisions for years 2005 and 2006 to the previous-level Court (Regional Tax Court) due to lack of substance of the motivation given in the 2nd level judgments that were appealed.

In November 2012, the Internal Revenue Office served a notice of assessment for 2007, and in July 2013, served a notice of assessment for 2008. In these matters the Internal Revenue Office claims an increase in taxable income due to a reduction (similar to the previous notices of assessment for 2004, 2005 and 2006) of the losses reported by Sorin Group Italia S.r.l. for the 2002, 2003 and 2004 tax years, and subsequently utilized in 2007 and 2008. We challenged both notices of assessment. The Provincial Tax Court of Milan has stayed its decision for years 2007 and 2008 pending resolution of the litigation regarding years 2004, 2005, and 2006. The total amount of losses in dispute is €62.6 million (approximately $71.6 million). We have continuously reassessed our potential exposure in these matters, taking into account the recent, and generally adverse, trend to Italian taxpayers in this type of litigation. Although we believe that our defensive arguments are strong, noting the adverse trend in some of the court decisions, we have recognized a reserve for an uncertain tax position of €17.2 million (approximately $19.6 million) as of 31 December 2018.

Other Matters

Additionally, we are the subject of various pending or threatened legal actions and proceedings that arise in the ordinary course of our business. These matters are subject to many uncertainties and outcomes that are not predictable and that may not be known for extended periods of time. Since the outcome of these matters cannot be predicted with certainty, the costs associated with them could have a material adverse effect on our consolidated net income, financial position or liquidity.

Lease Agreements

We have operating leases for facilities, equipment and vehicles. Rent expense from all operating leases amounted to approximately $24.6 million and $18.8 million for the years ended 31 December 2018 and 31 December 2017, respectively.

The future minimum lease payments for operating leases related to continuing operations as of 31 December 2018 and 31 December 2017 were (in thousands):

	31 December 2018	31 December 2017
No later than 1 year	$ 11,986	$ 13,584
Later than 1 year and no later than 5 years	36,029	34,115
Later than 5 years	20,943	24,632
	$ 68,958	**$ 72,331**

Note 26 Earnings Per Share

Basic EPS is calculated by dividing the profit for the year attributable to owners of the parent by the weighted average number of Ordinary Shares outstanding during the year. Diluted EPS is calculated by dividing the net profit attributable to attributable to owners of the parent by the weighted average number of Ordinary Shares outstanding during the year plus the weighted average number of Ordinary Shares that would be issued on conversion of all the dilutive potential Ordinary Shares into Ordinary Shares.

The following table sets forth the basic and diluted weighted-average shares outstanding used in the computation of basic and diluted earnings per share (in thousands of shares):

	Year Ended 31 December 2018	Year Ended 31 December 2017
Numerator:		
Net (loss) income from continuing operations	$ (190,685)	$ 106,396
Net loss from discontinued operations	(9,954)	(32,330)
(LOSS) INCOME ATTRIBUTABLE TO OWNERS OF THE PARENT	**$ (200,639)**	**$ 74,066**
Denominator:		
Basic weighted average shares outstanding	48,497	48,157
Add effects of stock-based compensation instruments[1]	—	344
DILUTED WEIGHTED AVERAGE SHARES OUTSTANDING	**48,497**	**48,501**
Basic (loss) earnings per share:		
Continuing operations	$ (3.93)	$ 2.21
Discontinued operations	(0.21)	(0.67)
	$ (4.14)	**$ 1.54**
Diluted (loss) earnings per share:		
Continuing operations	$ (3.93)	$ 2.19
Discontinued operations	(0.21)	(0.66)
	$ (4.14)	**$ 1.53**

(1) Excluded from the computation of diluted earnings per share for the years ended 31 December 2018 and 31 December 2017 were stock options, SARs and RSUs totalling 2.7 million and 1.2 million because to include them would have been anti-dilutive.

Note 27 Segment and Geographic Information

Segment Information

We identify operating segments based on the way we manage, evaluate and internally report our business activities to our chief operating decision maker ("CODM"), who is the Chief Executive Officer of LivaNova, for purposes of allocating resources and assessing performance. We have two operating segments: CV and NM.

The CV segment generates its revenue from the development, production and sale of cardiopulmonary products, heart valves and advanced circulatory support. Cardiopulmonary products include oxygenators, heart-lung machines, autotransfusion systems, perfusion tubing systems, cannulae and other related accessories. Heart valves include mechanical heart valves, tissue heart valves and related repair products. Advanced circulatory support, which represents our recently acquired TandemLife business, includes temporary life support product kits that can include a combination of pumps, oxygenators, and cannulae.

Our NM segment generates its revenue from the design, development and marketing of NM therapy systems for the treatment of drug-resistant epilepsy and TRD. NM products include the VNS Therapy System, which consists of an implantable pulse generator, a lead that connects the generator to the vagus nerve, and other accessories. On 16 January 2018, we acquired the remaining 86% outstanding interest in ImThera, which is also included in our NM segment. ImThera manufactures an implantable device for the treatment of obstructive sleep apnea that stimulates multiple tongue muscles via the hypoglossal nerve, which opens the airway while a patient is sleeping.

"Other" includes corporate shared service expenses for finance, legal, human resources and information technology and corporate business development and New Ventures.

Effective 1 January 2018, we began to include the results of heart failure within the NM segment for internal reporting purposes in order to manage and evaluate business activities for purposes of allocating resources and assessing performance. Previously, the results of heart failure were reported within "Other." Segment results for the years ended 31 December 2017 has been recast to conform to the current year presentation.

Net sales of our operating segments include revenues from the sale of products they each develop and manufacture or distribute. We define segment income as operating income before exceptional items. This measurement is included in the reporting package prepared for and used by the CODM in evaluating performance and allocating resources.

The segment's assets included in management evaluations are those used by the segment in the performance of its ordinary activities, or those assets that may be reasonably allocated to the segment as a function of its ordinary activities. These include the following financial statement items: property, plant and equipment; intangible assets; goodwill; investments in associates measured at net equity; investments in other companies; and inventories.

Geographic Information

We operate under three geographic regions: United States, Europe, and Rest of World.

As further described in "Note 3. Revenue Recognition," our CV segment has three primary product lines: cardiopulmonary, heart valves and advanced circulatory support. The table below presents revenue disaggregated by operating segment and geographic region (in thousands):

	Year Ended 31 December 2018	Year Ended 31 December 2017
Cardiopulmonary		
United States	$ 161,134	$ 152,828
Europe	141,720	133,585
Rest of world	233,554	210,911
	536,408	497,324
Heart Valves		
United States	24,709	24,977
Europe	44,258	42,120
Rest of world	56,989	71,096
	125,956	138,193
Advanced Circulatory Support		
United States	18,588	—
Europe	580	—
Rest of world	293	—
	19,461	—
Cardiovascular		
United States	204,431	177,805
Europe	186,558	175,705
Rest of world	290,836	282,007
	681,825	635,517
Neuromodulation		
United States	348,980	316,916
Europe	42,443	34,765
Rest of world	31,567	23,295
	422,990	374,976
Other	2,146	1,784
Totals		
United States	553,411	494,721
Europe[1]	229,001	210,470
Rest of world	324,549	307,086
TOTAL[2] [3]	**$ 1,106,961**	**$ 1,012,277**

(1) Europe sales include those countries in which we have a direct sales presence, whereas European countries in which we sell through distributors are included in Rest of world.

(2) Revenue with external customers includes $34.8 million and $30.8 million in the United Kingdom, our country of domicile, for the years ended 31 December 2018 and 2017, respectively.

(3) No single customer represented over 10% of our consolidated net sales. No country's net sales exceeded 10% of our consolidated sales except for the U.S.

The table below presents a reconciliation of segment (loss) income from continuing operations to consolidated (loss) income from continuing operations (in thousands):

Operating (loss) income before exceptional items	Year Ended 31 December 2018	Year Ended 31 December 2017
Cardiovascular	$ (1,049)	$ 49,107
Neuromodulation	183,847	181,985
Other	(103,822)	(110,846)
Total Operating income before exceptional items	78,976	120,246
Exceptional items	334,356	32,584
OPERATING (LOSS) INCOME FROM CONTINUING OPERATIONS	**$ (255,380)**	**$ 87,662**

The following tables present capital expenditures by operating segment (in thousands):

Capital expenditures	Year Ended 31 December 2018	Year Ended 31 December 2017
Cardiovascular	$ 27,621	$ 18,985
Neuromodulation	1,728	2,504
Other	7,630	7,010
Discontinued operations	1,018	5,608
TOTAL	**$ 37,997**	**$ 34,107**

Property, plant, and equipment, net by geography are as follows (in thousands):

	31 December 2018	31 December 2017
United States	$ 61,315	$ 53,570
Europe	109,252	113,536
Rest of world	9,785	10,883
TOTAL	**$ 180,352**	**$ 177,989**

Note 28 Related Parties

Interests in subsidiaries are set out in "Note 12. Investments in Subsidiaries." Transactions between the Company and its subsidiaries, which are related parties, have been eliminated on consolidation and are not disclosed in this note.

Prior to the Mergers the Company did not carry any transactions with related parties.

The following receivable balances arose from sale and financing transactions with associates (in thousands):

Balance Sheet	31 December 2018	31 December 2017
Financial assets – non-current		
ImThera Medical, Inc.[1]	$ –	$ 1,000
Trade receivables – current		
Microport Sorin	$ –	$ 945

(1) On 16 January 2018, we acquired the remaining 86% outstanding interests in ImThera. Refer to "Note 7. Business Combinations" for further information.

The following receivable balance arose from financing transactions with an equity investment (in thousands):

Balance Sheet	31 December 2018	31 December 2017
Other financial assets – current		
Respicardia, Inc.	$ 597	$ 417

The following sales were entered into with an associate during the years as follows (in thousands):

Statement of (Loss) Income	Year Ended 31 December 2018	Year Ended 31 December 2017
Revenue		
Microport Sorin	$ –	$ 2,785

The following financing transaction was entered into with an equity investment during the years as follows (in thousands):

Statement of (Loss) Income	Year Ended 31 December 2018	Year Ended 31 December 2017
Finance income		
Respicardia, Inc.	$ 48	$ –

Total compensation in respect of key management, who are defined as the Board of Directors and certain members of senior management, is considered to be a related party transaction.

The total compensation in respect of key management was as follows (in thousands):

	Year Ended 31 December 2018	Year Ended 31 December 2017
Salaries and short term benefits	$ 7,480	$ 7,365
Post-employment benefits	530	496
Termination benefits	–	1,483
Share-based compensation	8,704	8,211
TOTAL	**$ 16,714**	**$ 17,555**

There were no other material related party transactions in the current and prior year.

Note 29 Consolidated Statement of (Loss) Income – Expenses by Nature

(in thousands)	Year Ended 31 December 2018	Year Ended 31 December 2017
Revenue	$ 1,106,961	$ 1,012,277
Other revenues and income	9,739	4,995
Cost of materials, service used and change in inventory	(500,427)	(419,229)
Personnel expense	(460,173)	(402,891)
Litigation provision	(294,021)	–
Other operating costs	(31,321)	(25,328)
Amortisation, depreciation and impairment	(73,434)	(72,069)
Additions to provisions	(12,704)	(10,093)
Gain on acquisitions	5,994	39,428
Impairment of investments	–	(8,565)
Interest expense	(9,825)	(7,797)
Interest income	847	1,318
Foreign exchange and other (losses) gains	(1,925)	1,084
Share of loss from equity accounted investments	(644)	(16,719)
(Loss) income from continuing operations before tax	(260,933)	96,411
Income tax benefit	70,248	9,985
Loss from discontinued operations	(9,954)	(32,330)
(LOSS) INCOME ATTRIBUTABLE TO OWNERS OF THE PARENT	**$ (200,639)**	**$ 74,066**

Note 30 Employee and Key Management Compensation Costs

(in thousands)	Year Ended 31 December 2018	Year Ended 31 December 2017
Wages and salaries	$ 361,868	$ 311,322
Share-based payments[1]	30,893	27,428
Other employee costs	67,412	64,141
TOTAL	**$ 460,173**	**$ 402,891**

(1) Represents share-based payments included in personnel expense. Refer to "Note 22. Share-Based Incentive Plans" for total share-based compensation expense.

Details of directors' remuneration are included in pages 42 to 64 of the Directors' Remuneration Report, which forms part of these financial statements.

Employee numbers

The average number of employees by geographic region during the years ended 31 December 2018 and 31 December 2017 are as follows:

(in thousands)	Year Ended 31 December 2018	Year Ended 31 December 2017
U.S.	1,161	1,010
Europe	2,371	2,797
Rest of world	569	693
TOTAL[1]	**4,101**	**4,500**

(1) The average includes approximately 900 employees of the CRM business franchise that was sold on 30 April 2018.

Note 31 Exceptional Items

The following exceptional items are included within operating (loss) income (in thousands):

	Year Ended 31 December 2018	Year Ended 31 December 2017
Merger and integration expenses	$ 24,420	$ 15,528
Restructuring expenses	15,915	17,056
Litigation provision	294,021	–
TOTAL	**$ 334,356**	**$ 32,584**

Merger Expenses

Merger expenses consisted of expenses directly related to the Mergers, such as professional fees for legal services, accounting services, due diligence, as well as investment banking fees. Refer to "Note 7. Business Combinations" for more details.

Integration Expenses

Integration expenses consisted primarily of consultation with regard to our systems integration, organization structure integration, finance, synergy and tax planning, the transition to U.S. GAAP for Sorin activity and certain re-branding efforts.

Restructuring Expenses

After the consummation of the Mergers between Cyberonics with Sorin in October 2015, we initiated several restructuring plans to combine our business operations. We identify costs incurred and liabilities assumed for the restructuring plans. The restructuring plans are intended to leverage economies of scale, eliminate duplicate corporate expenses, streamline distributions and logistics and office functions in order to reduce overall costs.

Litigation provision

The litigation provision was recorded in the fourth quarter of 2018 and represents management's best estimate of the Company's liability for claims associated with our 3T device. See further discussion within "Note 25. Commitments and Contingencies."

Note 32 Auditors' Remuneration

(in thousands)	Year Ended 31 December 2018	Year Ended 31 December 2017
Total audit fees payable to the Company's auditor	$ 8,274	$ 4,111
Audit-related services	18	765
Taxation compliance services	61	50
Taxation advisory services	326	–
Other non-audit services	1	633
TOTAL FEES PAYABLE TO THE COMPANY'S AUDITOR	**$ 8,680**	**$ 5,559**

Note 33 New Accounting Pronouncements

The standards and interpretations that are issued, but not yet effective, up to the date of issuance of the Company's financial statements are disclosed below. The Company intends to adopt these standards, if applicable, when they become effective.

IFRS 9, Financial Instruments

IFRS 9 was issued in May 2014 and we adopted the new guidance on 1 January 2018. The standard replaces the majority of IAS 39, Financial instruments; recognition and impairment, and covers the classification, measurement and de-recognition of financial assets and financial liabilities, introduces a new impairment model for financial assets based on expected losses rather than incurred losses and provides a new hedge accounting model.

IFRS 9 includes a single approach for the classification of financial assets, based on the business model used to manage financial assets in order to generate cash flows and the cash flow characteristics of those financial assets. A financial asset held at amortised cost must be managed under a business model where

financial assets are held to collect contractual cash flows and have cash flows which relate solely to payments of principal and interest. A financial asset held under a business model under which financial assets may be either held to collect contractual cash flows or sold will be classified as held at fair value through Other Comprehensive Income if the SPPI criteria are met. Any other financial assets will be held at fair value through profit or loss or Other Comprehensive Income as appropriate. At inception, an entity at its sole option may irrevocably designate an investment in an equity instrument to be held at fair value through Other Comprehensive Income unless the asset is deemed held for trading or contingent consideration. We did not make this election and therefore, all financial assets will be held at fair value through profit or loss. As such, we recorded a transition adjustment to retained earnings in the amount of $5.5 million related to our investment in ImThera at 1 January 2018.

IFRS 9 also introduces the expected credit loss model for impairment of financial assets which replaces the incurred loss model used in IAS 39. Adoption of the IFRS 9 impairment model did not have a significant impact on our financial statements.

Finally, IFRS 9 provides for an accounting policy option to continue to apply the hedge accounting requirements of IAS 39 or apply IFRS 9. We have elected to continue to apply IAS 39 for hedge accounting and have provided the necessary disclosures in accordance with IFRS 7.

IFRS 15 Revenue from Contracts with Customers

IFRS 15 was issued in May 2014 and establishes a five-step model to account for revenue arising from contracts with customers. IFRS 15 requires an entity to recognize the amount of revenue to which it expects to be entitled for the transfer of promised goods or services to customers and replaces most existing revenue recognition guidance. We adopted the new revenue guidance on 1 January 2018. We elected the modified retrospective transition method, however, we recognized no cumulative effect to the opening balance of retained earnings because the impact on the timing of when revenue is recognized within our Cardiovascular segment, specifically related to heart-lung machines and preventative maintenance contracts on cardiopulmonary equipment was insignificant. The timing of revenue recognition for products and related revenue streams within our Neuromodulation segment and discontinued operations did not change. Upon adoption of the new standard, we implemented new internal controls related to our accounting policies and procedures, including review controls to ensure contractual terms and conditions that may require consideration under the standard are properly identified and analysed.

IFRS 16 Leases

IFRS 16 'Leases' supersedes IAS 17 *'Leases'* and provides a new single model for lessee accounting, eliminating the classification of leases as either operating or finance. For lessee accounting, this will require the majority of existing operating leases to be accounted for by recognising a right-of-use ("ROU") asset and a lease liability on the balance sheet. The rental charge under IAS 17 in the income statement will be replaced with a depreciation charge for the ROU asset and an interest expense on the lease liability. We have elected to apply the modified retrospective transition approach with no restatement of comparative periods' financial information, and will apply IFRS 16's non-capitalization exemption for low-value and short-term leases. We will measure the ROU asset equal to the lease liability, after adjusting for accruals, prepayments and lease incentives, which is referred to as the "modified retrospective approach option B." We expect to recognise approximately $60 million of ROU assets and lease liabilities upon initial adoption on 1 January 2019. Furthermore, from a lessor perspective, certain of our agreements that allow the customer to use, rather than purchase, our medical devices will meet the criteria of being a lease in accordance with the new standard. While the amount of revenue and expenses recognised over the contract term will not be impacted, the timing of revenue and expense recognition may be impacted depending upon lease classification.

There are no other standards and interpretations in issue but not yet adopted that the management anticipate will have a material effect on the reported income or net assets of the Company.

Note 34 Subsequent Events

On 26 March 2019, we entered into a $350 million facility agreement with Bank of America Merrill Lynch International DAC, Barclays Bank PLC, BNP Paribas (London Branch) and Intesa Sanpaolo S.P.A. which matures in March 2022 and includes certain financial covenants. Future borrowings under the facility will bear interest at a rate of LIBOR plus 1.6% for borrowings in U.S. dollars and EURIBOR plus 1.4% for euro-denominated borrowings.

On 29 March 2019, we announced a settlement framework that provides for a comprehensive resolution of the personal injury cases pending regarding our 3T device. Refer to "Note 25. Commitments and Contingencies" for further information.

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Company Statement of (Loss) Income

(In thousands)	Note	Year Ended 31 December 2018	Year Ended 31 December 2017
Revenue		$ 18,947	$ 23,630
Costs and expenses:			
Net operating expenses		(77,537)	(65,703)
Exceptional items	18	(118,630)	(101,675)
Operating loss		(177,220)	(143,748)
Income from subsidiary undertakings		50,202	55,121
Interest income		10,934	3,372
Interest expense		(14,195)	(15,327)
Foreign exchange		(4,841)	(455)
Loss before tax		(135,120)	(101,037)
Income tax benefit	13	11,356	4,355
LOSS FOR THE YEAR		**$ (123,764)**	**$ (96,682)**

LIVANOVA PLC

Company Statement of Comprehensive Income

(In thousands)	Note	Year Ended 31 December 2018	Year Ended 31 December 2017
Loss for the year		$ (123,764)	$ (96,682)
Items of other comprehensive (loss) income that will subsequently be reclassified under profit:			
Cash flow hedges for interest rate fluctuations	8	66	(939)
Tax impact		(16)	402
Foreign currency translation differences		(22,936)	59,367
Total items of other comprehensive (loss) income that will subsequently be reclassified under profit		(22,886)	58,830
Items of other comprehensive loss that will not subsequently be reclassified under profit:			
Remeasurements of net assets for defined benefits	13	(3)	(6)
Tax impact		1	—
Total items of other comprehensive loss that will not subsequently be reclassified under profit		(2)	(6)
Total other comprehensive (loss) income, net of taxes		(22,888)	58,824
TOTAL COMPREHENSIVE LOSS FOR THE YEAR, NET OF TAXES		**$ (146,652)**	**$ (37,858)**

LIVANOVA PLC

Company Balance Sheet

(In thousands)	Note	31 December 2018	31 December 2017
ASSETS			
Non-current assets			
Property, plant and equipment	3	$ 1,204	$ 1,167
Intangible assets	4	971	1,027
Investments in subsidiaries	5	3,029,177	3,172,721
Financial Assets	6	17,706	–
Deferred tax assets	13	15,271	13,615
Other assets		21,813	18,767
Total non-current assets		3,086,142	3,207,297
Trade receivables	7	1,192	5,447
Other receivables		12,587	4,132
Derivative financial instruments	8	237	941
Other financial assets	6	348,586	321,649
Tax receivable		9,791	8,866
Cash and cash equivalents		23,553	76,065
Total current assets		395,946	417,100
TOTAL ASSETS		**$ 3,482,088**	**$ 3,624,397**
LIABILITIES AND EQUITY			
Equity			
Share capital	9	$ 76,144	$ 74,750
Merger relief reserve	9	66,446	66,446
Share premium	9	18,516	14,485
Capital redemption reserve	9	1,897	1,257
Treasury shares	9	(1,462)	(133)
Accumulated other comprehensive income	9	14,197	37,085
Retained earnings		2,459,442	2,613,939
TOTAL EQUITY		**$ 2,635,180**	**$ 2,807,829**
Non-current liabilities			
Derivative financial instruments	8	$ 329	$ 1,294
Financial liabilities	10	243,154	184,177
Provision for employee severance indemnities and other employee benefit provisions		1,852	1,274
Other liabilities	13	1,242	–
Total non-current liabilities		246,577	186,745

LIVANOVA PLC

Company Balance Sheet (continued)

(In thousands)	Note	31 December 2018	31 December 2017
Current liabilities			
Trade payables		14,703	15,210
Other payables	11	28,839	13,805
Provisions		88	–
Derivative financial instruments	8	5,294	751
Other financial liabilities	10	549,438	598,219
Tax payable		1,969	1,838
Total current liabilities		600,331	629,823
TOTAL LIABILITIES AND EQUITY		**$ 3,482,088**	**$ 3,624,397**

Registration number 09451374

The financial statements on pages 145 to 171 were approved by the Board of Directors and were signed on its behalf on 30 April 2019 by:

Damien McDonald
Chief Executive Officer & Director

LIVANOVA PLC

Company Statement of Changes in Equity

(In thousands)	Note	Ordinary Shares: Number of Shares	Ordinary Shares: Share Capital	Merger Relief Reserve	Share Premium	Capital Redemption Reserve	Treasury Shares	Accumulated Other Comprehensive Income (Loss)	Retained Earnings	Total Equity
Balance at 31 December 2016		48,157	$ 74,578	$ 66,446	$ 9,684	$ 1,257	$ (4,500)	$ (21,739)	$ 2,690,870	$ 2,816,596
Share-based compensation plans	12	133	172	–	4,801		4,367	–	19,751	29,091
Total transactions with owners, recognised directly in shareholders' equity		133	172	–	4,801	–	4,367	–	19,751	29,091
Loss for the year		–	–	–	–	–	–	–	(96,682)	(96,682)
Other comprehensive income	9	–	–	–	–	–	–	58,824	–	58,824
Total comprehensive income (loss) for the year		–	–	–	–	–	–	58,824	(96,682)	(37,858)
Balance at 31 December 2017		48,290	74,750	66,446	14,485	1,257	(133)	37,085	2,613,939	2,807,829
Share-based compensation plans	12	110	147	–	4,031	–	558	–	19,267	24,003
Issuances of ordinary shares		1,423	1,887	–	–	–	(1,887)	–	–	–
Purchase of ordinary shares	9	(500)	(640)	–	–	640	–	–	(50,000)	(50,000)
Total transactions with owners, recognised directly in shareholders' equity		1,033	1,394	–	4,031	640	(1,329)	–	(30,733)	(25,997)
Loss for the year		–	–	–	–	–	–	–	(123,764)	(123,764)
Other comprehensive loss		–	–	–	–	–	–	(22,888)	–	(22,888)
Total comprehensive loss for the year		–	–	–	–	–	–	(22,888)	(123,764)	(146,652)
BALANCE AT 31 DECEMBER 2018		**49,323**	**$ 76,144**	**$ 66,446**	**$ 18,516**	**$ 1,897**	**$ (1,462)**	**$ 14,197**	**$ 2,459,442**	**$ 2,635,180**

LIVANOVA PLC

Notes to the Financial Statements

Note 1 Nature of Operations

Company information

LivaNova PLC is a public limited company incorporated in the United Kingdom under the Companies Act 2006 (Registration number 09451374). The Company is domiciled in the United Kingdom and its registered address is 20 Eastbourne Terrace, London, W2 6LG, United Kingdom.

Background

LivaNova was incorporated in England and Wales on 20 February 2015 for the purpose of facilitating the business combination of Cyberonics, Inc., a Delaware corporation and Sorin S.p.A., a joint stock company organized under the laws of Italy. As a result of the business combination, LivaNova became the holding company of the combined businesses of Cyberonics and Sorin. This business combination became effective on 19 October 2015. LivaNova's Ordinary Shares are listed for trading on the Nasdaq exchange under the trading symbol "LIVN".

The principal legislation under which LivaNova operates is the Companies Act 2006, and regulations made thereunder. The LivaNova Shares were admitted to listing on the Official List pursuant to Chapter 14 of the Listing Rules, which sets out the requirements for standard listings. LivaNova complies with Listing Principles 1 and 2 as set out in Chapter 7 of the Listing Rules, as required by the Financial Conduct Authority.

As part of the Mergers Sorin undertook a cross-border legal entity merger with LivaNova (the "Sorin merger") under which LivaNova was the surviving ultimate holding company. The Company elected to apply predecessor accounting to this common control business combination and as a result of the Sorin merger the assets and liabilities of Sorin were transferred to LivaNova and recorded in the Company's books using the predecessor book values in the amount of $903.0 million as at the date of the transfer. All shares of Sorin were cancelled and LivaNova issued 22,673 thousand shares to the Sorin shareholders. As a result of the Sorin merger a merger relief reserve was recorded in the amount of $867.9 million.

Immediately following the Sorin merger, each issued and outstanding Cyberonics common shares was converted into LivaNova Ordinary Shares. As a result of the share conversion, LivaNova issued 26,046 thousand shares to the Cyberonics shareholders in exchange for Cyberonics shares. The investment in Cyberonics was recorded at cost, being the fair value of consideration transferred which is calculated by reference to the fair value of Cyberonics's closing share price of $69.95 per share on 16 October 2015, the last business day prior to the date of the share exchange. As a result of the share exchange transaction the Company recognised a merger reserve in the amount of $1,781.7 million, equal to the difference between the fair value of the increase in the investment carrying value and the aggregate nominal value of the shares issued. Since the shares issued by LivaNova as part of the Cyberonics merger were issued with nominal value equal to fair value on that basis the shares were not issued at a premium, therefore, no share premium was recognised.

In respect of both of these share issues, the Company took merger relief in line with the Companies Act 2006 and recognised a merger relief reserve instead of share premium.

Description of the business

LivaNova is a global medical device company focused on the development and delivery of important therapeutic solutions for the benefit of patients, healthcare professionals and healthcare systems throughout the world. Working closely with medical professionals in the fields of Cardiovascular and Neuromodulation, we design, develop, manufacture and sell innovative therapeutic solutions that are consistent with our mission to improve our patients' quality of life, increase the skills and capabilities of healthcare professionals and minimize healthcare costs.

Note 2 Basis of Preparation, Use of Accounting Estimates and Significant Accounting Policies

Basis of Preparation

The separate financial statements of LivaNova have been prepared on a going concern basis under the historical cost convention, except for derivative financial instruments and share based payments awards that have been measured at fair value in accordance with the Companies Act 2006. The financial statements are presented in U.S. dollars and all values are rounded to the nearest thousands, except when otherwise indicated.

The financial statements for the years ended 31 December 2018 and 31 December 2017 of LivaNova have been prepared

in accordance with Financial Reporting Standard 101 'Reduced Disclosure Framework' ("FRS 101"). The use of FRS 101 has permitted LivaNova to take advantage of the applicable disclosure exemptions in the financial statements, which are summarised below:

Standard Disclosure	Exemption
IFRS 7, 'Financial Instruments: Disclosures'	Full exemption
IFRS 13, 'Fair Value Measurement'	paras 91-99 – disclosure of valuation techniques and inputs used for fair value measurement of assets and liabilities
IAS 7, 'Statement of Cash Flows'	Full exemption
IFRS 2, 'Share-based Payments'	paras 45(b) and 46 to 52 - the number and weighted-average exercise prices of share options and fair value
IAS 8, 'Accounting Policies, Changes in Accounting Estimates and Errors'	paras 30-31 – disclosure in respect of new standards and interpretations that have been issued but which are not yet effective
IAS 24, 'Related Party Disclosures'	para 17 – key management compensation
	The requirements to disclose related party transactions entered into between two or more members of a group, provided that any subsidiary which is a party to the transaction is wholly owned by such a member

New Accounting Pronouncements

IFRS 15 Revenue from Contracts with Customers

IFRS 15 was issued in May 2014 and establishes a five-step model to account for revenue arising from contracts with customers. IFRS 15 requires an entity to recognize the amount of revenue to which it expects to be entitled for the transfer of promised goods or services to customers and replaces most existing revenue recognition guidance. We adopted the new revenue guidance on 1 January 2018. Adoption of IFRS 15 did not have a significant impact on our financial statements.

IFRS 9, Financial Instruments

IFRS 9 was issued in May 2014 and we adopted the new guidance on 1 January 2018. The standard replaces the majority of IAS 39, Financial instruments; recognition and impairment, and covers the classification, measurement and de-recognition of financial assets and financial liabilities, introduces a new impairment model for financial assets based on expected losses rather than incurred losses and provides a new hedge accounting model.

Under IFRS 9 we began measuring our financial assets ,which include financial receivables from subsidiaries, utilizing the expected credit loss model for impairment. Adoption of the IFRS 9 impairment model did not have a significant impact on our financial statements.

Finally, IFRS 9 provides for an accounting policy option to continue to apply the hedge accounting requirements of IAS 39 or apply IFRS 9. We have elected to continue to apply IAS 39 for hedge accounting and have provided the necessary disclosures in accordance with IFRS 7.

Investments

Investments in subsidiaries, associates and joint ventures are accounted for at cost less any provision for impairment.

Foreign currency

Our functional currency is the U.S. dollar; however, a portion of the revenues earned and expenses incurred by certain of our subsidiaries are denominated in currencies other than the U.S. dollar. We determine the functional currency of our subsidiaries that exist and operate in different economic and currency environments based on the primary economic environment in which the subsidiary operates, that is, the currency of the environment in which an entity primarily generates and expends cash. Our significant foreign subsidiaries are located in Europe and the U.S. The functional currency of our significant European subsidiaries is the Euro, and the functional currency of our significant U.S. subsidiaries is the U.S. dollar.

Foreign currency differences arising from translation are recognised in the income statement, except for available-for-sale equity investments which are recognised in other comprehensive income (loss), unless regarding an impairment in which case foreign currency differences that have been recognised in other comprehensive income (loss) are reclassified to the income statement.

The GBP exchange rate to the USD used in preparing the Company financial statements was as follows:

	Weighted Average Rate GBP	Closing Rate GBP
Year Ended 31 December 2018	**0.749697**	**0.781250**
Year Ended 31 December 2017	0.776928	0.739730

All exchange differences are presented as part of "Foreign exchange" on the statement of (loss) income.

Financial Instruments

A financial instrument is any contract that gives rise to a financial asset of one entity and a financial liability or equity instrument of another entity. Financial assets and financial liabilities are offset with the net amount reported in the consolidated balance sheet only if there is a current enforceable legal right to offset the recognised amounts and intent to settle on a net basis, or to realise the assets and settle the liabilities simultaneously.

(a) Financial assets

Initial recognition and measurement

Financial assets are classified, at initial recognition, as financial assets at fair value through profit or loss, loans and receivables, held-to-maturity investments, available-for-sale financial assets, or as derivatives designated as hedging instruments in an effective hedge, as appropriate. The Company determines the classification of its financial assets at initial recognition. All financial assets are recognised initially at fair value plus, in the case of assets not at fair value through profit or loss, transaction costs that are attributable to the acquisition of the financial asset. Purchases or sales of financial assets that require delivery of assets within a time frame established by regulation or convention in the marketplace (regular way trades) are recognised on the trade date, i.e., the date on which the Company commits to purchase or sell the asset.

The subsequent measurement and impairment of financial assets depends on their classification as described below:

Impairment of financial assets

The Company assesses, at each reporting date, whether there is any objective evidence that a financial asset or a group of financial assets is impaired. An impairment exists if one or more events that has occurred since the initial recognition of the asset (an incurred 'loss event'), has an impact on the estimated future cash flows of the financial asset or the group of financial assets that can be reliably estimated. Evidence of impairment may include indications that the debtors, or a group of debtors, is experiencing significant financial difficulty, default or delinquency in interest or principal payments, the probability that they will enter bankruptcy or other financial reorganisation and where observable data indicate that there is a measurable decrease in the estimated future cash flows, such as changes in arrears or economic conditions that correlate with defaults.

The subsequent measurement and impairment of financial assets depends on their classification as described below:

Financial assets at fair value through profit or loss

Financial assets at fair value through profit or loss include financial assets held for trading and financial assets designated upon initial recognition at fair value through profit or loss. Financial assets are classified as held-for trading if they are acquired for the purpose of selling or re-purchasing in the near term. This category includes derivative financial instruments entered into by the Company that are not designated as hedging instruments in hedge relationships as defined by IAS 39. We use freestanding derivative forward contracts to offset exposure to the variability of the value associated with assets and liabilities denominated in a foreign currency. These derivatives are not designated as hedges, and therefore changes in the value of these forward contracts are recognised in income statement, thereby offsetting the current net income (loss) effect of the related change in value of foreign currency denominated assets and liabilities. The Company has not designated any financial assets as at fair value through profit or loss.

Loans and receivables

Loans and receivables are non-derivative financial assets with fixed or determinable payments that are not quoted in an active market. After initial measurement, such financial assets are subsequently measured at amortised cost using the effective interest rate method, less impairment. Amortised cost is calculated by taking into account any discount or premium on acquisition and fees or costs that are an integral part of the EIR. The EIR amortisation is included in finance income in the statement of profit or loss. The receivable balance consists of trade receivables from direct customers and distributors and loans issued. We maintain an expected credit loss provision for expected credit losses based on our estimates of the ability of customers to make required payments, historical credit experience, existing economic conditions and expected future trends. We write off uncollectable accounts against the provision when all reasonable collection efforts have been exhausted. Loans, together with the associated provision are written off when there is no realistic prospect of future recovery and all collateral has been realised or has been transferred to the Company. The losses arising from impairment are recognised in the consolidated statement of (loss) income in cost of sales or other operating expenses for receivables. Refer to "Note 7. Trade Receivables and Expected Credit Loss Provision" for further information.

Available-for-sale financial investments

The Company has certain investments in equity and other securities of unquoted companies that are in varied stages of

development. The investments in these companies are classified as available-for-sale and are valued based on non-market observable information. The valuation requires management to make certain assumptions about the model inputs, including forecast cash flows, the discount rate, credit risk and volatility. The probabilities of the various estimates within the range can be reasonably assessed and are used in management's estimate of fair value for these unquoted equity investments. All financial assets are held at fair value through profit and loss. These investments are included in non-current "Financial assets" on the Company balance sheet.

Derecognition

A financial asset (or, where applicable, a part of a financial asset or part of a group of similar financial assets) is derecognised when:

- The rights to receive cash flows from the asset have expired, or
- The Company has transferred its rights to receive cash flows from the asset or has assumed an obligation to pay the received cash flows in full without material delay to a third party under a `pass-through arrangement, and either (a) the Company has transferred substantially all the risks and rewards of the asset, or (b) the Company has neither transferred nor retained substantially all the risks and rewards of the asset, but has transferred control of the asset.

When the Company has transferred its rights to receive cash flows from an asset or has entered into a pass-through arrangement, it evaluates if and, to what extent, it has retained the risks and rewards of ownership. When it has neither transferred nor retained substantially all of the risks and rewards of the asset nor transferred control of it, the asset is recognised to the extent of its continuing involvement in it. In that case, the Company also recognises an associated liability. The transferred asset and the associated liability are measured on a basis that reflects the rights and obligations that the Company has retained.

Continuing involvement that takes the form of a guarantee over the transferred asset is measured at the lower of the original carrying amount of the asset and the maximum amount of consideration that the Company could be required to repay.

(b) Financial liabilities

Initial recognition and measurement

Financial liabilities are classified, at initial recognition, as financial liabilities at fair value through profit or loss, loans and borrowings (bank debt), payables, or as derivatives designated as hedging instruments in an effective hedge, as appropriate. All financial liabilities are recognised initially at fair value and, in the case of loans and borrowings and payables, net of directly attributable transaction costs. The Company's financial liabilities include trade and other payables, loans and bank debt including bank overdrafts, and derivative financial instruments.

The measurement of financial liabilities depends on their classification, as follows:

Financial liabilities at fair value through profit or loss

Financial liabilities at fair value through profit or loss include financial liabilities held-for-trading and financial liabilities designated upon initial recognition as at fair value through profit or loss. Financial liabilities are classified as held-for-trading if they are acquired for the purpose of selling in the near term. This category includes derivative financial instruments entered into by the Company that are not designated as hedging instruments in hedge relationships as defined by IAS 39, which the Company has elected to apply. Gains or losses on liabilities held-for-trading are recognised in the statement of income or loss. Financial liabilities designated upon initial recognition at fair value through profit or loss are designated at the initial date of recognition, and only if the criteria in IAS 39 are satisfied. The Company has not designated any financial liabilities as at fair value through profit or loss.

Loans and borrowings (bank debt)

After initial recognition, interest bearing loans and borrowings are subsequently measured at amortised cost using the effective interest rate method. Gains and losses are recognised in the company statement of (loss) income when the liabilities are derecognised as well as through the EIR method amortisation process. Amortised cost is calculated by taking into account any discount or premium on acquisition and fees or costs that are an integral part of the EIR. The EIR amortisation is included in finance costs in the statement of profit or loss.

Financial guarantee contracts

Financial guarantee contracts issued by the Company are those contracts that require a payment to be made to reimburse the holder for a loss it incurs because the specified debtor fails to make a payment when due in accordance with the terms of a debt instrument. Financial guarantee contracts are recognised initially as a liability at fair value, adjusted for transaction costs that are directly attributable to the issuance of the guarantee. Subsequently, the liability is measured at the higher of the best estimate of the expenditure required to settle the present obligation at the reporting date and the amount recognised less cumulative amortisation.

Derecognition

A financial liability is derecognised when the obligation under the liability is discharged or cancelled or expires. When an existing financial liability is replaced by another from the same lender on substantially different terms, or the terms of an existing liability are substantially modified, such an exchange or modification is treated as a derecognition of the original liability and the recognition of a new liability. The difference in the respective carrying amounts is recognised in the company statement of (loss) income.

Derivative financial instruments and hedge accounting

We use currency exchange rate derivative contracts and interest rate derivative instruments, to manage the impact of currency exchange and interest rate changes on income statement and cash flows. Derivatives are initially recognised at fair value on the date a derivative contract is entered into

and are subsequently re-measured at fair value. The method of recognising the resulting gain or loss depends on whether the derivative is designated as a hedging instrument, and if so, the nature of the item being hedged. We evaluate hedge effectiveness at inception and on an ongoing basis. If a derivative is no longer expected to be highly effective, hedge accounting is discontinued. Hedge ineffectiveness, if any, is recorded in income statement.

When a hedging instrument expires or is sold or terminated, or when a hedge no longer meets the criteria for hedge accounting, any cumulative gain or loss existing in equity at that time remains in equity and is recognised when the forecast transaction is ultimately recognised in the company statement of (loss) income. When a forecast transaction is no longer expected to occur, the cumulative gain or loss that was reported in equity is immediately reclassified to profit or loss.

In order to minimize income statement and cash flow volatility resulting from currency exchange rate changes, we enter into derivative instruments, principally forward currency exchange rate contracts. These contracts are designed to hedge anticipated foreign currency transactions and changes in the value of specific assets and liabilities and of some revenue. At inception of the forward contract, the derivative is designated as either a freestanding derivative or a cash flow hedge. For derivative instruments that are designated and qualify as a cash flow hedge, the effective portion of the gain or loss on the derivative instrument is reported as a component of accumulated other comprehensive income (loss) and reclassified into the company statement of (loss) income to offset exchange differences originated by the hedged item or to adjust the value of foreign exchange. We do not enter into currency exchange rate derivative contracts for speculative purposes.

We use interest rate derivative instruments designated as cash flow hedges to manage the exposure to interest rate movements and to reduce the risk of increase of borrowing costs by converting floating-rate debt into fixed-rate debt. Under these agreements, we agree to exchange, at specified intervals, the difference between fixed and floating interest amounts calculated by reference to agreed-upon notional principal amounts. The interest rate swaps are structured to mirror the payment terms of the underlying loan. The fair value of the interest rate swaps is reported in the balance sheets financial assets or liabilities (current or non-current) depending upon the gain or loss position of the contract and the maturity of the future cash flows of the fair value of each contract. The effective portion of the gain or loss on these derivatives is reported as a component of accumulated other comprehensive income (loss). The non-effective portion is reported in interest expense in income statement.

Cash and Cash Equivalents

We consider all highly liquid investments with an original maturity of three months or less, consisting of demand deposit accounts and money market mutual funds, to be cash equivalents. Cash equivalents are carried on the consolidated balance sheet at cost, which approximated their fair value.

Borrowing costs

General and specific borrowing costs that are directly attributable to the acquisition, construction or production of a qualifying asset are capitalised during the period of time that is required to complete and prepare the asset for its intended use or sale. Qualifying assets are assets that necessarily take a substantial period of time to get ready for their intended use or sale. Investment income earned on the temporary investment of specific borrowings pending their expenditure on qualifying assets is deducted from the borrowing costs eligible for capitalisation. Other borrowing costs are expensed in the year in which they are incurred.

Property, Plant and Equipment

PP&E is carried at cost, less accumulated depreciation and any accumulated impairment losses. Maintenance and repairs, and minor replacements are charged to expense as incurred, while significant renewals and improvements are capitalised. We compute depreciation using the straight-line method over estimated useful lives. Where an item of PP&E comprises several parts with different useful lives, each part is recognised as a separate item and depreciated over its useful life. Useful life and residual value of PP&E are reviewed at each year-end. As necessary, the occurrence of changes to the useful life or residual value is recognised prospectively as a change in accounting estimates.

Leasehold improvements are depreciated over the shorter of the useful life of an asset or the lease term.

The estimated useful lives for our depreciable PP&E as of 31 December 2018 are as follows:

	Lives in Years
Leasehold improvements	up to 10
Equipment, furniture, fixtures	up to 4

Where there are any internal or external indications that the value of an item of PP&E may be impaired, the recoverable amount of the group of CGUs to which it belongs is calculated. If the recoverable amount is less than the carrying amount of the group of CGUs, a provision for impairment is recorded. PP&E is reviewed for impairment annually on 31st of December.

Impairment of Intangible Assets

The Company assesses at each reporting date whether there is an indication that an asset may be impaired. If any indication exists, or when annual impairment testing for an asset is required, the Company estimates the asset's recoverable amount. An asset's recoverable amount is the higher of an asset's CGU's fair value less costs of disposal and its value in use. Where the carrying amount of an asset or CGU exceeds its recoverable amount, the asset is considered impaired and is written down to its recoverable amount.

Revenue

Revenue largely consists of intercompany re-charges, services and management fees. Revenue is measured at the fair value

of the consideration received or receivable. The Company recognises revenue when the amount of revenue can be reliably measured, it is probable that future economic benefits will flow to the entity and specific criteria have been met.

On 1 January 2018, we adopted IFRS 15, *Revenue from Contracts with Customers*. We elected the modified retrospective transition method; however, we recognized no cumulative effect to the opening balance of retained earnings because the impact on the timing of when revenue is recognized was insignificant. Refer to "Note 3. Revenue Recognition" of the consolidated financial statements.

Defined Benefit Pension Plans and Other Post-Employment Benefits

The Company sponsors various retirement benefit plans, including defined benefit pension plans (pension benefits), defined contribution savings plans and termination indemnity plans. The cost of providing benefits under the defined benefit plans is determined separately for each plan using the projected unit credit method.

Re-measurements, comprising of actuarial gains and losses, the effect of the asset ceiling (excluding amounts included in net interest on the net defined benefit liability) and the return on plan assets (excluding amounts included in net interest on the net defined benefit liability), are recognised immediately in the balance sheet with a corresponding debit or credit to retained earnings through OCI in the year in which they occur. Re-measurements are not reclassified to profit or loss in subsequent years.

Past service costs are recognised in profit or loss on the earlier of:

- The date of the plan amendment or curtailment, and
- The date on which the Company recognises related restructuring costs

Net interest is calculated by applying the discount rate to the net defined benefit liability or asset. The Company recognises the following changes in the net defined benefit obligation under 'Net operating expenses' in the statement of (loss) income:

- Service costs comprising current service costs, past-service costs, gains and losses on curtailments and non-routine settlements
- Net interest expense or income

Provision for TFR is mandatory for Italian companies and is considered:

- a defined benefit plan with respect to amounts vested up to 31 December 2006 and amounts vesting as from 1 January 2007 for employees who have chosen to maintain the TFR at the company, for companies with 50 or fewer employees;
- a defined contribution plan with respect to amounts vesting as from 1 January 2007 for employees who have opted for supplementary pensions or who have chosen to maintain the TFR at the company, for companies with more than 50 employees.

As a defined benefit plan, the TFR is measured using the unit credit projection method based on actuarial assumptions (financial assumptions: discount rate, benefit growth rate). The increase in the present value of the TFR is included in net operating expenses, with the exception of the revaluation of the net liability, which is recorded among items of other comprehensive income. The cost of TFR accrued up to 31 December 2006 no longer includes a component related to future salary increases. Payments of TFR, as a defined contribution plan, are also included in personnel expense, and until they are settled financially, they have a balancing entry in the statement of financial position in the form of current payables.

Share-Based Compensation

We grant share-based incentive awards to directors, officers, key employees and consultants during each fiscal year. We measure the cost of employee services received in exchange for an award of equity instruments based on the grant date fair market value of the award. The cost of equity-settled transactions is recognised in employee benefits expense, together with a corresponding increase in equity over the period in which the service and the performance conditions are fulfilled (the vesting period). The cumulative expense recognised for equity-settled transactions at each reporting date until the vesting date reflects the extent to which the vesting period has expired and the Company's best estimate of the number of equity instruments that will ultimately vest. We issue new shares upon stock option exercises, otherwise issuance of stock for vesting of restricted stock, restricted stock units or exercises of stock appreciation rights are issued from treasury shares. We have the right to elect to pay the cash value of vested restricted stock units in lieu of the issuance of new shares. The social security contributions on employee share-based payment awards are accrued over the service period.

The following share-based incentive awards are offered by the Company:

- ***Share Appreciation Rights.*** A SAR confers upon an employee the contractual right to receive an amount of cash, share, or a combination of both that equals the appreciation in the Company's common share from an award's grant date to the exercise date. SARs may be exercised at the employee's discretion during the exercise period and do not give the employee an ownership right in the underlying share. The SARs may be settled in LivaNova shares and/or cash, as determined by LivaNova and as set forth in the individual award agreements. SARs do not involve payment of an exercise price. We use the Black-Scholes option pricing methodology to calculate the grant date fair market value of SARs. We determine the expected volatility on historical volatility.
- ***Restricted Share and Restricted Share Units.*** We may grant RS and RSUs at no purchase cost to the grantee. The grantees of unvested RSUs have no voting rights or rights to dividends. Sale or transfer of the stock and stock units is restricted until they are vested. The fair market value of service-based RS and RSUs is determined using the market closing price

on the grant date, and compensation is expensed ratably over the vesting period. Calculation of compensation for stock awards requires estimation of employee turnover and forfeiture rates. We have the right to elect to pay the cash value of vested restricted share units in lieu of the issuance of new shares. Under our share-based compensation plans we repurchase a portion of these shares from our employees to permit our employees to meet their minimum statutory tax withholding requirements on vesting of their restricted share.

- ***Market and Performance-Based Restricted Share and Performance-Based Restricted Share Units***. We may grant restricted share and restricted share units subject to market or performance conditions that vest based on the satisfaction of the conditions of the award. The fair market values of market condition-based awards are determined using the Monte Carlo simulation method. The Monte Carlo simulation method is subject to variability as several factors utilised must be estimated, including the derived service period, which is estimated based on our judgement of likely future performance and our share price volatility. The fair value of performance-based awards is determined using the market closing price on the grant date. Derived service periods and the years charged with compensation expense for performance-based awards are estimated based on our judgement of likely future performance and may be adjusted in future years depending on actual performance.

Income Taxes

The tax expense for the year comprises current and deferred tax. Current and deferred tax is recognised in profit or loss, except to the extent that it relates to items recognised in other comprehensive income or directly in equity. In this case, the tax is also recognised in other comprehensive income or directly in equity, respectively.

The income tax expense or credit for the year is the tax payable on the current year's taxable income based on the applicable income tax rate adjusted by changes in deferred tax assets and liabilities attributable to temporary differences and to unused tax losses.

The current income tax charge is calculated on the basis of the tax laws enacted or substantively enacted at the end of the reporting year. Management establishes provisions where appropriate on the basis of amounts expected to be paid to the tax authorities.

Deferred taxes are recognised by the liability method for temporary differences between the carrying amount of assets and liabilities in the balance sheet and their tax base. They are measured at the tax rates that are expected to apply to the year when the asset is realized or the liability is settled, based on tax rates (and tax laws) that have been enacted or substantively enacted at the balance sheet date. Adjustments to deferred taxes resulting from changes in tax rates are recognised in profit or loss. However, when the deferred tax relates to items recognised in equity, the adjustment is also recognised in equity. A deferred tax asset is recognised for all deductible temporary differences to the extent that it is probable that taxable profit will be available against which the deductible temporary difference can be utilized. At each year-end, the Company reviews the recoverable value of deferred tax assets of tax entities holding significant loss carryforwards. This value is based on the strategy for recoverability of the tax loss carryforwards. Deferred taxes are charged or credited directly to equity when the tax relates to items that are recognised directly in equity, such as gains and losses on cash flow hedges and actuarial gains and losses on defined benefit plan obligations. Deferred tax assets and liabilities are set off when they are levied by the same taxation authority and the entity has a legally enforceable right of set off. Deferred taxes are recognised for all temporary differences associated with investments in subsidiaries and associates, except to the extent that the Company is able to control the timing of the reversal of the temporary difference and it is probable that the temporary difference will not reverse in the foreseeable future. Deferred tax balances are not discounted.

Leases

We account for leases that transfer substantially all benefits and risks incident to the ownership of property as an acquisition of an asset and the incurrence of an obligation, and we account for all other leases as operating leases. Certain of our leases provide for tenant improvement allowances that have been recorded as deferred rent and amortized, using the straight-line method, over the life of the lease as a reduction to rent expense. In addition, scheduled rent increases and rent holidays are recognised on a straight-line basis over the term of the lease.

Equity

Ordinary Shares are classified as equity. Incremental costs directly attributable to the issue of new shares or options are shown in equity as a deduction, net of tax, from the proceeds.

Contingencies

The Company is subject to product liability claims, government investigations and other legal proceedings in the ordinary course of business. Legal fees and other expenses related to litigation are expensed as incurred and included in Selling, general and administrative expenses in the statement of (loss) income. Contingent accruals are recorded when the Company determines that a loss is both probable and reasonably estimable. Due to the fact that legal proceedings and other contingencies are inherently unpredictable, our assessments involve significant judgement regarding future events.

Critical Estimates and Judgements

The preparation of our financial statements in conformity with FRS 101 requires management to make estimates and judgements that affect the amounts reported in such financial statements and accompanying notes. These estimates and judgements are based on management's best knowledge of current events and actions we may undertake in the future. Actual results could differ materially from those estimates. Application of the following accounting policies requires certain judgements and estimates that have the potential for the most significant impact on our financial statements:

Critical Judgements

- ***Commitments and Contingencies.*** Refer to "Note 2. Basis of Preparation, Use of Accounting Estimates and Significant Accounting Policies" of the consolidated financial statements.
- ***Exceptional Items.*** Exceptional items are expense or income items which have been determined by management as being material by their size or incidence and are presented separately within the results of the company. The determination of which items are disclosed as exceptional items will affect the presentation of profit measures and requires a degree of judgement. Details relating to exceptional items reported during the year are set out in "Note 18. Exceptional Items."

Note 3 Property, Plant and Equipment

(in thousands)	Leasehold Improvements	Equipment, Furniture & Fixtures	Total
At 31 December 2017			
Gross amount	$ 1,190	$ 3,401	$ 4,591
Accumulated depreciation and impairment	(219)	(3,205)	(3,424)
NET AMOUNT	**$ 971**	**$ 196**	**$ 1,167**
At 31 December 2018			
Gross amount	$ 1,398	$ 3,281	$ 4,679
Accumulated depreciation and impairment	(336)	(3,139)	(3,475)
NET AMOUNT	**$ 1,062**	**$ 142**	**$ 1,204**

Changes during the year in the net amount of each category of property, plant and equipment are indicated below (in thousands):

	Leasehold Improvements	Equipment, Furniture & Fixtures	Total
Net amount at 31 December 2016	$ 919	$ 208	$ 1,127
Additions	117	76	193
Depreciation	(63)	(89)	(152)
Currency translation losses	(2)	1	(1)
Net Amount at 31 December 2017	971	196	1,167
Additions	229	44	273
Depreciation	(138)	(98)	(236)
NET AMOUNT AT 31 DECEMBER 2018	**$ 1,062**	**$ 142**	**$ 1,204**

Note 4 Intangible Assets

(in thousands)	Patents	Trade names	Software and other	Total
At 31 December 2017				
Gross amount	$ 7,986	$ 1,361	$ 6,899	$ 16,246
Accumulated amortisation and impairment	(7,986)	(1,361)	(5,872)	(15,219)
NET AMOUNT	**$ –**	**$ –**	**$ 1,027**	**$ 1,027**
At 31 December 2018				
Gross amount	$ 7,614	$ 1,298	$ 7,055	$ 15,967
Accumulated amortisation and impairment	(7,614)	(1,298)	(6,084)	(14,996)
NET AMOUNT	**$ –**	**$ –**	**$ 971**	**$ 971**

The changes in the net carrying value of each class of intangible assets during the year are indicated below (in thousands):

	Software and other
Net amount at 31 December 2016	$ 1,034
Additions	462
Amortisation	(586)
Currency translation losses	117
Net Amount at 31 December 2017	1,027
Additions	422
Amortisation	(478)
NET AMOUNT AT 31 DECEMBER 2018	**$ 971**

Amortisation costs charged to the statement of (loss) income, within net operating expenses, totalled $0.5 million and $0.6 million for the years ended 31 December 2018 and 31 December 2017, respectively.

The amortisation periods for our finite-lived intangible assets as of 31 December 2018:

	Minimum Life in Years	Maximum Life in Years
Trade names	4	4
Software and other	4	9

Note 5 Investments in Subsidiaries

(in thousands)	Cost
Net amount at 31 December 2016	$ 3,195,829
Additions	23,234
Sale of investment (6.93%)	(30,814)
Capital conferral	59
Impairment	(89,069)
Currency translation	73,482
Net Amount at 31 December 2017	3,172,721
Additions	1,061,800
Sale of investment	(240,472)
Capital reimbursement	(936,620)
Currency translation	(28,252)
NET AMOUNT AT 31 DECEMBER 2018	**$ 3,029,177**

(in thousands)	31 December 2018	31 December 2017
Gross amount	$ 3,029,177	$ 3,297,300
Accumulated impairment	–	(124,579)
NET BOOK VALUE	**$ 3,029,177**	**$ 3,172,721**

We completed the sale of CRM on 30 April 2018. As a result of the sale we sold 100% of our interest in Sorin CRM SAS and we recorded a loss of $104.0 million as an exceptional item for the year ended 31 December 2018. During the year ended 31 December 2017, an impairment of $44.9 million was recorded related to CRM at the LivaNova consolidated group level and as a result, we recorded an impairments of our investment in subsidiaries of $89.1 million during the year ended 31 December 2017. For further information, refer to "Note 7. Business Combinations" of the consolidated financial statements.

During the year ended 31 December 2018, LivaNova PLC acquired LivaNova Hungary LLC and formed LivaNova Cayman Ltd. These entities accounted for $1.0 billion of the additions shown in the table above.

During the year ended 31 December 2018, LivaNova PLC acquired an additional interest in Sorin Group Italia S.r.L. for $11.6 million. This amount is shown within additions in the table above.

During 2018, we restructured our investment in LIVN Irishco UC resulting in the reduction of our investment by $1.0 billion. This amount is shown within capital reimbursement in the table above.

During the year ended 31 December 2018, the investment in Respicardia, Inc. was transferred from Sorin CRM SAS to LivaNova PLC associated with the sale of CRM.

During the year ended 31 December 2017, LivaNova PLC sold 6.93% of its interest in LivaNova UK Holdco Limited to LivaNova UK Limited. The consolidated group ownership of UK Holdco Limited remained at 100%.

The detail of investments in subsidiary undertakings as at 31 December 2018 is shown as follows (in thousands, except ownership percent):

	% Ownership	31 December 2018	31 December 2017
Sorin CRM SAS	0.00	$ —	$ 139,862
LivaNova Switzerland SA	100.00	6,313	6,312
LivaNova Nederland NV	100.00	61,287	61,287
LivaNova Holding USA, Inc.	100.00	886,268	886,268
LivaNova Canada Corp	100.00	73,703	111,013
LIVN UK Holdco Ltd	42.07	187,064	187,064
LIVN US 1, LLC	100.00	147,330	147,330
LIVN Luxco Sarl	100.00	3,000	3,000
LIVN Irishco UC	100.00	344	1,000,271
Cyberonics Holdings LLC	100.00	93	93[1]
LivaNova Cayman Ltd	100.00	950,000	—
LivaNova Hungary LLC	100.00	100,202	—
Cyberonics Netherlands CV	99.00	23,149	23,141[1]
Sorin Group Italia S.r.l.	92.95	571,917	587,671
LivaNova Site Management S.r.l.	86.42	18,507	19,409
LivaNova IP Limited	100.00	—	—
		$ 3,029,177	**$ 3,172,721**

(1) Amounts restated from the 2017 UK Annual Report, which was previously reported as $23,141 thousand and $93 thousand for Cyberonics Holdings LLC and Cyberonics Netherlands CV, respectively, due to a reporting error.

The Company had the following directly and indirectly owned subsidiaries as of 31 December 2018:

	Registered Office	Country of Incorporation	% Consolidated Group Ownership	Parent Name	Parent % Ownership
LivaNova PLC (Italian Branch)	Via Benigno Crespi 17 20159 Milan, Italy	Italy	100		
Caisson Interventional LLC	6500 Wedgwood Rd., Maple Grove, MN 55311	U.S.	100	LivaNova USA Inc.	100
CardiacAssist, Inc. Dba TandemLife	240 Alpha Drive, Pittsburgh, PA 15238	U.S.	100	Livn US Holdco, Inc.	100
Cyberonics Holdings LLC	100 Cyberonics Boulevard, Houston, TX 77058 USA	U.S.	100	Cyberonics Inc	100
Cyberonics Latam SRL	Edificio B49, 51 Ave O, Zona Franca Coyo, Coyo-Alajeuela, Costa Rica 20113	Costa Rica	100	Cyberonics Spain S.L.	100
CYBX Netherlands CV	100 Cyberonics Boulevard, Houston, TX 77058 USA	Netherlands	100	LivaNova Plc	99
Cyberonics Spain SL	100 Cyberonics Boulevard, Houston, TX 77058 USA	Spain	100	Cyberonics Netherlands C.V.	100
ImThera Medical, Inc.	100 Cyberonics Boulevard, Houston, TX 77058 USA	U.S.	100	Cyberonics Inc	16
LivaNova Australia PTY Limited	Tower 2, 123 St Georges Terrace Perth, WA 6000	Australia	100	LivaNova Nederland NV	100
LivaNova Austria GmbH	Schottengasse 1, 4. Stock, Wien, Austria, 1010	Austria	100	LivaNova Nederland NV	100
LivaNova Belgium NV	Ikaroslaan 83, 1930 Zaventem, Belgium	Belgium	100	LivaNova Nederland NV	100
Livanova Brasil Comércio e Distribuição de Equipamentos Médico-hospitalares Ltda	Rua Liege, 54 – Vila Vermelha, 04298-070 – São Paulo - SP - Brasil	Brazil	100	Sorin Group Italia Srl	100
LivaNova Canada Corp.	Suite 900, 1959 Upper Water Street, Halifax, NS, B3J 2X2, Canada	Canada	100	LivaNova PLC	100
LivaNova Cayman Limited	Cannon Place, Grand Cayman, Cayman Islands	Cayman Islands	100	LivaNova PLC	100
LivaNova Colombia Sas	Avenida Calle 80 No. 69-70 Bodega 37, Bogotá, Colombia	Colombia	100	Sorin Group Italia S.r.l.	100
LivaNova Deutschland GmbH	Lindberghstrasse 25, D - 80939 München, Germany	Germany	100	Sorin Group Italia S.r.l.	100
LivaNova Espana, S.L.	Avenida Diagonal 123, planta 10, 08005, Barcelona, Spain	Spain	100	LivaNova Nederland NV	57
LivaNova Finland OY	c/o Kalliolaw Asianajotoimisto Oy, Södra kajen 12, 00130 Helsinki, Finland	Finland	100	Sorin Group Italia S.r.l.	100
LivaNova Holding S.r.l.	Via Benigno Crespi, 17 - 20159 Milano, Italy	Italy	100	Sorin Group Italia S.r.l.	100
LivaNova Holding USA Inc.	14401 W. 65th Way - Arvada, CO 80004 USA	U.S.	100	LivaNova PLC	100
LivaNova Hong Kong Limited	9/F, Wah Yuen Bldg, 149 Queen's Road, Central, Hong Kong, Hong Kong	Hong Kong	100	LivaNova Nederland NV	100
LivaNova Hungary Limited Liability Company	H-1062 Budapest, Váci út 1-3, A épület, 6. em.	Hungary	100	LivaNova PLC	100
LivaNova Inc.	100 Cyberonics Boulevard, Houston, TX 77058 USA	U.S.	100	LivaNova USA Inc.	100

	Registered Office	Country of Incorporation	% Consolidated Group Ownership	Parent Name	Parent % Ownership
LivaNova India Private Limited	Barakhamba Road 110001 New Delhi, India	India	100	LivaNova Nederland NV	100
LivaNova IP Limited	20 Eastbourne Terrace, London, England W2 6LG, United Kingdom	United Kingdom	100	LivaNova PLC	100
LivaNova Japan K.K.	11-1 Nagatacho 2 chome, Chiyoda-ku, Tokyo, 100-6110 Japan	Japan	100	LivaNova Nederland NV	100
LivaNova (Thailand) Ltd	4,4/5 Zen World Tower Level 12, Rajdamri Road, Pathumwan, Pathumwan, Bangkok, 10330, Thailand	Thailand	100	LivaNova Nederland NV	100
LivaNova (China) Medical Technology Co. Ltd	Room 3006, 30F, C Building, SML Centre, No. 610 Xujiahui Road, Huangpu District, Shanghai, 200025, China	China	100	LivaNova Holding S.r.l.	100
LivaNova Malaysia Sdn. Bhd.	Level 10, Meara LGB 1Jalan Wan Kadir Taman Tun Dr. Ismail 60000, Kuala Lumpur, Malaysia	Malaysia	100	LivaNova Nederland NV	100
LivaNova Nederland N.V.	Westerdoksdijk 423, 1013 BX, Amsterdam, Netherlands	Netherlands	100	LivaNova PLC	100
LivaNova Norway AS	c/o AmestoAccounthouse AS, Smeltedigelen 1, 0195 Oslo, Norway	Norway	100	LivaNova Scandinavia AB	100
LivaNova Poland Sp. Z o.o.	Park Postepu Bud A Ul. Postepu 21 PL-02 676 Warszawa, Poland	Poland	100	LivaNova Nederland NV	100
LivaNova SAS	200 Avenue de Paris, Châtillon, 92320, France	France	100	LivaNova Nederland N.V.	100
LivaNova Scandinavia AB	Djupdalsvägen 16, 192 51 Sollentuna, Sweden	Sweden	100	Sorin Group Italia S.r.l.	100
LivaNova Singapore Pte Ltd	The Adelphi, 1 Coleman Street, #10-07, Singapore 179803	Singapore	100	Sorin Group Italia S.r.l.	100
LivaNova Site Management S.r.l.	Via Benigno Crespi 17 20159 Milan, Italy	Italy	100	LivaNova Plc Sorin Group Italia S.r.l.	86 14
LivaNova Switzerland SA	Rue du Grand-Pont 12, 1003 Lausanne	Switzerland	100	LivaNova PLC	100
LivaNova UK Limited	1370 Montpellier Court, Gloucester Business Park, Gloucester, Gloucestershire, GL3 4AH, United Kingdom	United Kingdom	100	LivaNova Nederland NV	100
LivaNova USA Inc.	100 Cyberonics Boulevard, Houston, TX 77058 USA	U.S.	100	LIVN US Holdco LTD	100
Livn Irishco 2 UC	Deloitte, 6 Lapps Quay, Cork, T12 TA48, Ireland	Ireland	100	LIVN UK Holdco LTD	100
Livn Irishco Unlimited Company	Deloitte, 6 Lapps Quay, Cork, T12 TA48, Ireland	Ireland	100	LivaNova PLC	100
Livn Luxco 2 Sarl	15 Rue Edward Steichen L-2540 Luxembourg	Luxembourg	100	LIVN UK Holdco LTD	100
Livn Luxco Sarl	15 Rue Edward Steichen L-2540 Luxembourg	Luxembourg	100	LivaNova PLC	100
Livn UK 2 Co Limited	20 Eastbourne Terrace, London, England W2 6LG, United Kingdom	United Kingdom	100	LIVN US 1 LLC	100

	Registered Office	Country of Incorporation	% Consolidated Group Ownership	Parent Name	Parent % Ownership
Livn UK 3 Co Limited	20 Eastbourne Terrace, London, England W2 6LG, United Kingdom	United Kingdom	100	LIVN US LP	100
Livn UK Holdco Limited	20 Eastbourne Terrace, London, England W2 6LG, United Kingdom	United Kingdom	100	LIVN UK 2 CO Limited LivaNova Plc LivaNova UK Limited	51 42 7
Livn US 1, LLC	100 Cyberonics Boulevard, Houston, TX 77058 USA	U.S.	100	LivaNova PLC	100
Livn US 3 LLC	100 Cyberonics Boulevard, Houston, TX 77058 USA	U.S.	100	Sorin Group USA Inc.	100
Livn US Holdco, Inc.	100 Cyberonics Boulevard, Houston, TX 77058 USA	U.S.	100	LIVN US Lp LIVN UK 3 Co Limited	56 44
Livn US LP	14401 West 65th Way, Arvada, CO 80004	U.S.	100	Livn US Lp Livn US 3 LLC.	83 17
Sobedia Energia	Via Crescentino sn 13040 Saluggia (VC), Italy	Italy	75	LivaNova Site Mgmt S.r.l. Sorin Group Italia Srl	25 50
Sorin Group Czech Republic	Na poriçi 1079/3a Nové Mesto Praha 110 00 Praha 1, Czech Republic	Czech Republic	100	Sorin Group Italia S.r.l.	100
Sorin Group Italia S.r.l.	Via Benigno Crespi, 17 - 20159 Milano, Italy	Italy	100	LivaNova PLC LivaNova Site Mgmt S.r.l.	93 7
Sorin Group Rus LLC	Marshal Proshlyakov str. 30 office 304 123458 Moscow, Russia	Russia	100	Sorin Group Italia S.r.l.	100

Note 6 Financial Assets

The table below lists our non-current financial assets of investments in equity instruments in privately-held companies held at fair value in the consolidated balance sheets:

(in thousands)	31 December 2018	31 December 2017
Respicardia Inc.[1]	$ 17,706	$ –

(1) In connection with the sale of CRM, LivaNova PLC purchased the investment in Respicardia Inc. from Sorin CRM SAS during the year ended 31 December 2018.

Our current financial assets in the balance sheet include receivables from subsidiaries and Respicardia Inc. Receivables from subsidiaries represent loans and current receivable balances due and are repayable on demand.

(in thousands)	31 December 2018	31 December 2017
Financial receivables due from subsidiaries	$ 347,989	$ 321,649
Financial receivables due from Respicardia Inc.	597	–
	$ 348,586	**$ 321,649**

Note 7 Trade Receivables and Expected Credit Loss Provision

Trade receivables consisted of the following (in thousands):

	31 December 2018	31 December 2017
Trade receivables due from third parties	$ 263	$ 281
Trade receivables due from LivaNova subsidiaries	1,193	5,442
Expected credit loss provision	(264)	(276)
TOTAL	**$ 1,192**	**$ 5,447**

Trade receivables are reported net of the expected credit loss provision, the changes in which are provided below (in thousands):

	31 December 2018	31 December 2017
Beginning of year	$ 276	$ 243
Currency translation gains/losses	(12)	33
END OF YEAR	**$ 264**	**$ 276**

Note 8 Derivative Financial Instruments

We enter into derivative instruments, principally foreign exchange forward and interest rate swaps contracts for the purpose of hedging the risk of fluctuations in foreign exchange and interest rates. For additional details refer to our accounting policy "Derivatives" included within "Note 2. Basis of Preparation, Use of Accounting Estimates and Significant Accounting Policies."

Freestanding derivative forward contracts

Freestanding derivative forward contracts are used to offset the exposure to the change in value of our foreign currency denominated financial intercompany transactions (current accounts and loans) of certain long-term loans and the hedging of revenue denominated in JPY and GBP of LivaNova subsidiaries. The gross notional amount of these contracts not designated as hedging instruments, outstanding at 31 December 2018 and 31 December 2017 was $320.2 million and $231.9 million, respectively.

The amount and location of the gains (losses) in the statement of (loss) income related to derivative instruments, not designated as hedging instruments, are as follows (in thousands):

Derivatives Not Designated as Hedging Instruments	Location	Year Ended 31 December 2018	Year Ended 31 December 2017
Foreign currency exchange rate contracts	Foreign exchange	$ (11,211)	$ (11,678)

Interest rate swaps

The Company has a long-term loan from a EIB that bears floating-rate interest rate. To minimize the impact of changes in interest rates on its interest payments under the EIB loan, we entered into interest rate swap agreements to swap floating-rate interest payments for fixed-rate interest payments. The outstanding notional amounts at 31 December 2018 and 31 December 2017 was $38.1 million and $56.0 million, respectively. The interest rate swap agreements mature in June 2026 and have periodic interest settlements. The interest rate swap agreements were designated as a cash flow hedge of the variability of interest payments under the EIB long-term loan agreement due to changes in the floating interest rates by converting from Euribor 3 months floating-rate to a fixed-rate loan.

Presentation in Financial Statements

The amount of gains (losses) and location of the gains (losses) in the statement of (loss) income and accumulated OCI related to interest rate swap derivative instruments designated as cash flow hedges are as follows (in thousands):

	Year Ended 31 December 2018			
	Gross Gains Recognised in OCI on Effective Portion of Derivative		Effective Portion of Gains (Losses) on Derivative Reclassified from:	
Derivatives in Cash Flow Hedging Relationships	Amount		Location	Amount
Interest rate swap contracts	$	—	Interest expense	$ (66)

	Year Ended 31 December 2017			
	Gross Gains Recognised in OCI on Effective Portion of Derivative		Effective Portion of Gains (Losses) on Derivative Reclassified from:	
Derivatives in Cash Flow Hedging Relationships	Amount		Location	Amount
Interest rate swap contracts	$	—	Interest expense	$ 939

The following tables summarize the location and fair value amounts of derivative instruments reported in our balance sheet as of 31 December 2018 (in thousands):

	Asset Derivatives		Liability Derivatives	
Derivatives designated as hedging instruments	Balance Sheet Location	Fair Value	Balance Sheet Location	Fair Value
Interest rate contracts	Non-current financial derivative asset	$ —	Non-current financial derivative liabilities	$ 329
Interest rate contracts	Current financial derivative asset	—	Current financial derivative liabilities	536
Total derivatives designated as hedging instruments		—		865
Derivatives not designated as hedging instruments				
Foreign currency exchange rate contracts	Current financial derivative assets	237	Current financial derivative liabilities	4,758
Total derivatives not designated as hedging instruments		237		4,758
TOTAL DERIVATIVES		**$ 237**		**$ 5,623**

The following tables summarize the location and fair value amounts of derivative instruments reported in the Company's balance sheet as of 31 December 2017 (in thousands):

	Asset Derivatives		Liability Derivatives	
Derivatives designated as hedging instruments	Balance Sheet Location	Fair Value	Balance Sheet Location	Fair Value
Interest rate contracts		$ —	Non-current financial derivative liabilities	$ 1,294
Interest rate contracts		—	Current financial derivative liabilities	751
Total derivatives designated as hedging instruments		—		2,045
Derivatives not designated as hedging instruments				
Foreign currency exchange rate contracts	Current financial derivative assets	941	Current financial derivative liabilities	—
Total derivatives not designated as hedging instruments		941		—
TOTAL DERIVATIVES		**$ 941**		**$ 2,045**

Note 9 Equity

Share capital

Our authorised share capital is as follows:

(in number of shares)	31 December 2018	31 December 2017
Authorised share capital, ordinary shares of £1 each, unlimited shares authorized		
Issued - fully paid	49,323,418	48,290,276
Outstanding	48,205,783	48,287,346[1]

(1) Amount restated from the 2017 UK Annual Report, which was previously reported as 48,290,276, due to a reporting error.

Share Repurchase Plans

On 1 August 2016, the Board of Directors of LivaNova approved the authorization of a share repurchase plan (the "Share Repurchase Program") pursuant to an authority granted by shareholders at the 2016 annual general meeting held on 15 June 2016. The repurchase program was structured to enable us to buy back up to 150.0 million of our shares on NASDAQ between 1 September 2016 through 31 December 2016. On 15 November 2016, the Board of Directors approved an amendment (the "Amended Share Repurchase Program") to the Share Repurchase Program. The Amended Share Repurchase Program authorized the Company to repurchase up to $150.0 million of our shares between 1 September 2016 and 31 December 2018.

For the year ended 31 December 2016, we repurchased and canceled 993,339 shares under this plan at a cost of $50.0 million and an average price per share of $50.32. We did not purchase any additional shares during the year ended 31 December 2017. For the year ended 31 December 2018, we repurchased and canceled 500,333 shares under this plan at a cost of 50.0 million and an average price per share of $99.91.

Treasury Stock

For the year ended 31 December 2018, we issued 1.4 million shares to our Employee Benefit Trust ("EBT"). Shares held by the EBT are issued to employees and directors at exercise of stock-based compensation grants. The balance of shares in the EBT are reported as treasury shares.

Accumulated Other Comprehensive Income

The table below presents the change in each component of accumulated other comprehensive income (loss), net of tax and the reclassifications out of accumulated other comprehensive income into net earnings (in thousands):

	Change in unrealised gain (loss) on derivatives	Foreign currency translation adjustments	Revaluation of net liability (asset) for defined benefits	Total
Ending Balance - 31 December 2016	$ 330	$ (22,059)	$ (10)	$ (21,739)
Reclassification of loss/(gain) from accumulated other comprehensive income, before tax	–	59,367	(6)	59,361
Tax effect	–	–	–	–
Reclassification of loss/(gain) from accumulated other comprehensive income, after tax	–	59,367	(6)	59,361
Reclassification of gain from accumulated other comprehensive income, before tax	(939)	–	–	(939)
Ending Balance - Tax effect	402	–	–	402
Ending Balance - Reclassification of gain from accumulated other comprehensive income, after tax	(537)	–	–	(537)
Ending Balance - Net other comprehensive (loss) income, net of tax	(537)	59,367	(6)	58,824
Ending Balance - 31 December 2017	(207)	37,308	(16)	37,085
Reclassification of gain from accumulated other comprehensive income, before tax	–	(22,936)	(3)	(22,939)
Tax effect	–	–	1	1

	Change in unrealised gain (loss) on derivatives	Foreign currency translation adjustments	Revaluation of net liability (asset) for defined benefits	Total
Reclassification of gain from accumulated other comprehensive income, after tax	–	(22,936)	(2)	(22,938)
Reclassification of loss from accumulated other comprehensive income, before tax	66	–	–	66
Tax effect	(16)	–	–	(16)
Reclassification of loss from accumulated other comprehensive income, after tax	50	–	–	50
Net other comprehensive income (loss), net of tax	50	(22,936)	(2)	(22,888)
ENDING BALANCE – 31 DECEMBER 2018	**$ (157)**	**$ 14,372**	**$ (18)**	**$ 14,197**

Note 10 Financial Liabilities

The outstanding principal amount of long-term debt consisted of the following (in thousands, except interest rates):

	Principal Amount at 31 December 2018	Principal Amount at 31 December 2017	Maturity	Effective Interest Rate in 2018
2017 European Investment Bank[1]	$ 103,570	$ –	June 2026	3.793%
2014 European Investment Bank[2]	47,606	69,894	June 2021	0.990%
Loans payable to LivaNova subsidiaries	111,013	134,247		
Total long-term facilities	262,189	204,141		
Less current portion of long-term debt	(19,035)	(19,964)		
TOTAL LONG-TERM DEBT	**$ 243,154**	**$ 184,177**		

(1) The 2017 European Investment Bank ("2017 EIB") loan was obtained to support certain product development projects. The interest rate for the 2017 EIB loan is reset by the lender each principal payment date based on LIBOR. Interest payments are paid quarterly and principal payments are paid semi-annually. We borrowed $103.6 million under the 2017 EIB loan during the year ended 31 December 2018. The loan is guaranteed by Sorin Group Italia S.r.L., a subsidiary of LivaNova.

(2) The 2014 European Investment Bank ("2014 EIB") loan was obtained in July 2014 to support product development projects. The interest rate for the EIB loan is reset by the lender each quarter based on the Euribor. Interest payments are paid quarterly and principal payments are paid semi-annually. The loan is guaranteed by Sorin Group Italia S.r.L., a subsidiary of LivaNova.

The EIB loans are subject to various terms and conditions:

- certain financial ratios calculated based on the LivaNova consolidated financial statements;
- subordination clauses, based on which the loan cannot be subordinated to other loans, with the exception of loans given preference deriving from legal obligations
- negative pledge clauses that place limits on the issue of collateral;
- other customary clauses for loans of this type, including limits on LivaNova's asset disposals.

The outstanding principal amount of short-term debt consisted of the following (in thousands, except interest rates):

	Principal Amount at 31 December 2018	Principal Amount at 31 December 2017	Effective Interest Rate in 2018
Intesa San Paolo Bank	$ —	$ 23,985	
Barclays	—	20,000	2.33%
Unicredit Banca	—	7,196	0.20%
Other short-term facilities	77	136	
Loans payable to LivaNova subsidiaries	530,326	526,938	
Total short-term facilities	530,403	578,255	
Current portion of long-term debt	19,035	19,964	
TOTAL CURRENT DEBT	**$ 549,438**	**$ 598,219**	

LivaNova PLC, in the management of LivaNova centralized treasury and acting as in-house bank of the Group, receives excess cash from subsidiaries which generate cash.

Also, please refer to "Note 34. Subsequent Events" to the consolidated financial statements in this 2018 Annual Report.

Note 11 Other Payables

(in thousands)	31 December 2018	31 December 2017
Accrued expenses- employee-related charges	$ 7,934	$ 4,093
Other accrued expenses	1,095	4,457
Other current liabilities with subsidiaries	3,005	3,163
CRM purchase price adjustments payable to MicroPort Scientific Corporation	14,891	—
Other liabilities	1,312	461
Other amounts due to health and social security institution	517	1,535
Amounts due to employees	85	96
TOTAL	**$ 28,839**	**$ 13,805**

Note 12 Share-Based Incentive Plans

Share-Based Incentive Plans

On 16 October 2015, we approved the adoption of the Company's 2015 Incentive Award Plan (the "2015 Plan") , which was previously approved by the Board of Directors of the Company on 14 September 2015 subject to such shareholder approval. The 2015 Plan was adopted in order to facilitate the grant of cash and equity incentives to non-employee directors and employees (including our named executive officers) of the Company and certain of our affiliates and to enable the Company and certain of our affiliates to obtain and retain services of these individuals. The Plan became effective as of 19 October 2015. Stock-based awards may be granted under the 2015 Plan in the form of stock options, SARs, RS, RSUs, other stock-based and cash-based awards. As of 31 December 2018, there were approximately 5,380,000 shares available for future grants under the 2015 Plan.

Share Options and Share Appreciation Rights

	The Year Ended 31 December 2018	
Options and SARs	**Number of Optioned Shares**	**Wtd. Avg. Exercise Price**
Exercised	288,892	$ 62.02
Outstanding - end of year	721,068	$ 64.48

The weighted average remaining contractual life for the share options and SARs outstanding at 31 December 2018 and 31 December 2017 was 7.1 years and 6.0 years, respectively.

The aggregate intrinsic value of the options and SARs outstanding at 31 December 2018 and 31 December 2017 was $19.6 million and $18.4 million. respectively. The aggregate intrinsic value of options and SARs is based on the fair market value of the underlying share at the end of the year using the difference between the market closing share price, and exercise price for in-the-money awards.

The range of exercise prices for options and SARs outstanding at 31 December 2018 are categorised in exercise price ranges as follows:

Outstanding Options	31 December 2018	31 December 2017
$21-30	–	3,340
$41-50	136,021	183,250
$51-60	298,631	367,900
$61-70	91,004	275,301
$71-80	9,934	4,101
$81-90	177,190	–
$100-110	6,848	–
$121-130	1,440	–
TOTAL	**721,068**	**833,892**

Restricted Share and Restricted Share Units Awards

The following tables detail the activity for service-based restricted share and restricted share unit awards:

	Year Ended 31 December 2018	
	Number of Shares	Wtd. Avg. Grant Date Fair Value
Non-vested at end of year	209,856	$ 70.34

(in thousands)	Year Ended 31 December 2018
Aggregate fair value of service-based share grants that vested during the year (in thousands)	$ 4,053

The following tables detail the activity for performance-based and market-based restricted share and restricted share unit awards:

	Year Ended 31 December 2018	
	Number of Shares	Wtd. Avg. Grant Date Fair Value
NON-VESTED AT END OF YEAR	**169,215**	**$ 55.39**

(in thousands)	Year Ended 31 December 2018
Aggregate fair value of performance-based share grants that vested during the year	$ 1,256

Note 13 Income Taxes

Income tax benefit consists of the following (in thousands):

	Year Ended 31 December 2018	Year Ended 31 December 2017
Current tax	$ 4,930	$ (1,425)[1]
Deferred tax	6,426	5,780[1]
INCOME TAX BENEFIT	**$ 11,356**	**$ 4,355**

(1) Amounts restated from the 2017 UK Annual Report, which were previously reported as $1,425 thousand and $2,930 thousand for current tax and deferred tax, respectively, due to a reporting error.

The following is a reconciliation of the statutory income tax rate to our effective income tax rate expressed as a percentage of income before income taxes:

	Year Ended 31 December 2018	Year Ended 31 December 2017
Statutory tax rate at U.K. Rate	19.0%	19.0%
Change in tax rate	(1.0)	(1.0)
Permanent differences	(15.9)	(20.0)
Italian branch tax rate differential	0.1	(0.3)
Distribution of subsidiary earnings	7.1	9.8
Change in unrecognized deferred tax assets	–	(2.2)
Tax on UK CFC Interest	(1.9)	(1.80)
Other, net	1.0	0.8
EFFECTIVE TAX RATE	**8.4%**	**4.3%**

Deferred income tax assets and liabilities are summarised as follows (in thousands):

	31 December 2018	31 December 2017
Deferred tax assets:		
Net operating loss carryforwards	$ 11,144	$ 4,855
Accruals and reserves	60	1,521
Share-based compensation	3,678	7,149
Depreciation & amortisation	–	47
Other	389	–
Total deferred tax assets	15,271	13,572
Property, equipment & amortization	–	(9)
Other	–	52
Total deferred tax liabilities	–	43
TOTAL DEFERRED TAX ASSETS, NET	**$ 15,271**	**$ 13,615**

Deferred tax assets have not been recognized with respect of the following items (in thousands):

	31 December 2018	31 December 2017
TAX LOSS CARRYFORWARDS	**$ 58,021**	**$ 73,104**

Deferred tax assets primarily include operating loss carry-forwards. For losses incurred after April 2017 in the UK, we anticipate utilizing these operating loss carry-forwards in 2024 and 2025 as we expect an increase in taxable income due to the full amortization of certain assets. The losses from the last two years are mainly driven by exceptional items and are not expected to continue. We have concluded the operating loss carry-forwards will be recoverable based on estimated future taxable income.

Uncertain Tax Positions

Uncertain tax positions of $1.2 million at 31 December 2018 are presented in the balance sheet as other long-term liabilities.

Note 14 Commitments and Contingencies

Refer to "Note 25. Commitments and Contingencies" to the consolidated financial statements in this 2018 Annual Report.

Lease Agreements

We have operating leases for facilities and equipment. Rent expense from all operating leases amounted to approximately $1.3 million and $1.8 million for the years ended 31 December 2018 and 31 December 2017, respectively.

Future minimum lease payments for operating leases are as follows (in thousands):

	Year ended 31 December 2018	Year ended 31 December 2017
No later than 1 year	$ 1,479	$ 1,669
Later than 1 year and no later than 5 years	4,160	5,971
Later than 5 years	1,113	3,591
TOTAL	**$ 6,752**	**$ 11,231**

Note 15 Related Parties

Interests in subsidiaries are set out in "Note 5. Investments in Subsidiaries."

Note 16 Statement of (Loss) Income – Expenses by Nature

(in thousands)	Year Ended 31 December 2018	Year Ended 31 December 2017
Revenue	$ 18,947	$ 23,630
Other income	–	104
Cost of materials and services used	(54,885)	(46,353)
Personnel expense	(36,582)	(31,322)
Amortisation, depreciation and impairment of, and loss on disposal of, CRM	(104,700)	(89,807)
Interest expense	(14,195)	(15,327)
Income from subsidiary undertakings	50,202	51,929
Interest income	10,934	6,564
Foreign exchange and other losses	(4,841)	(455)
Loss before taxes	(135,120)	(101,037)
Income tax benefit	11,356	4,355
LOSS FOR THE YEAR	**$ (123,764)**	**$ (96,682)**

Note 17 Employee and Key Management Compensation Costs

Details of Directors' remuneration are included in pages 42 to 64 of the Directors' remuneration report, which forms part of these financial statements.

Employee numbers

The average monthly employee numbers on a full-time equivalent basis, including executive directors were 56 and 44 for the years ended 31 December 2018 and 31 December 2017. Our employees are principally engaged in Corporate activities.

Note 18 Exceptional Items

The following exceptional items are included within operating loss (in thousands):

	Year Ended 31 December 2018	Year Ended 31 December 2017
Loss on sale of Sorin CRM SAS	$ 103,986	$ –
CRM investment impairment	–	89,069
Merger and integration expenses	13,851	9,945
Restructuring expenses	793	2,661
	$ 118,630	**$ 101,675**

Merger and integration Expenses

Integration expenses consisted primarily of consultation with regard to: our systems integration, organization structure integration, finance, synergy and tax planning and certain re-branding efforts.

Restructuring Expenses

After the consummation of the Mergers between Cyberonics with Sorin in October 2015, we initiated several restructuring plans to combine our business operations. We identify costs incurred and liabilities assumed for the Restructuring Plans.

The Restructuring Plans are intended to leverage economies of scale, eliminate duplicate corporate expenses, streamline distributions and logistics and office functions in order to reduce overall costs.

CRM Investment Loss on Sale and Impairment

During the years ended 31 December 2018 and 31 December 2017, we recorded $104.0 million and $89.1 million of loss on sale and impairment, respectively, related to the investment in the Sorin CRM SAS subsidiary. Refer to "Note 5. Investments in Subsidiaries" for further details.

Note 19 Auditors' Remuneration

(in thousands)	Year Ended 31 December 2018	Year Ended 31 December 2017
LivaNova auditors		
Fees payable to the Company's auditors and its associates for the audit of parent company financial statements	$ 70	$ 68

GLOSSARY AND DEFINITIONS

The following definitions apply throughout this UK Annual Report (other than in the Financial Statements) unless the context requires otherwise:

"Act"	U.S. enacted the Tax Cuts and Jobs Act;
"Affordable Care Act"	the U.S. Patient Protection and Affordable Care Act, as amended by the Health Care and Educational Reconciliation Act;
"AFS"	Available-for-Sale;
"Anti-Kickback Statute"	the U.S. federal Anti-Kickback Statute;
"Auditor"	PricewaterhouseCoopers LLP, the Company's independent UK statutory auditor;
"Award Value"	the equity award value;
"Brexit"	the UK government's process to withdraw from the EU;
"business unit"	LivaNova's three principal business units, Neuromodulation, Cardiovascular and CRM;
"Caisson"	Caisson Interventional LLC;
"CDC"	Centers for Diseases Control and prevention;
"CEO"	Chief Executive Officer;
"CE Mark"	certification demonstrating minimum standards of performance, safety and quality (i.e., the essential requirements) set out in the EU Medical Devices Directives (Council Directive 93/42/EEC on Medical Devices and Council Directive 90/385/EEC on Active Implantable Medical Devices);
"CFC"	the UK's Controlled Foreign Company
"CFO"	Chief Financial Officer;
"CGUs"	Cash Generating Units;
"CID"	Civil Investigative Demand;
"closing price"	the most recent closing price of an ordinary share of our stock on the Nasdaq as of the grant date;
"CMS"	the Centers for Medicare and Medicaid Services;
"Code"	the US Internal Revenue Code;
"CODM"	the Chief Operating Decision Maker;
"Company"	LivaNova PLC, a company incorporated in England and Wales;
"Companies Act"	the Companies Act 2006 of England and Wales;
"CRM"	Cardiac Rhythm Management business franchise;
"CSA"	Central Sleep Apnoea;
"CS"	Cardiovascular business franchise;
"Cyberonics"	Cyberonics. Inc., a Delaware corporation, including (whether the context requires) its subsidiaries and subsidiary undertakings;
"Cyberonics merger"	the merger of Merger Sub with and into Cyberonics, with Cyberonics continuing as the surviving company and a wholly-owned subsidiary of the Company;
"DAB"	the Departmental Appeals Board of the US Department of Health and Human Services;
"Data Protection Directive"	the Directive 95/46/EC;
"D.S.O."	Days of Sales Outstanding;
"DTC"	Depository Trust & Clearing Corporation;
"€"	the Euro

"EC" ..... the European Commission;
"EEA" ..... the European Economic Area;
"EIB"..... European Investment Bank;
"EIR" ..... Effective Interest Rate;
"EPS"..... Earnings Per Share;
"EU" ..... the European Union;
"EVP" ..... the Employment Value Proposition;
"False Claims Act" ..... the U.S. Federal False Claims Act;
"FCF" ..... Free Cash Flow;
"FCPA" ..... the U.S. Foreign Corrupt Practices Act of 1977;
"FDA" ..... Food and Drug Administration;
"FDCA"..... Food, Drug and Cosmetics Administration;
"FIFO" ..... First-In First-Out;
"FSCAs"..... Field Safety Corrective Actions;
"FX"..... Foreign Exchange;
"GBP" ..... British Pound Sterling;
"£"..... British Pound Sterling;
"GDPR" ..... General Data Protection Regulation;
"GHG" ..... Greenhouse Gas;
"GROUP" ..... LivaNova PLC, a company incorporated in England and Wales;
"HAFTA" ..... the U.S. Highway and Transportation Funding Act of 2014;
"HAN"..... Health Advisory Notice;
"Highlife" ..... Highlife S.A.S.;
"HIPAA"..... the U.S. Health Insurance Portability and Accountability Act of 1996;
"HITECH" ..... the U.S. Health Information Technology and Clinical Health Act;
"HLM"..... Heart-Lung Machine;
"HMRC" ..... Her Majesty's Revenue & Customs;
"IDE" ..... Investigational Device Exemption;
"IFRS"..... International Financial Reporting Standards, as adopted by the EU;
"Incentive Award Plan" ..... the LivaNova PLC 2015 Incentive Award Plan;
"ImThera" ..... ImThera Medical, Inc.;
"IRBs"..... Institutional Review Boards;
"ISO" ..... the International Standards Organisation;
"IRS"..... the U.S. Internal Revenue Service;
"ISDA" ..... International Swaps and Derivatives Association, Inc.;
"KPI" ..... Key Performance Indicator;
"LivaNova" ..... the Company and its subsidiaries and subsidiary undertakings, including (where the context so requires) Cyberonics and Sorin prior to the Mergers becoming effective;
"LOI" ..... Letter of Intent;
"LSE"..... the London Stock Exchange plc;
"LTIP" ..... Long Term Incentive Plan;
"main market" ..... the LSE Main Market;
"MDET" ..... Medical Device Excise Tax;
"MDR" ..... Medical Device Reporting regulations;
"measurement dates"..... the end of the three-year phase-in period and on the last day of each financial year thereafter;
"Medical Devices Regulation" ..... proposals for the revision of the EU regulatory framework for medical devices which would replace the Medical Devices Directive and the Active Implantable Medical Devices Directive;

"Merger" ..... the business combination of Cyberonics and Sorin
"MRI" ..... Magnetic Resonance Imaging;
"MHLW" ..... the Ministry of Health, Labour and Welfare of Japan;
"MMWR" ..... Morbidity and Mortality Weekly Report;
"Nasdaq" ..... the Nasdaq Global Market;
"New Ventures" ..... LivaNova's corporate business development;
"NOLs" ..... the Net Operating Losses;
"NTM" ..... NonTuberculous Mycobacterium;
"OCI" ..... Other Comprehensive Income;
"Official List" ..... the official list of listed securities maintained by the FCA;
"Ordinary Shares" ..... Ordinary Shares of £1.00 each in the capital of the Company;
"OSA" ..... Obstructive Sleep Apnea;
"our" ..... LivaNova Plc collectively with its subsidiaries;
"PAL" ..... the Pharmaceutical Affairs Law of Japan;
"Pearl Meyer" ..... Pearl Meyer & Partners, LLC, an independent compensation consultant with an international scope;
"PMA" ..... Pre-Market Approval;
"PMDA" ..... the Pharmaceutical and Medical Devices Agency of Japan;
"PP&E" ..... Property, Plan & Equipment;
"Principles" ..... the United Nations Guiding Principles on Human Rights;
"PRT" ..... Phospholipid Reduction Treatment;
"PSU" ..... Performance Stock Units;
"Purchase Agreement" ..... Stock and Purchase Agreement to sell CRM business franchise to Microport cardiac Rhythm B.V.;
"QSR" ..... the U.S. FDA's Quality System Regulation under section 520 of the U.S. FDCA;
"Restructuring Plan" ..... the restructuring plan initiated by LivaNova after consummation of the Mergers in October 2015;
"R&D" ..... Research and Development;
"RSUs" ..... Restricted Stock Units;
"rTSR" ..... relative Total Shareholder Return;
"SAM" ..... Sleep Apnea Monitoring;
"SARs" ..... Stock Appreciation Rights;
"SDRT" ..... the UK stamp duty reserve tax;
"SEC" ..... the U.S. Securities and Exchange Commission;
"Section 4985 Excise Tax" ..... the tax imposed under section 4985 of the Code;
"Section 7874" ..... section 7874 of the Code;
"Section 7874 Percentage" ..... the percentage of ownership requirements imposed by Section 7874 under which a company may be considered to be a corporation foreign to the U.S.;
"SG&A" ..... Selling, General and Administrative;
"shares" ..... LivaNova's ordinary shares of £1 per share;
"Sorin" ..... Sorin S.p.A., a joint stock company organised under the laws of Italy, including (where the context so requires), its subsidiaries and subsidiary undertakings;
"Sorin merger" ..... the merger of Sorin with and into the Company, with the Company continuing as the surviving company;
"STIP" ..... Short Term Incentive Plan;
"TFR" ..... severance indemnity;
"the Code" ..... the City Code on Takeovers and Mergers;
"the Company" ..... LivaNova Plc collectively with its subsidiaries;
"the Plans" ..... LivaNova's 2015 and 2016 Reorganization Plans initiated October 2015 and March 2016, respectively, in conjunction with the completion of the Cyberonics and Sorin merger;

"the Public Administrations" ... the Italian Ministry of the Environment and other Italian government agencies;
"the TAR" ..... the Administrative Court of Lazio;
"TMVR"..... Transcatheter Mitral Valve Replacement
"TRD" ..... Treatment Resistant Depression;
"UK" ..... the United Kingdom;
"UK Bribery Act"..... the UK Bribery Act of 2010;
"US" ..... the United States of America;
"USD" ..... the U.S. dollar
"US EPA"..... the U.S. Environmental Protection Agency;
"US GAAP" ..... the accounting principles generally accepted in the U.S.;
"VNS" ..... Vagus Nerve Stimulation;
"WACC"..... Weighted Average Cost of Capital;
"we" ..... LivaNova Plc collectively with its subsidiaries;
"$"..... U.S. dollars;
"2018 LTIP" ..... 2018 annual Long-Term Incentive Program;
"2018 rTSR Peer Group"..... peer group of 27 companies selected by the Committee's compensation consultant;
"3T device" ..... 3T Heater-Cooler device;

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Health innovation that matters

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