Company number 03568010 (England and Wales)

Microsaic Systems plc

Annual Report and Accounts

31 December 2019

CORPORATE INFORMATION AND ADVISORS

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CONTENTS

Highlights & Events

Financial highlights

- Revenues up 50.8% at £0.87m (2018: £0.58m);
- Gross margin 38.8% (2018: 41.8%); margins in H2 were 42.9% versus 31.9% in H1, reflecting better pricing from focussing on niche markets;
- Operating expenses of £3.39m, 2.7% above last year due to additional investment in business development and R&D;
- Net loss of £2.77m is in line with last year; and
- Cash balances at year end of £2.62m (2018: £5.40m) and broadly in line with the Board's expectations.

Key events

- Significant progress in the traditional 'small molecule' chemical and pharmaceutical markets, with four new agreements signed during the year, bringing the total number of OEM and distribution agreements to 12;
- Manufacturing is now fully outsourced;
- Launch in January 2019 of the MiD® ProteinID detector products ("ProteinID"), which can measure in-situ small and large molecules, such as target proteins, their metabolites, and process feedstocks, and which has broad potential for applications in life-science markets, including bioprocessing;
- Collaboration agreement signed with the Massachusetts Institute of Technology ("MIT") to develop market targeted applications for ProteinID;
- Positive results from a proof of concept study for ProteinID undertaken by the Centre for Process Innovation ("CPI"), highlighting key product benefits of the Microsaic technology in bioprocessing applications; and
- Partnership announced with the CPI to demonstrate a working concept for a completely on-line analysis system for real-time control of bioprocessing.

Key events (post year-end)

- On 26 February 2020 Microsaic announced that it had signed a global collaboration and joint sales and marketing heads of terms with Axcend Corp ("Axcend") to integrate the compact Microsaic 4500 MiD® MS with the portable Axcend Focus LC® ("LC/MS system"), and to commercialise the combined system globally using both companies' direct sales and selected distribution channels; and
- On 3 March 2020 the Company announced the appointment of WH Ireland Ltd as joint broker.

CHAIRMAN'S STATEMENT
For the year ended 31 December 2019

On behalf of the Board, I am pleased to present the Company's Annual Report and Accounts for the year ended 31 December 2019.

During 2019, the Company has made encouraging progress in both its traditional small molecule market for mass spectrometry ("MS"), and in the key future growth area of biopharmaceuticals. In the small molecule market, we boosted sales by 50.8% year-on-year and expanded our commercial reach by adding four new partnerships, bringing the total to 12. In the biopharmaceutical market, partnerships with MIT and the CPI have already generated data that demonstrates the utility of Microsaic's MS in the in-situ analysis of small and large molecules. Further data is being produced to assist with ongoing discussions with potential partners in this high growth area.

The Board believes that there are significant growth opportunities available to the business, including organic growth from existing partnerships, direct sales in selected markets in Europe, the launch of complete system products planned for 2020, and ongoing discussions with potential commercial partners in both the traditional small molecule market and the biopharmaceutical market.

As Chairman, I am responsible for ensuring good corporate governance and that we continually aspire to meet the highest standards possible. We continue to meet all of the disclosure requirements adopting best practice wherever possible. Further details of our corporate governance policy can be found in the Corporate Governance Report and on our website.

In May 2019, Professor Andrew Holmes, Non-Executive Director and Company Secretary, stepped down from the Board. The Board wishes to thank Andrew for his dedication and support to the Company over the past 18 years. Bevan Metcalf, Finance Director, has taken on the additional responsibilities of Company Secretary.

The Company concluded 2019 with £2.62m cash in the bank, broadly in line with the Board's expectations. In view of the growth opportunities available to the Company and progress being made, the Board is considering the financing options available to the Company to ensure it is sufficiently capitalised for the opportunities ahead.

I would like to also take this opportunity to thank shareholders, employees, customers and partners for their continuing support.

Peter Grant
Chairman
6 March 2020

STRATEGIC REPORT - Chief Executive's Review
For the year ended 31 December 2019

Introduction

2019 was a year of significant growth for the business. Microsaic has increased its sales channel to 12 partners and has extended its geographic reach to now include China, Southeast Asia, Europe, North America, Japan, and Australasia, with further growth planned in 2020.

I am encouraged by the Company's trajectory, particularly as we see the fruits of business development convert into increasing sales. Revenues from instruments, consumables and service have delivered growth of 50.8% compared to 2018. In 2019 we also completed the outsourcing of production, freeing up resources internally and ensuring that capacity can scale as business growth continues. Targeted investment will be made in 2020 to further strengthen our capabilities in commercialisation and product development.

Progress during 2019

The Company's product revenues grew by £231,051 (49.4%) in 2019 compared with last year, substantially from newly signed partners. Revenues from consumables and spare parts increased by £30,872 (30.2%) over last year while service and support revenues increased by £31,944 (363.2%), as we have proactively sought to grow revenues from support activities.

Microsaic signed four new commercial agreements in 2019, with one OEM partner and three distributors. The new OEM agreement is with Biometrics Technologies Co, Ltd ("BMT"), which will integrate Microsaic's compact MS systems into their liquid chromatography ("LC") platforms to be sold through their channels in SE Asia, Korea, and India. The new distribution agreements are with ST Japan, CM Corp., and Chromatec, which are all value-added re-sellers and distributors of specialist analytical instrumentation and will distribute Microsaic's 4500 MiD® MS detector in Japan, Korea and Australasia respectively.

2019 also saw Microsaic launch ProteinID, which the Board anticipates will be instrumental in growing revenues in life science markets, including process analytical applications such as the manufacture of high value biologic drugs, known as bioprocessing. In collaboration with partners including MIT and the CPI, Microsaic has demonstrated its capabilities in small and large molecule in-situ analysis, where a range of biological entities (such as target drug proteins, metabolites and feedstocks) can be analysed simultaneously in a matter of minutes, potentially generating both cost and time saving opportunities for users, as well as improvements in quality control. This compares with traditional analysis, often in remote centralised laboratories, sometimes taking many days or even weeks to produce results. Data from these studies is being used to support discussions with potential new partners.

Initial findings show that Microsaic's technology has significantly lower running costs (at least less than a tenth) per sample than incumbent techniques and, in addition, significantly reduces capital outlay, as ProteinID removes the need for several conventional analytical instruments. Using in situ testing could greatly reduce the financial impact of biologic batch failures (which can cost hundreds of thousands of pounds per batch), as continuous monitoring can reduce failure rates. The Board believes that there are significant growth opportunities in bioprocessing over the medium term.

Microsaic signed a collaboration agreement with the CPI to demonstrate the use of Microsaic's MS technology in on-line bioprocessing. Starting in January 2020, the Board believes that the project will take approximately 12 months to complete and will deliver an on-line, real-time method for bioreactor chemical analysis and control. Directly interfaced with the bioreactor, Microsaic's point of need MS detector will be integrated with "closed-loop" software which will control the overall system, and will provide continuous, real-time control of the biomanufacturing process, including the provision of additional data analytics for quality monitoring and assurance. Interim findings will be announced as appropriate.

Initial discussions have also been held with several parties about the possibility of progressing the development of the Company's compact triple quad MS (a more powerful detector) which the Company has previously developed to a proof of concept stage. This could involve a joint venture arrangement and target potential applications in markets such as point of care diagnostics, environmental testing, and bioprocessing.

Strategic Focus

Key End Markets

Microsaic is targeting two broad market sectors for its MS technology: life sciences, including bioprocessing in the discovery, development and manufacture of biologic drugs; and the traditional markets in chemical analysis. The Directors believe that the Company's products offer significant competitive opportunities by providing easy to use MS analysis at the point of need.

Evolution of Microsaic's MS applications for traditional markets in chemical analysis

Microsaic's technology value proposition offers the opportunity for customers in traditional markets for chemical analysis to increase productivity. For example, the integration of the newly signed Axcend nano-LC with Microsaic's low-flow rate MS utilises substantially less solvents than the traditional LC and MS systems, which can, therefore, result in lower running costs and solvent disposal. Using Microsaic's technology at-line in reaction monitoring can provide immediate results, rather than there being a substantial time lag whilst samples are sent to a centralised laboratory for testing. The Board believes that the value of this is increasingly recognised, as evidenced by the Company's progress in signing new partners.

Evolution of Microsaic's MS applications for Healthcare and Life Sciences

The Directors believe that the total market for upstream bioprocessing equipment in the pharmaceutical industry is currently in the region of $15Bn, with a target market for analytical instrumentation of circa $390m split between a range of off-line, laboratory, reagent based and simple optical techniques (TDA Consultants 2019). Biologic manufacture demands real-time analysis throughout the entire process from the raw materials and growth media, the upstream 'in-cell' drug production and through to product purification. Microsaic has data to demonstrate the potential for ProteinID to replace several techniques with a single, easy-to-use package.

Microsaic's technology is potentially a powerful point of use analysis tool within complex biologic scale-up and manufacturing equipment workflows. An ideal workflow requires real-time data to drive production optimisation, ensure process-control compliance and reduce risk for the final product. The Company's technology lends itself to a range of biologic applications, including the production of large protein antibodies, peptides and cell therapy products, using emerging production processes.

Data has been generated by the Company to show that ProteinID can be used in the analysis of biologics to measure feedstocks, metabolites and final product simultaneously. The Directors believe that the product has the potential to significantly improve efficiency, quality and process control compared with traditional detection methods. Existing methods typically involve sending samples to a separate laboratory, possibly off site, to be analysed by specialists, and then waiting for several days or even weeks for results, before knowing whether the batch meets the required quality standards.

The Company's continued investment in state-of-the-art product design for point of need MS detection is aimed at ensuring current and future compliance with customer expectations in a wide range of bioprocessing applications.

Business Model

Building long-term co-development partnerships establishes greater competitive advantage

Microsaic's core strengths are its understanding of MS applications, technical and product development capabilities and its experience in working with OEM partners to co-develop integrated separation and detection systems.

The Company derives revenues from the sale of products, consumables, spare parts, and service and support income.

The Company's commercial strategy is to partner with OEMs and distributors which have established sales and service channels. This reduces the Company's requirement for sales personnel and leverages the existing relationships of our partners. In addition, the Company has commenced direct sales in Europe, where it is able to provide a seamless and more efficient customer service while benefitting from more favourable pricing and increased margin retentions. The direct sales approach is complementary to the Company's OEM and distributor sales, helping to ensure closer relationships with end-users, and a better understanding of their future product needs.

The Company's commercial approach is highly adaptable to suit each partner's needs, helping to craft each OEM's application in the early stages of scientific proof of principle, or into a broader product concept. Microsaic also brings expertise from its leading scientists, technologists, and engineers to meet the OEMs' near term and longer-term challenges. The Board believes that building partnerships over the long-term will establish greater competitive advantage for the Company, as its products are tailored to specific application needs.

Performance Measurement

The ongoing performance of the Company is managed and monitored using several key financial and non-financial performance indicators as detailed below:

Revenue	Year to 31 December 2019	Year to 31 December 2018	Inc/(Dec)
	£	£	%
Products	698,423	467,372	49.4
Consumables and spare parts	132,962	102,090	30.2
Service and support income	40,740	8,796	363.2
Total	872,125	578,258	50.8

The Company's revenues comprise sale of products, consumables and spare parts, and service and support income. The Board is encouraged by the sales performance in 2019, which follows a refocussing of resources to include increased marketing and business development activity.

The Company's trading results and cash are monitored on a monthly basis and for the full year were as follows:

Profit/(Loss) & Cash Metrics	Year to 31 December 2019	Year to 31 December 2018	Inc/(Dec)
	£	£	%
Loss from operations before share-based payments, interest & tax	(3,054,588)	(2,985,363)	2.3
Net cash used in operating and investing activities	(2,681,913)	(2,831,270)	(5.3)
Cash and cash equivalents	2,620,758	5,402,221	(51.5)

The Company's profitability is monitored against budget and forecast on a monthly basis. The 2.3% increase in the loss from operations in the year is in line with management's expectations following targeted investment in business development and R&D (which is all expensed as incurred). The Company monitors its cash position monthly and forecasts are updated on a regular basis. The year-end cash position was in line with the Board's expectations.

Non-financial key performance indicators measure a number of key areas, including commercial and operational targets, such as number of sales orders, unit production, agreements signed with new customers and quality measures from the Company's ISO 9001:2015 system. Another key non-financial indicator is feedback from customers. This information is used to optimise the Company's products, its applications and training programmes.

Financial Results

Profit and Loss

Total revenue at £872,125 increased by 50.8% compared with last year (2018: £578,258). Over the last year product revenue increased by 49.4%, consumables and spare parts by 30.2% and service and support income by 363.2%.

Gross profit for 2019 of £338,243 (2018: £241,573) is 40% up on last year's figure. The gross margin percentage of 38.8% is marginally lower than last year (2018: 41.8%) which, as anticipated, is partly due to the outsourcing of manufacturing during the year. Margins improved in H2 to 42.9% from 31.9% in H1. The Directors believe that margins will improve as volumes scale up.

Other operating income was nil in the year (2018: £76,262). Last year's income represented co-development income.

Total operating expenses at £3,392,831 (2018: £3,303,198), increased by 2.7% (£89,633) with R&D expenses increasing by 20% (see page 17). The main movements in the year included: payroll up £136,277 to £1,810,461; recruitment up £21,609 to £39,739, travel up £38,009 to £198,133, marketing and patents up £39,489 to £245,528, building and office down £126,367 to £465,169; and professional fees down £19,333, to £210,434. The outsourcing of production enabled the Company to terminate the lease on part of its premises in Woking, saving lease repayments and operating expenses of approximately £46,000 on an annualised basis. In addition, the Company took the opportunity to execute a lease break clause in November 2018 and moved the demonstration and R&D centre to more cost effective premises saving lease repayments and operating expenses of approximately £38,000 on an annualised basis.

The loss for the year, before share-based payments, interest and tax, increased by 2.3% to £3,054,588 (2018: £2,985,363).

Share based payments at £69,012 are £19,175 lower than last year. The lower charge was due to the smaller number of options granted in 2019 compared with 2018 (5m versus 9m), a shorter vesting period in 2019, and completion of the share-based payment charge in September for options granted in 2016.

Finance cost of £15,615 in 2019 relates to the interest charge imputed on the lease liability as per IFRS 16 which became effective on 1 January 2019.

Finance income increased by 14.9% to £35,686 (2018: £31,046).

The R&D tax credit for the year of £322,442 (2018: £278,543) is 15.8% higher than last year and reflects the additional investment made in R&D during the year.

The total comprehensive loss for the year is £2,781,087 and in line with 2018 (2018: £2,763,961). The basic loss per share fell by 28.2% from 0.85p last year to 0.61p per share in 2019 mainly as a result of the increase in the weighted average number of shares in issue.

Balance Sheet

Total non-current assets at £379,854 are £159,755 above 2018. The increase is due to the recognition of right of use lease assets of £157,916 under IFRS 16.

Current assets are £3,775,395 down £2,737,212 on last year (2018: £6,512,607). The reduction is mainly down to the lower cash balance (£2,781,463) off-set by a higher corporation tax receivable (£45,366).

Total assets at £4,155,249 are £2,577,457 below last year (2018: £6,732,706), mainly due to the lower cash balance at year end off-set by the right of use lease assets (£157,956).

Total equity at £3,563,397 is £2,712,075 below last year due to an increase in retained losses off-set by an increase in the share-based payment reserve of £66,733.

Trade and other payables at £290,563 are in line with last year (2018: £286,531).

Total non-current liabilities at £301,289 are £130,586 above last year. The increase is due to a lease liability of £164,541 being recognised following the introduction of IFRS 16, off-set by lower provisions of £33,955.

Total liabilities of £591,852 are £134,618 above last year due to the increase in non-current liabilities.

Cash Flow

Net cash used in operating activities of £2,565,092 which is £150,584 lower than in 2018. This was mainly the result of movements in working capital of £132,232 and higher tax credit receipts of £30,130.

Net cash used in investing activities amounted to £116,821 is in line with last year. Purchases of property, plant and equipment increased by £28,695 off-set by higher interest received (£6,993) and lower intangible asset purchases (£20,475).

Net cash from financing activities amounted to £99,550 and relates to payments for lease commitments in the year.

The cash and cash equivalents balance at the end of the year is £2,620,758, which is £2,781,463 below last year. At year-end, £1,524,181 of the balance was held on 95-day deposit terms with two well-rated financial institutions earning 1% to 1.1% annual interest.

Going Concern

The Directors have prepared and reviewed cash flow forecasts which indicate that the Company has sufficient cash to cover its anticipated working capital requirements to the end of 2020.

The Board believes that the opportunities available to the Company offer the potential for significant growth in the future and, therefore, intends to seek, in the coming months, an equity fundraise, which the Directors believe would qualify for EIS and VCT reliefs for eligible investors. The Board is in dialogue with its brokers to prepare for such a fundraise.

Given recent historic and further planned progress in diversifying the Company's product range, addressable opportunities and routes to market, the Board believes that there is a positive investment case for Microsaic. In light of this, the Board has a reasonable expectation that the Company will be able to raise funds within an appropriate timeline, although there can be no certainty of this.

On this basis, the Directors have concluded that it is appropriate to prepare the financial statements on a going concern basis.

The Board's assessment of the going concern basis is explained in more detail in note 3.

Risk Management

The Company manages risk from an operational perspective, where it assesses and weighs up the potential risks to the business and how it can mitigate these risks. The Board has reviewed the risks and uncertainties facing the Company and has identified the following risks and associated mitigating actions as follows:

Description	**Risk**	**Risk rating pre-mitigation**	**Mitigating action**	**Risk rating post-mitigation**
Unable to raise additional funds if required in the future	Inability to continue as a going concern	HIGH	Communicate effectively with shareholders and potential investors. Ensure the business plan is effectively implemented, the number and effectiveness of OEM and distribution channels increases, revenues continue to grow and that the business has realistic prospects of becoming profitable. Where required, take mitigating action and explore potential fundraising options in good time.	MEDIUM

Description	Risk	Risk rating pre-mitigation	Mitigating action	Risk rating post-mitigation
Unable to grow sales significantly in line with the Board's plans	Sales growth is too slow to achieve breakeven	MEDIUM	Continue to invest in business development and indirect and direct sales. Develop and launch new higher margin and integrated products, introduce service revenue streams, sign additional partners, support existing partners, and effectively promote the Company's products and capabilities.	MEDIUM/ LOW
Loss of competitive advantage in miniaturised mass spectrometry	Competitors developing competing products in bioprocessing	MEDIUM	The Company continues to innovate, invest in IP and focus on its core strengths around point of care, ease of use and simplicity of maintenance. The Company believes the market is large enough for competitors to co-exist, and that the number and scale of market niches relevant to its technology value propositions are growing.	MEDIUM/ LOW
Delay in developing and commercialising ProteinID for the bioprocessing market	Delays in signing up OEM bioprocessing partners	MEDIUM	Ensure adequate validation of ProteinID by working with collaborators such as MIT and CPI. Determine USPs and initial viable products and approach potential OEM partners to integrate with and commercialise the opportunity; explore various approaches to commercialisation in the short, medium and long term, including further product enhancements in light of customer feedback.	MEDIUM/ LOW

Description	Risk	Risk rating pre-mitigation	Mitigating action	Risk rating post-mitigation
Retention and recruitment of key R&D employees	Loss of key employees and subsequent difficulty in recruiting suitably qualified and skilled replacements	LOW/MEDIUM	Ensure the Company's remuneration package is competitive and aligned to performance. Retain key staff by investing in their development.	LOW
Loss of a major customer	Customer terminates relationship with Company	MEDIUM/LOW	In this situation there would be a short-term impact on the business. The Company will continue to develop and improve the functionality of its products and broaden the customer base so that it is not too dependent on any one customer.	LOW
Reliance on third party manufacturing facilities	A replacement manufacturer is necessary	MEDIUM	Work closely with our key manufacturing partner and hold regular review meetings. Ensure contingency plans are prepared and reviewed, and capable of prompt implementation.	LOW
Covid-19 virus has material impact on sales to China, SE Asia and other affected markets	Lower or no demand from affected markets and less opportunity to visit potential customers and partners around the world	MEDIUM	Continue to follow government advice to protect employees from risk. Continue dialogue with existing and potential partners via remote communications to retain relationships even where travel is not possible. Support OEMs and distributors with resuming normal activities as soon as possible once the epidemic has passed.	MEDIUM/LOW

From the above analysis there are 3 key risks facing the business.

The first key risk is the inability to continue as a going concern. The Board's assessment of the going concern basis is summarised above and explained in more detail in note 3.

The second key risk relates to failing to grow sales at the rate required to achieve sustainable profitability. To mitigate this, the Company is investing in business development and continues to sign up partners in traditional markets, is launching new products in 2020, is extending its channel to direct sales in Europe, and is enhancing its revenue model with service contracts. Additionally, the Company is aiming to sign OEM partners in bioprocessing in 2020; the Board believes that the work being done with the CPI outlined above will significantly help in this process.

The third key risk is the loss of competitive advantage. The traditional "small molecule" market has many large competitors, although niches in mobile detection (e.g. environmental enforcement), and at-line/on-line reaction monitoring, where the Company has unique capabilities, are showing promise. The Board believes that the Company has an opportunity to develop a first-mover position in bioprocessing and that the progress made in the last two years is very encouraging. Microsaic announced in December 2019 that it is partnering with the CPI and will use its UK biotherapeutics facility to demonstrate the potential use of Microsaic's MS instruments in bioprocessing. Starting in January 2020, the project will take approximately 12 months and is expected to deliver an on-line, and real-time method for bioreactor analysis and control. Importantly, the Company is not aware of any other technology which can simultaneously measure small and large molecules in-situ, enabling real-time bioreactor control within a closed loop system. Initial findings have demonstrated that cost of poor quality (i.e. batch failures) may be reduced, saving the end user circa £0.5m on a 10L batch-run; and that typical running costs compared with other current techniques may be reduced by at least 10-fold.

It is difficult to say at this stage the extent to which the Covid-19 virus will impact the Company's performance in 2020. The Company is taking precautions to ensure the safety of its employees and is following Government guidelines on travel abroad. Where holidays have been extended and travel curtailed, in China, SE Asia and other affected markets it has not been possible for commercial activities to continue in a normal manner. In addition, partner training scheduled in Taiwan in February has been postponed. The Board is monitoring the situation closely. The Board believes that normal commercial activities will resume in affected areas quickly once the restrictions are lifted.

The Board has reviewed the potential impact of Brexit on the Company and its operations. The Withdrawal Agreement came into force at the end of January 2020. There is a transition period until the end of 2020 while the EU and UK negotiate new trade arrangements. Provided the outcome allows continuing trade between the UK and EU without significant new barriers, the Board does not anticipate there will be a material impact on the Company's operations or financial performance after the end of the transition period. There may be extra costs in the form of tariffs (both from importing certain components and exporting) and increased administration around shipping documentation, which the business may have to absorb. The Board is keeping this matter under review and will update shareholders in due course once the future trading relationship between the UK and EU is clarified.

Company and Product Overview

Microsaic's product value proposition is designed to meet specific needs in its target markets, namely Healthcare and Life Sciences, and traditional chemical analysis.

The Company's products are designed to deliver application versatility, ease of deployment and use and, to satisfy the ever-growing need for industry to know more, faster and more cost effectively.

Microsaic has successfully developed and implemented advanced technology at the core of its design with over 60 patents to date, with the most recent encompassing a fast and easy to use software application for "red-light/green-light" protein identification during bio-molecular production.

The 4500 MiD® detector has been designed to be robust and has a mass range suitable for the detection of larger molecules, such as proteins. Key features of the 4500 MiD® detector include:

- Fast install, low maintenance, and ease of use for non-specialist users;
- Best in class for power and utility requirements;
- Fits inside a standard fume hood, and has no need for an external pump;
- Integrated PC, remote operation, and intuitive to use;
- User serviceable consumable parts; and
- Open software for easy integration into laboratory systems.

In January 2019, the Company announced the introduction of its new protein identification product, ProteinID. This is a mass identification technique that allows users to detect and verify target proteins and smaller molecules simultaneously throughout the bioprocessing value chain. By providing deterministic characterisation for proteins and small molecules at the point of need, ProteinID offers fast results over a mass range of 50 to 3,200 m/z. To gain market acceptance of this ground-breaking technology, the Company is working through a process of product validation, using its partners. The Board believes that ProteinID has the potential to be transformational for process analytics, as its abilities as a point of need technology are derived from simple and quick maintenance, which allows for minimal down-time and greater confidence in results.

To further expand the marketplace for the MiD®, the MiDas™ compact interface module offers automated liquid handling for direct MS analysis in real time at the laboratory bench or in the fume hood. In addition, from 2020, the Company plans to introduce a cost-effective approach to traditional liquid separation, and the Directors believe, a potentially game-changing approach to protein separation with both systems being integrated into Microsaic's compact MS detector.

Product specifications are driven by end-user requirements. These inform Microsaic's product strategy as its MS detectors move from the laboratory into at-line and in-line production, and front-line operating environments. Microsaic will ensure that its strategic product development remains focused on meeting demanding bioprocessing applications. However, many of these enhancements are expected to also provide a pipeline of competitive features able to address a wider range of small molecule application areas.

The Company has an on-going R&D programme building on the achievements already made and focused on increasing the reach of its core technology, which underpins the MiD®.

In addition, the Company has invented and filed a patent on novel technology for sampling liquids for analysis by a MS. Although this development is very early stage, the Directors believe it could have the potential to revolutionise the approach to analysing liquids.

Longer-term, the Board believes that increasing trends towards personalised medicine present very significant opportunities, such as cell therapy and point of care diagnostics, where rapid and accurate point of need bio-molecular detection will be essential to determining the right treatment for patients. These are major challenges for healthcare, and, although they are not part of the short-term development plans, the Board believes that the Company's technology has the potential to offer important solutions. This could involve resuming the development of the compact triple quad, previously developed to a proof of concept stage, with potential applications in point of care diagnostics, environmental testing, and bioprocessing.

Outlook

Good progress has continued to be made with signing new partners. The first part of the year has, however, had a slow start for orders and sales as commercial activities have been impacted, especially in China, SE Asia and other markets affected by the macroeconomic and local impact of the Covid-19 virus. Nonetheless, the Board believes that there will be further revenue growth in these territories in 2020, provided normal commercial activities resume fairly soon. The Company's broader international sales growth is expected to come from three main sources:

(i) Growth from existing and new OEM and distribution partners across multiple application areas and geographies;

(ii) Extending the Company's product offering with the launch of a range of new complete system products. These products will be integrated with Microsaic's current offering and are aimed at providing a cost-effective approach to traditional liquid separation and protein separation; and

(iii) Direct sales to key targets in Europe which will benefit from the expanded product portfolio plus the provision of product servicing and maintenance contracts to drive after sales revenues.

The Board also expects further progress in bioprocessing from its collaboration with the CPI and MIT to deliver a concept for "on-line MS" bioprocessing, having been validated by a range of end-user applications.

Given the progress to date, and the planned expansion of the product portfolio, the Board remains confident in the longer-term prospects for the business. In light of this, the Board is considering the financing options available to the Company to ensure it is sufficiently capitalised for the opportunities ahead.

The Strategic Report was approved by the Board of Directors on 6 March 2020 and signed on its behalf by:

Glenn Tracey
Chief Executive Officer

DIRECTORS' REPORT
For the year ended 31 December 2019

The Directors present their report for the year ended 31 December 2019.

Principal activity, business review and business risks
The principal activity of the Company continued to be the research, development and commercialisation of miniaturised mass spectrometry instruments. A review of the business, its prospects and its research and development activities are contained within the Strategic Report.

Results and dividends
The results for the Company are given in the statement of comprehensive income set out on page 41. The Company is currently making losses and has retained losses which have to be recovered before it can pay a dividend. Therefore, the Directors do not recommend the payment of a dividend (2018: nil).

Business Development & Sales
During the year five staff contributed to business development and sales. The majority of revenues are made through the OEM and distribution sales channels and 12 partners are now in place. In 2019 the Company commenced a focussed direct sales approach in Europe and recruited one person with another person to be recruited in H1 2020. The direct sales approach will benefit from the launch in 2020 of new products for traditional liquid separation and protein separation, and will ensure closer relationships with end-users, and a better understanding of their future product needs.

Research and development ("R&D")
R&D is important for the Company's future success and has led to the filing of over 60 patents. One new patent application was filed in 2019. During the year approximately 12 staff worked on R&D and R&D expenses totalled £1,052,592 (2018: £874,186) or 31.0% (2018: 26.5%) of total operating expenses. Materials, staff costs and subcontractors are all above 2018. Subject to resources being available, current plans are to continue to invest in R&D, especially to support the enhancement of technology for the important bioprocessing market.

Directors
Since 1 January 2019 the following Directors have held office:
Peter Grant, Non-Executive Chairman (Age 64)
Glenn Tracey, Chief Executive Officer (Age 48)
Bevan Metcalf, Finance Director and Company Secretary (Age 62)[1]
Chris Buckley, Non-Executive Director (Age 58)
Andrew Holmes, Non-Executive Director & Company Secretary (Age 55)[1]
Eric Yeatman, Non-Executive Director (Age 57)
[1]Andrew Holmes resigned 14 May 2019 and Bevan Metcalf became Company Secretary on that date.

Directors' interests
The Directors' interests in the shares of the Company at 31 December 2019 are:

	Ordinary shares of 0.25p each at 31 December 2019		Ordinary shares of 0.25p each at 31 December 2018	
	Number	%	Number	%
Peter Grant	750,000	0.16	750,000	0.16
Glenn Tracey	800,000	0.18	800,000	0.18
Bevan Metcalf	1,050,000	0.23	1,050,000	0.23
Chris Buckley	550,000	0.12	550,000	0.12
Eric Yeatman	4,646,632	1.02	4,646,632	1.02
	7,796,632	1.71	7,796,632	1.71

Significant shareholdings

Shareholders, excluding Directors, having a beneficial interest of 3% or more of the Company's shares as at 31 December 2019:

	Ordinary shares of 0.25p each at 31 December 2019	
Shareholder	Number	%
Parkwalk Advisors Funds	124,154,838	27.21
Unicorn Asset Management	75,000,000	16.43
Octopus Investments	43,104,281	9.45
Herald Investment Management	34,199,625	7.49
Interactive Investor Trading	27,903,212	6.11
Walker Crips Group	26,875,000	5.89
Hargreaves Lansdown PLC	19,906,923	4.36

Employees

The Board regards the expertise and contributions of its employees as critical to its future success. Executive management regularly update employees on the progress of the business. The Board seeks to remunerate its employees fairly and has adopted a flexible working hours policy to cater for employee needs. Full and fair consideration is given to applications for employment received regardless of age, gender, colour, ethnicity, disability, nationality, religious beliefs or sexual orientation.

The Board takes account of employees' interests when making decisions, and employees are encouraged to give suggestions for improving the Company's performance.

Company share ownership plans

The Company operates two Employee Share Option Schemes ("ESOS"), an approved scheme and an unapproved scheme, for the benefit of its employees and Executive Directors.

The ESOS were formed to enable the incentivisation of employees to be aligned to the performance of the Company. Under the ESOS the Company grants employees options to acquire the Company's ordinary shares subject to:

- Vesting periods (normally three years for new grants) and a total exercise period of ten years from the date of grant;
- The exercise price normally being the market price of the ordinary shares at the close of business the day before the date of grant; and
- Performance conditions, as appropriate.

Options are granted up to the maximum amount allowed under the limits of the Enterprise Management Incentive ("EMI") Scheme - these options are called 'Approved Options'. The EMI Scheme is subject to the provisions of Schedule 5 of the Income Tax (Earnings and Pensions) Act 2003 and have tax advantages for the employee and employer. There is an unapproved scheme, which has no tax advantages, for those awards which do not qualify under the Approved Option scheme.

The Company received approval at its 2011 AGM to issue equity securities to employees and Directors on conversion of their options up to a maximum of 10% of the Company's issued share capital over a rolling ten-year period. At 31 December 2019 456,365,146 shares were in issue, and so the maximum option pool is 45,636,515. Outstanding options at 31 December 2019 are 18,644,000. Since the Company was listed on

AIM in 2011 1,534,100 shares have been issued in respect of exercised options. Thus, the remaining option pool at 31 December 2019 is 25,458,415 representing 5.6% of the shares in issue.

On 12 June 2019, the Company awarded options over 5m ordinary shares of 0.25 pence each in the Company.

Management of risk
The management of operational risk is covered in the Strategic Report while financial risk is detail under note 27 financial instruments.

Health and safety and the environment
The Company is committed to providing a safe environment for its staff and other parties for whom it has a responsibility. It has set up systems and processes to ensure compliance with health and safety legislation and the Board reviews an update on health and safety matters at each Board meeting.

The Company is also mindful of its corporate responsibilities concerning the impact of its activities on the environment and seeks to minimise this impact where practicable.

Quality management system
The Company's mission is to supply, design and deliver mass spectrometry instruments that provide innovative compact detection with high quality and reliability.

The Company's quality policy applies to the development, marketing and support of our products. In all its activities the Company is strongly focused on commitment to the requirements of its customers including:

- Management of risks to prevent operational and product problems that may adversely impact customer satisfaction and the interests of other parties.
- Management of any externally provided products and services to ensure that they meet specified requirements including changing needs.

To help management achieve its policy, the business management system has been developed using a process approach including a Plan-Do-Check cycle, risk-based thinking, and a fundamental commitment to the continual improvement of the system and its effectiveness and integration into the Company's activities.

The Company's Quality Management System is based on ISO 9001:2015. This standard puts considerable emphasis on risk management and management involvement within the quality management system.

Directors' indemnity and insurance
The Company has granted an indemnity to its Directors and Officers under which the Company indemnifies them, subject to the terms of the deed of indemnity, against all costs, charges, losses, damages and liabilities incurred by them in the performance of their duties. The Company also maintains insurance for its Directors and Officers against the consequences of actions brought against them in relation to their duties for the Company.

Related party transactions
The interests of the Directors are shown in the Directors' Report while their remuneration is detailed in the Directors' Remuneration Report. There were no other related party transactions involving the Directors. Refer to note 28 for further details.

Directors' responsibilities
The Directors are responsible for preparing the Annual Report and Accounts in accordance with applicable law and regulations.

Company law requires the Directors to prepare financial statements for each financial year. Under that law the Directors have prepared the Company financial statements in accordance with International Financial Reporting Standards ("IFRSs"), as adopted by the European Union and applicable law. Under company law 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 Company and the profit or loss of the Company for that period.

In preparing the 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; and
- State whether IFRSs as adopted by the European Union have been followed, subject to any material departures disclosed and explained in the financial statements.

The Directors are responsible for keeping adequate accounting records that are sufficient to show and explain the Company's transactions and disclose with reasonable accuracy at any time the financial position of the Company and enable them to ensure that the financial statements comply with the Companies Act 2006. They are responsible for safeguarding the assets of the Company 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 corporate and financial information included on the Company's website. Legislation in the United Kingdom governing the preparation and dissemination of financial statements may differ from legislation in other jurisdictions.

Statement of disclosure to auditors
So far as each Director is aware, there is no relevant audit information of which the Company's auditors are unaware. Additionally, the Directors have taken all the steps that they should have taken to make themselves aware of any relevant audit information and to establish that the Company's auditors are aware of that information.

Auditors
Saffery Champness LLP has expressed its willingness to remain in office as auditors of the Company, and a resolution for its re-appointment will be proposed at the forthcoming Annual General Meeting.

Future developments
An indication of likely future developments in the business of the Company is included in the Strategic Report.

This Directors' Report was approved by the Board of Directors on 6 March 2020 and signed on its behalf:

Glenn Tracey
Chief Executive Officer
Company number 03568010

DIRECTORS' REMUNERATION REPORT
For the year ended 31 December 2019

This report sets out the Company's policy on the remuneration of Executive and Non-Executive Directors, together with details of Directors' remuneration packages and service contracts.

Remuneration policy
The remuneration policy for Executive Directors, determination of their individual remuneration packages and their performance appraisals have been delegated to the Board's Remuneration Committee. The members of the Remuneration Committee are Chris Buckley, Peter Grant and Eric Yeatman. Eric Yeatman is the Chair of the Committee.

Remuneration of the Executive Directors
In setting the remuneration for the Executive Directors, the Remuneration Committee considers several factors including:

- Basic salaries and benefits available to Executive Directors of comparable companies;
- Need to pay Executive Directors a competitive salary in line with the nature and complexity of their work;
- Need to attract and retain Executive Directors of an appropriate calibre;
- Need to ensure Executive Directors' commitment to the continued success of the Company by means of incentive schemes; and
- Need for the remuneration awarded to reflect performance.

The remuneration of the Executive Directors consists of basic salary, share options, life assurance and a contributory personal pension up to 7.5% of basic salary. A discretionary bonus scheme based on performance against individual and business objectives is operated by the Company. The Executive Directors were awarded a 3% salary increase effective 1 January 2019. No bonus was awarded to Executive Directors in respect of 2019 (2018: nil)

Remuneration of the Non-Executive Chairman and Non-Executive Directors
The Chairman of the Remuneration Committee discusses the remuneration of the Non-Executive Directors with the Executive Directors. The remuneration is then discussed and agreed by the Board (excluding Directors with a conflict of interest) following recommendation by the Remuneration Committee, having a view to rates paid in comparable organisations. The Non-Executive Directors do not receive any pension, bonus or other Company benefits. No share options have been issued to Non-Executive Directors during the year.

Share options
It is normal practice for the Remuneration Committee to award share options to Executive Directors on an annual basis. An award of 5m options was made to Executive Directors on 12 June 2019. The Remuneration Committee will consider a further award to Executive Directors during the course of 2020.

Directors' notice periods
Details of the Director's notice periods as per their service contract are as follows:

	Contract date	Term	Notice period
Peter Grant	01-Jan-18	Indefinite	3 months
Glenn Tracey	01-Dec-15	Indefinite	6 months
Bevan Metcalf	18-Dec-15	Indefinite	3 months
Chris Buckley	01-Apr-16	Indefinite	3 months
Eric Yeatman	01-Apr-06	Indefinite	3 months

Directors' emoluments

Directors remuneration in 2019 is detailed below: Non-cash payments represent life assurance premiums.

	Salaries & fees	Non cash payments	Pension contributions	Share-based payments	Year to 31 December 2019	Year to 31 December 2018
	£	£	£	£	£	£
Peter Grant	45,000	-	-	25,701	70,701	78,560
Glenn Tracey	133,800	441	9,450	10,742	154,433	157,815
Bevan Metcalf	98,168	962	18,110	10,632	127,872	130,229
Chris Buckley	24,998	-	-	-	24,998	22,502
Andrew Holmes[1]	12,051	-	-	-	12,051	22,500
Eric Yeatman	28,000	-	-	-	28,000	24,000
TOTAL	342,017	1,403	27,560	47,075	418,055	435,606

[1]Resigned, 14 May 2019

Directors' share options

Share options over the Company's ordinary shares held by the Directors at the year end were as follows:

	At 1 January 2019	Granted in the year	Lapsed in the year	Exercised in the year	At 31 December 2019	Exercise price	Exercise period
	Number	Number	Number	Number	Number	Pence	
Peter Grant	3,500,000	-	-	-	3,500,000	4.05p	2 January 2018 – 2 January 2028
Glenn Tracey	100,000	-	-	-	100,000	47.75p	17 April 2015 - 17 April 2025
	200,000	-	-	-	200,000	23.5p	13 January 2016 - 13 January 2026
	1,000,000	-	-	-	1,000,000	5p	14 September 2016 - 14 September 2026
	1,000,000	-	-	-	1,000,000	4.05p	2 January 2018 – 2 January 2028
	-	2,500,000	-	-	2,500,000	1.55p	12 June 2019 - 12 June 2029
Bevan Metcalf	120,000	-	-	-	120,000	23.5p	13 January 2016 - 13 January 2026
	1,000,000	-	-	-	1,000,000	5p	14 September 2016 - 14 September 2026
	1,000,000	-	-	-	1,000,000	4.05p	2 January 2018 – 2 January 2028
	-	2,500,000	-	-	2,500,000	1.55p	12 June 2019 - 12 June 2029
Chris Buckley	75,000	-	-	-	75,000	23.5p	13 January 2016 - 13 January 2026
	7,995,000	5,000,000	-	-	12,995,000		

5m options were awarded to Directors in June 2019 as detailed in the table above at an exercise price of 1.55p. These share options are subject to a three-year service condition plus performance conditions. The share price at the start of 2019 was 0.9p and at the end of 2019 was 1.15p, with a high and low over the year of 1.95p and 0.80p respectively.

The share-based payment charge for the Directors during the year was £47,075 (2018: £58,019).

The Directors' Remuneration Report was approved by the Board of Directors on 6 March 2020 and signed on its behalf by:

Eric Yeatman
Chairman of the Remuneration Committee

DIRECTORS' FINANCE & AUDIT COMMITTEE REPORT
For the year ended 31 December 2019

Introduction
This report details how the Finance & Audit Committee ("the Committee") has met its responsibilities under its terms of reference. The Committee is a sub-committee of the Board. As Non-Executive Directors, the members of the Committee are, together with the Board as a whole, responsible for the integrity and probity of the Company. The work of the Committee is aimed at supporting the creation of long-term value for shareholders.

The Committee continues to act as an oversight sub-committee of the Board, considering and challenging but not itself performing the relevant processes. The ultimate responsibility for reviewing and approving the Annual Report and Accounts and interim financial statements remains with the Board.

The Committee does not believe there is a requirement for an internal audit function at the present time due to the Company's size and level of complexity.

Role and Responsibilities
The Board has established a Finance & Audit Committee to monitor the integrity of the Company's financial statements and the effectiveness of the Company's internal financial controls. The Committee's role and responsibilities are set out in the terms of reference which are available from the Company's website (http://www.microsaic.com/investors/governance-new/ - refer to Principle 9). The terms of reference are reviewed annually and amended where appropriate. During the year the Committee worked with management, the external auditors, and other members of the senior management team in fulfilling these responsibilities.

The Committee report deals with the key areas in which it plays an active role and has responsibility. These areas are as follows:

i. Financial reporting and related primary areas of judgement;
ii. The external audit process;
iii. Risk management and internal controls; and
iv. Whistleblowing procedures.

The members of the Finance & Audit Committee are Chris Buckley, Eric Yeatman and Peter Grant. Peter Grant is Chair of the Committee, is a Chartered Accountant and has appropriate relevant financial experience. The Board considers that the Committee has an appropriate and experienced blend of commercial, financial and industry expertise to enable it to fulfil its duties.

Annual Report and Accounts
The Chair of the Committee participated in the Audit Planning meeting held in December 2019 with the external auditors to plan the financial audit, discuss the key audit matter(s) and review the Audit Strategy Document. The Committee was satisfied with the Audit Strategy Document. The key audit matter for 2019 is consideration and disclosure around going concern.

The Board as a whole, reviewed the going concern paper prepared by management including detailed financial forecasts for the period 2020 to 2022, related assumptions/goals, risks and opportunities, sensitivities, and areas for mitigation. The Board also considered potential additional sensitivities, the potential effects of external factors, such as the Covid-19 virus, and mitigating actions which could be implemented if growth were to be materially less than anticipated. The outcome of the Board's discussions is explained in more detail in note 3.

The Committee has satisfied itself that the 2019 Annual Report and Accounts has been prepared in accordance with International Financial Reporting Standards ("IFRSs") as adopted by the European Union, are fair, balanced and provide the information necessary for shareholders to assess the Company's performance, business model and strategy.

Internal Control Systems

Another key responsibility of the Committee is to review the Company's internal control systems, including internal financial controls. In accordance with instructions from the Committee the Finance Director updated the Company's Financial Procedures Manual at the start of 2019.

In last year's Finance and Audit Report it was noted that an internal review with our external accountants of travel expenses and wider PAYE compliance for Non-Executive Directors was underway and that the Company was waiting for a response from HMRC on several matters. The response from HMRC was received in 2019 as follows:

(i) They concurred that travel by Non-Executive Directors to board and finance and audit committee meetings was business travel and not subject to PAYE;

(ii) They agreed that relief under Section 690 ITEPA 2003 can be provided for payments to an overseas resident Non-Executive Director, however, they advised that the Company needs to apply for a Section 690 direction from HMRC which the Company has done; and

(iii) They accepted the Company's disclosure on historical benefits in kind under a Contract Settlement, amounting to £1,442, which covers Directors and staff, which the Company has subsequently paid.

The Company's auditors are encouraged to raise comments on internal control in their management letter following the annual audit. The points raised and actions arising are monitored through to completion by the Finance & Audit Committee.

Risk Management

The main risks facing the business are highlighted in the Strategic Report and Directors' Report.

Committee Meetings

The Committee met three times in the year to 31 December 2019. Two meetings related to the 2018 Annual Report and Accounts, one of which was attended by the external auditors. The other meeting was to review and sign off the 2019 Interim Financial Statements which involved the full Board.

Auditors Fees and Non-Audit Services

The Committee reviewed the estimated audit fee proposed by the Auditors for 2019 of £19,950 (2018: £19,450). The Committee agreed to the inflationary increase in the fee of 2.6% increase over 2018.

Other advisory fees incurred during the year amounted to £2,820 (2018: £3,310). A breakdown is detailed below:

1. Review of 2019 interims (£1,650);
2. Review of IFRS 16 methodology and calculations (£675); and
3. Advice on UK grant applications (£495).

In addition to the above, the charge for tax services relating to the 2018 Accounts was £5,575. An amount of £7,500 has been accrued in 2019 Accounts for the provision of this service.

Auditor Independence
The Committee satisfied itself on the auditors' independence. Mr Roger Weston is undertaking his second audit of the Company, in the capacity of partner in charge.

Whistleblowing
The Committee had no whistleblowing incidents reported during 2019. Mr Eric Yeatman was appointed Primary Designated Officer during the year and Chris Buckley as Alternative Designated Officer.

The Report of the Finance & Audit Committee was approved by the Board of Directors on 6 March 2020 and signed on its behalf by:

Peter Grant
Chairman of the Finance & Audit Committee

CORPORATE GOVERNANCE REPORT
For the year ended 31 December 2019

Chairman's Corporate Governance Statement (extract)
The full corporate governance statement is published and maintained up to date on the Company's website at (http://www.microsaic.com/investors/governance-new). This extract from that statement is included in the Annual Report & Accounts as required by the Quoted Companies Alliance's ("QCA") Corporate Governance Code for small and mid-size quoted companies (the "Code").

The Board is committed to maintaining high standards of corporate governance and, with effect from 26 September 2018, the Board adopted the Code.

The Code was revised in April 2018 to meet the new requirements of AIM Rule 26 and sets out ten broad principles of corporate governance. It states what are considered to be appropriate corporate governance arrangements for growing companies and requires companies to provide an explanation about how they are meeting the principles through certain prescribed disclosures.

The Chairman leads the Board and is responsible for its overall effectiveness in directing the Company. He manages the Board agenda and ensures that all Directors receive accurate, timely and clear information and effectively contribute their various talents and experience in the development and implementation of the Company's strategy. He ensures that the nature and extent of the significant risks which the Company is willing to embrace in the implementation of its strategy are challenged and determined by the Board. The Chairman is responsible for ensuring that the Board implements, maintains and communicates effective corporate governance processes and for promoting a culture of openness and debate designed to foster a positive governance culture throughout the Company.

The Board has considered how each principle is applied and provides below an explanation of the approach taken in relation to each principle and how they support the Company's medium to long-term success.

The Board has a Rolling Board Agenda to ensure that all matters which the Board should consider each year are addressed. This allows for presentations from senior management so that the Board benefits from wider input than the Executive Directors.

The Company includes a Finance & Audit Committee Report in its Annual Report and Accounts.

The Board carries out a formal review of its effectiveness in January, which is reported on below under Principle 7.

The Board considers that it does not depart from any of the principles of the Code.

PRINCIPLES TO DELIVER GROWTH

PRINCIPLE 1: Establish a strategy and business model which promote long-term value for shareholders.

Strategy:
Microsaic's strategic aim is to capitalise on its strengths in point of need MS detection, and access high-growth and emerging Life Science applications, as well as niches in traditional small molecule markets. The Company intends to achieve its strategy with a business model built on customer focus and technology innovation.

Business Model:
The Company's business model is described on page 8 of the Strategic Report.

Challenges:

Staying relevant to future customer needs
Customer needs evolve rapidly. Future product specifications will be driven by end-user requirements. This will inform Microsaic's product strategy as its MS detectors move from the customer's laboratory into production, and front-line operating environments. Microsaic will ensure that its strategic product development will remain focused on meeting demanding in bioprocessing applications.

Remaining innovative in an advancing technological landscape
Microsaic has successfully developed and implemented advanced technology at the core of its design with over 60 patents to date. This has led to a solid foundation serving scientists in the laboratory in small molecule drug discovery, and increasingly in support of its endeavours in life science markets.

The Company continues to invest in several product development projects with its core MiD® MS detector platform, which the Board believes will be attractive to the growing market for laboratory-based applications with larger biological molecules, such as peptides and small proteins.

The Company has extended its product capabilities further into Life Science applications, such as bioprocessing, potentially significantly reducing the cost of analysis and the cost of poor quality.

PRINCIPLE 2: Seek to understand and meet shareholder needs and expectations. See the website for further disclosures concerning how the Company seeks to engage with shareholders and how successful this has been.

PRINCIPLE 3: Take into account wider stakeholder and social responsibilities and their implications for long-term success. See the website for further disclosures.

PRINCIPLE 4: Embed effective risk management, considering both opportunities and threats, throughout the organisation.

The Board aims to ensure that the Company's risk management framework identifies and addresses all relevant risks in order to execute and deliver the strategy.

The Directors recognise their responsibility for the Company's systems of internal control and have established systems to ensure that an appropriate and reasonable level of oversight and control is provided. The Company's systems of internal control are designed to help the Company meet its business objectives by appropriately managing, rather than eliminating, the risks to those objectives. The controls can only provide reasonable, not absolute, assurance against material misstatement or loss.

The Company's Management Team, which reports into the Executive, meets with the Executive at least quarterly to review commercial, technical, operational and financial risks facing the business. These risks are assessed according to their nature and magnitude based on the seriousness of the risk and the likelihood of the risk occurring. The effectiveness of the controls implemented to minimise the risks are also reviewed. The aim of these reviews is to provide reasonable assurance that material risks are identified, and appropriate action is taken at an early stage. From this review the Company maintains its internal risk register which on an annual basis is reviewed and updated by the Finance & Audit Committee and the Board. New material risks which arise in the meantime, such as the potential effect of Brexit and the impact of the Covid-19 virus, are added to the risk register and discussed at Board level as they arise.

The Company operates a product development process called "PACE" (Product and Cycle Time Excellence) as a key part of its evaluation and monitoring of R&D projects. PACE identifies the risks facing each of the Company's projects and how to mitigate each risk.

The annual budget is reviewed and approved by the Board. Financial results, with comparisons to budget, and latest forecasts are reported on a monthly basis to the Board together with a report on operational achievements, objectives and issues encountered. Significant variances from plan are discussed at Board meetings and actions set in place to address them.

Measures continue to be taken to review and improve internal controls and risk management procedures. The Company has a Financial Procedures Manual which includes approval levels for authorisation of expenditure, potential fraud scenarios, payment approval process, expenses guidelines etc. This is updated and approved on an annual basis.

The Company's auditors are encouraged to raise comments on internal control in their management letter following the annual audit. The points raised and actions arising are monitored through to completion by the Finance & Audit Committee.

PRINCIPLES TO MAINTAIN A DYNAMIC MANAGEMENT FRAMEWORK

PRINCIPLE 5: Maintain the Board as a well-functioning, balanced team led by the Chair.

The Board currently consists of two Executive and three Non-Executive Directors. In 2019 the Board of Directors held 12 meetings including nine face to face and three by conference call.

The Company has an equal opportunity policy to recruitment at Board level and within the Company at large and seeks diversity as opportunities arise, within the framework of selecting the most suitable person, based on relevant skills, abilities, experience and location, as required for the role.

The principal role of the Chairman of the Board is to manage and provide leadership to the Board of Directors of the Company. The Chairman is accountable to the Board and acts as a direct liaison between the Board and the management of the Company, through the Chief Executive Officer. The Chairman acts as the communicator for Board decisions where appropriate.

The Chairman is independent from management and free from any business or other relationship which could interfere with his independent judgment.

The Chairman is responsible for the effective leadership, operation and governance of the Board and its Committees. He ensures that all Directors contribute effectively to the development and implementation of the Company's strategy, while ensuring that the nature and extent of the significant risks the Company is willing to embrace in the implementation of its strategy are determined and challenged.

The Chief Executive Officer is responsible for the management of the Company, providing executive leadership and for implementing the Company's strategy.

The Chairman was considered independent upon his appointment in January 2018. The Board believes that the advice, behaviour and character of its other Non-Executive Directors (Messrs Yeatman and Buckley) is independent and always in the best interests of the Company and its shareholders. In addition, the skills and business judgement which they possess and regularly exercise contributes to the efficient and effective running of the Company. The Company's Senior Independent Director is Mr Eric Yeatman.

The Company appreciates that circumstances which might or might appear to affect a Director's judgement may well include financial dependence on the Company and whether the Director is, or represents, a major shareholder. None of the Non-Executive Directors or the Non-Executive Chairman are financially dependent on the Company as they all have other sources of income. In addition, none of the Non-Executive Directors has a significant shareholding defined as greater than 3% in the Company or represents a significant shareholder.

Under the QCA Guidelines the independence of the Chairman and Non-Executive Directors could be challenged under the following areas, but in all cases the Board believes that the Non-Executive Directors always act in an independent manner:

Name and position	Potential issue	Why independence is not compromised
Peter Grant Non-Executive Chairman	Holds 3.5m share options in the Company. This was a one-off award when Mr Grant joined the Company in January 2018 and is subject to objective performance conditions which are aligned with the Executive Directors. Chairs the Finance & Audit Committee.	This was a one-off award granted, following consultation with a major shareholder, and was required to attract a Chairman of the appropriate calibre to the Company. The performance conditions are objective, based on tangible progress by the Company, and the vesting of options will be managed by the Non-Executive Directors without input from the Chairman as regards his options. Peter is Chair of the Finance & Audit Committee in view of his qualification as a Chartered Accountant (FCA) and has relevant experience as a Finance Director and as Audit Committee Chairman on various listed companies.
Chris Buckley Non-Executive Director	Briefly held the position of VP Marketing prior to becoming a Non-Executive Director. Holds 75k options in the Company. These were awarded prior to Mr Buckley taking up his role as Non-Executive Director.	Chris's short tenure as VP Marketing (on a consultancy basis) has not compromised his effective independence as a Non-Executive Director. The number and potential value of options is relatively small in relation to Chris' full time income, and were awarded in the context of work prior to being a Non-Executive Director.
Eric Yeatman Non-Executive Director	Has previously held the position of Chief Executive Officer on an interim basis. As a founder, has been on the Board for over nine years.	Eric stepped into the role of Chief Executive Officer on an interim basis when a vacancy arose; but notwithstanding this, at all times acts as an independent Non-Executive Director. As a Professor at Imperial College London, Eric brings technical knowledge to the Board which is useful for a small technology business.

The Board has an established Finance & Audit Committee and Remuneration Committee. The Company believes it is currently too small to have a separate Nominations Committee, so this role is taken on by the Board of Directors as a whole.

Details and links to the terms of reference of the Finance & Audit Committee and Remuneration Committee are set out under Principle 9 below.

Details of Directors and their time commitment is set out under Principle 6 below.

The number of Board and Committee meetings and attendance records of Directors is set out under Principle 9 below.

PRINCIPLE 6: Ensure that between them the Directors have the necessary up-to-date experience, skills and capabilities.

Biographical details of the Board of Directors, their skills, suitability and availability are set out below.

Peter Grant, Independent Chairman
Term of office: Appointed Non-Executive Chairman on 1 January 2018. Peter's most recent re-election as Director was on 4 May 2018 at the Company's AGM, when he retired per Article 81.1 (a) of the Articles of Association.

Peter chairs the Finance & Audit Committee and is a member of the Remuneration Committee of the Company.

Background and suitability for the role: Peter Grant had an executive career spanning 40 years, nearly half at listed company board level spanning the healthcare, electronics, software and engineering industries. His executive career included CEO of Skyepharma PLC, CFO of Skyepharma PLC, Group Finance Director at Eurodis Electron PLC, CFO at WorldPay Group plc, Group Chief Executive at Molins PLC and Finance Director at Molins PLC. Prior to this he held a variety of senior commercial, financial and general management roles in the General Electric Company PLC group of companies. He holds an MA in Mathematics from the University of Oxford and is a Chartered Accountant. He brings a combination of listed company and financial expertise, experience of developing, manufacturing and distributing electronic and software products and experience of the healthcare sector.

Current external appointments: Peter is Chairman and Chair of the Audit and Nomination Committees and member of the Remuneration Committee of LiDCO Group plc, and a Non-Executive Director of Labatec Pharma SA, a private Swiss company. Peter estimates that his current appointments, including that with the Company, comprise about eight days a month, and he considers that he would have the time to be able to step up the commitment to the Company should temporary circumstances require him to do so. Peter keeps his skills up to date by regularly reading various publications on changes in regulations and the business environment affecting companies, especially in the healthcare sector.

Glenn Tracey, Chief Executive Officer
Term of office: Joined March 2015 as Chief Operating Officer. Appointed to the Board in December 2015 and appointed as Chief Executive Officer in September 2017. Glenn's most recent re-election as Director was on 14 May 2019 at the Company's AGM, when he retired per Article 81.1 (b) of the Articles of Association.

Background and suitability for the role: Glenn has 25 years' experience leading operations, marketing and research and development for small and large companies in sensing and detection instrumentation, across applications in human and environmental health. Glenn specialises in scaling new technology into emerging markets, especially transitioning contemporary high-end detection laboratory technologies to point of need or field-based sensing across several markets such as food, air, water and pharmaceuticals.

Glenn is a Member of the Royal Society of Chemistry ("MRSC") and holds a BSc in Applied Chemistry from Salford University, and an MBA from the Open University.

Glenn has no external appointments.

Bevan Metcalf, Part-time Finance Director and Company Secretary
Term of office: Appointed to the role of Part-time Finance Director on 18 December 2015 and Company Secretary on 16 May 2019. Bevan Metcalf is employed for 13 days per month. Any additional days are paid on an agreed day rate on a quarterly basis. Bevan Metcalf has the flexibility to increase his time during busy periods as Microsaic is his only role. Bevan's most recent re-appointment as a Director of the Company was on 4 May 2018, at the Company's AGM, when he retired per Article 81.1 (c) of the Articles of Association.

Background and suitability for the role: Bevan has a Business Management Degree from the University of Waikato, Hamilton, New Zealand where he majored in Accounting. He is also an ACA Member of the Chartered Accountants of Australia and New Zealand.

Bevan has 40 years' of financial management experience with international companies primarily in the mining and pharmaceuticals sectors, including Beowulf Mining, Afferro Mining, Orion Corporation, GlaxoSmithKline, and ICI. In the past 16 years he has been involved with companies listed on the AIM market of the London Stock Exchange as Finance Director, Company Secretary, Chief Financial Officer and in a Non-Executive capacity. He therefore understands the Governance and MAR regulations impacting the Company.

Bevan's 20 years' experience in the pharmaceutical industry is very relevant to the strategy of the Company which is targeting the pharmaceutical industry for its miniaturised mass spectrometers.

Bevan keeps his accounting skills up to date through his membership of the Chartered Accountants of Australia and New Zealand where he accesses their library of resources and receives journals and other reading materials on a regular basis.

Bevan has no external appointments.

Professor Eric Yeatman, Non-Executive Director
Term of office: Director since the foundation of the Company in 2001. Non-Executive Director during this period except:

- Chairman: 2004 - December 2011;
- Interim Chief Executive Officer: December 2011 - November 2012;
- Chairman: November 2012 - June 2013; and
- Interim Chairman: February 2017 - December 2017.

Eric is also Chairman of the Remuneration Committee since 1 January 2018 and has previously chaired the Finance & Audit Committee. His most recent re-election as Director was on 14 May 2019 at the Company's AGM, when he retired per Article 81.1 (b) of the Articles of Association.

Background and suitability for the role: Eric Yeatman has been an active researcher in micro-technology, on which the Company's unique products are based, since 1986. He obtained his PhD in 1989 and has since been a member of academic staff of Imperial College London, one of the world's top 20 universities, becoming full Professor in 2005. He has published over 200 papers in related fields, with over 9,000 citations, and is inventor or co-inventor on 10 patents. As a co-founder, he is intimately familiar with the evolution of the Company and its technology. He has served on the advisory boards of two venture capital funds and one high technology company. He is a Fellow of the Royal Academy of Engineering, and was awarded its Silver Medal in 2011, given "*to recognise an outstanding and demonstrated personal contribution to British engineering*".

Current external appointments: Prof. Yeatman is Head of the Department of Electrical and Electronic Engineering of Imperial College London. Prof. Yeatman is also a NED of Imperial Consultants. He is a member of the Enterprise Committee of the Royal Academy of Engineering. He serves on a number of advisory committees and boards of international technical conferences and journals. These other commitments do not prevent him spending whatever time is needed to fully exercise his duties and responsibilities as a Non-Executive Director of the Company, and none creates a conflict of interest with, or imposes a relevant restriction on, his duties to the Company.

Chris Buckley, Non-Executive Director
Term of office: Appointed Director in April 2016. Chris is also a member of the Finance & Audit Committee and the Remuneration Committee. Chris' most recent re-election as Director was on 14 May 2019 at the Company's AGM, when he retired per Article 81.1 (b) of the Articles of Association.

Background and suitability for the role: Chris Buckley has 35 years of experience in the global healthcare industry, spanning international marketing and general management assignments. He has a proven track record of translating scientific innovations into competitive customer-focussed benefits. Chris holds a degree in pharmacology and biology from the University of Aston, UK.

Chris spent 27 years of his career with Novartis, predominantly in the Consumer Healthcare and Pharma divisions, where he progressed through a variety of local, regional and global roles. He brings to Microsaic, a wealth of strategic management experience, coupled with the pragmatic and commercial expertise to effectively grow brands.

Current external appointments: Chris has no other appointments.

Chris's experience in the pharmaceutical and in-vitro diagnostics industries is very relevant to Microsaic's strategy, since the Company is targeting the pharmaceutical industry for its miniaturised mass spectrometers.

Chris a Fellow of the Chartered Institute of Marketing ("FCIM"), where he has access to a marketing resource library and marketing training programmes.

The Company from time to time uses external advisers.
During 2019, The Board has retained the following advisers:

- PhilipHare and Associates for advice on the handling of Venture Capital Trusts ("VCT") and Enterprise Investment Schemes ("EIS");
- N+1 Singer is Broker, NOMAD and corporate financial adviser on an ongoing basis;
- Dorsey & Whitney (Europe) LLP for general legal advice; and
- Menzies LLP for ongoing advice on, VAT and PAYE.

PRINCIPLE 7: Evaluate Board performance based on clear and relevant objectives, seeking continuous improvement.

Board Evaluation Process
The Board believes that, in addition to dealing with any matters as they arise, it is appropriate to carry out a formal evaluation of the performance of the Board each year. This is intended to ensure that the Board remains effective, well-informed and able to make high quality and timely decisions for the benefit of all stakeholders in the Company.

The evaluation involves each Director completing an evaluation questionnaire which covers effectiveness from multiple angles including: Board structure and committees; Board arrangements, frequency and time; content of Board meetings; Board culture; Board evaluation and succession; and individual contributions. The completed questionnaires are anonymised and collated independently into a summary, and comments and any areas of concern are highlighted for discussion with the Board.

The latest evaluation was carried out in January 2020. Generally, the evaluation confirmed that the Board was effective, the culture is constructive and arrangements for Board meetings were good. The evaluation process was felt to be useful and effective.

The evaluation carried out in January 2019 identified a number of areas for further consideration. These were dealt with as set out in the 2018 Annual Report and Accounts, except that:

- The Board did not succeed in identifying a NED with complementary skills, especially good contacts/knowledge of the Company's target markets. Board members will continue to look out for a suitable candidate for such a role.
- A more formal process for evaluating risks was not introduced in 2019, although the Board did spend time reviewing the key risks affecting the business, including new risks associated with Brexit and the Covid-19 virus. The Board plans to introduce a more formal process for evaluating risks in 2020.

The evaluation carried out in January 2020 did not identify any new material matters.

Succession Planning
As is common with many small AIM listed companies, the Company does not have internal candidates to succeed existing Executive Directors. This will be kept under review, especially when recruiting for senior roles as vacancies arise. However, the Board does not believe it is appropriate to recruit additional Directors or senior personnel solely for the purpose of Board succession planning.

Training of Directors
It is recognised that there continues to be more regulation of which Directors need to be aware. The Board will continue to ensure that Directors receive appropriate support to keep up to date. The Chief Executive Officer has completed an Institute of Directors course in Company Direction. Also, the Chief Executive Officer undertook one to one executive coaching and as part of that coaching anonymised feedback was taken from key stakeholders, which in turn was discussed with the Chief Executive Officer.

PRINCIPLE 8: Promote a culture that is based on ethical values and behaviours.

The Company is committed to achieving the highest possible ethical standards in conducting its business. The Company expects all employees and Directors to maintain the same high standards. To achieve these ends, Microsaic encourages freedom of expression and speech whilst not accepting prejudice of any kind.

Ethics is based on a set of principles and clear moral and ethical values. The Company takes its principles and values very seriously and expects staff at all levels to look to these principles and values for guidance.

Principles:
The Board has adopted the following four principles:

1. Management must lead by example. Good ethics should be most noticeable at the top. Every employee must be accountable to the same rules.
2. Corporate values must be implemented throughout the Company. Every forum and medium should be used to spread the message and, most of all, the Company must practice what it preaches.

3. Meetings with staff (both one on one and group) to discuss the values and what they mean to each employee must be undertaken when implementing a value system. This will help to get everyone in the Company on the same page and committed.
4. The values of the Company must endure changes in leadership. The longer ethical values last, the more ingrained they will become.

Values

The Company conducts its business around seven core values:

1. *Integrity – applying high ethical standards and being honest.* The Company will conduct its business with honesty to all stakeholders and will uphold high moral principles.
2. *Mutual respect, empathy and trust in dealing with others*. An environment of mutual respect, empathy and trust is necessary if a Company is to promote integrity. Trust in the workplace is critical to organisational success. You cannot optimize results by yourself; you need others' support and assistance. Trust is something that must be gained over time. We are not "entitled" to others' trust; we have to earn it. Respect is a term that defines the feeling of holding a company or person in high esteem.
3. *Innovation – a passion to experiment and deliver new solutions*. A focus on research and development is extremely important to the future success of the Company. The Company is looking to introduce new technologies, products, processes or upgrades that are designed to achieve both product differentiation and lower costs while at the same time delivering innovative solutions to meet customer needs.
4. *Teamwork – drives high performance.* As a small Company, Microsaic relies heavily on teamwork. No one person is bigger than the Company. A team approach is more efficient, faster, benefits from multi-skills especially in problem solving, increases learning opportunities and encourages a sense of belonging, which often translates to a greater sense of ownership and accountability for the work. The teams' communication principles are to listen effectively and deliver; open, clear, complete, consistent and timely communication.
5. *Quality – we take pride in everything we do*. The Company is strongly focused on quality from the products it produces to the processes it operates. The Company has recently transitioned to ISO 9001:2015. Focussing on the quality of our people, products and services will ultimately create a quality image for the Company.
6. *Customer focus – go the extra mile for our customers.* The Company assigns highest priority to customer satisfaction. We listen to our customers' needs and create solutions for unmet customer needs.
7. *Shareholder value – striving to deliver value to shareholders*. The key objective of the Company is achieving sustainable profitability. Every employee should understand how he or she fits into the profitability picture. Everyone's common goal should be to build a strong, profitable Company that will endure and provide reasonable returns to shareholders.

PRINCIPLE 9: Maintain governance structures and processes that are fit for purpose and support good decision-making by the Board. See the website for further disclosures.

In 2019 the Board of Directors held 12 regular meetings including nine face to face and three conference calls. The agenda for Board meetings is prepared by the Executive Directors (following an established framework) and agreed with the Chairman.

The attendance of the Directors at the regular Board Meetings and Committee Meetings during the year ended 31 December 2019 were as follows:

Name	Position	Regular Board Meetings	Finance & Audit Committee	Remuneration Committee
Peter Grant	Non-Executive Chairman	12 (12)	3 (3)	3 (3)
Glenn Tracey	Chief Executive Officer	12 (12)	n/a	n/a
Bevan Metcalf	Finance Director	12 (12)	n/a	n/a
Chris Buckley	Non-Executive Director	12 (12)	3 (3)	3 (3)
Andrew Holmes[1]	Non-Executive Director	5 (5)	1 (1)	2 (2)
Eric Yeatman	Non-Executive Director	12 (12)	3 (3)	3 (3)

1. Andrew Holmes stepped down as a Director at the AGM on 14 May 2019

Numbers in brackets denote the total number of meetings that each Director was eligible to attend during the year.

PRINCIPLE 10: Communicate how the Company is governed and is performing by maintaining a dialogue with shareholders and other relevant stakeholders.

The following committee reports are included in these Annual Report & Accounts as shown below. They include details of the work of those committees:

- The Directors' Remuneration Committee Report - pages 21 to 23; and
- The Directors' Finance & Audit Committee Report - pages 24 to 26.

The Corporate Governance Report was approved by the Board of Directors on 6 March 2020 and signed on its behalf by:

Peter Grant
Non-Executive Chairman

INDEPENDENT AUDITORS' REPORT TO THE MEMBERS OF MICROSAIC SYSTEMS PLC
For the year ended 31 December 2019

Opinion

We have audited the financial statements of Microsaic Systems Plc for the year ended 31 December 2019 which comprise the Statement of Comprehensive Income, the Statement of Financial Position, the Statement of Changes in Equity, the Statement of Cash flows and notes to the financial statements, including a summary of significant accounting policies. The financial reporting framework that has been applied in their preparation is applicable law and International Financial Reporting Standards ("IFRSs") as adopted by the European Union.

In our opinion, the financial statements:

- Give a true and fair view of the state of the Company's affairs as at 31 December 2019 and its loss for the period then ended;
- Have been properly prepared in accordance with IFRSs as adopted by the European Union; and
- Have been prepared in accordance with the requirements of the Companies Act 2006.

Basis for opinion

We conducted our audit in accordance with International Standards on Auditing (UK) (ISAs (UK)) and applicable law. Our responsibilities under those standards are further described in the Auditor's responsibilities for the audit of the financial statements section of our report. We are independent of the Company in accordance with the ethical requirements that are relevant to our audit of the financial statements in the UK, including the FRC's Ethical Standard as applied to listed entities, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Material uncertainty related to going concern

We draw attention to note 3 in the financial statements, which indicates that the company's ability to continue as a going concern is dependent on seeking a fundraise to maintain liquidity.

The inherent uncertainty in the availability of external funding, along with other matters as set forth in note 3, indicate that a material uncertainty exists that may cast significant doubt on the Company's ability to continue as a going concern. Our opinion is not modified in respect of this matter.

The going concern assumption is a fundamental principle in the preparation of financial statements. The Company is reliant on achieving an equity fundraise to maintain sufficient working capital for the next twelve months. Should this not be achieved in a timely manner, the Directors would have to consider other actions for protecting the continuity of the business. Due to the inherent uncertainty of obtaining external funding, the going concern assumption has been recognised as a key audit matter.

Our audit procedures included the following:

- We have obtained and critically reviewed the Directors' going concern assessment, and management's strategic plans to reach profitability;
- We have reviewed projected cash flows in light of underlying assumptions and supporting evidence to assess the ability of the Company to continue in operation for 12 months from the date of approval of the financial statements;
- We have performed sensitivity analysis on the key assumptions underlying management's going concern assessment;
- We have made enquiries with appropriate third parties to assess the availability of funding sufficient to enable the Company to continue as a going concern for 12 months from the date of approval of the financial statements; and

- We have discussed post balance sheet events with the Directors to assess their impact on the going concern assumption.

Based on our procedures we have concluded that a material uncertainty exists in respect of the going concern assumption, and that this been appropriately disclosed and drawn to the members' attention.

Key audit matters

Key audit matters are those matters that, in our professional judgement, were of most significance in our 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), 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 were addressed in the context of our audit of the financial statement as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

Except for the matter described in the material uncertainty related to going concern section, we have determined that there are no other key audit matters to be communicated in our report.

Our application of materiality

We apply the concept of materiality in planning and performing our audit, in evaluating the effect of any identified misstatements and in forming our opinion. Our overall objective as auditor is to obtain reasonable assurance that the financial statements as a whole are free from material misstatement, whether due to fraud or error. We consider a misstatement to be material where it could reasonably be expected to influence the economic decisions of the users of the financial statements.

We have determined a materiality of £55,000 (2018: £55,000). This is based on 2% of the loss for the year ended 31 December 2019.

An overview of the scope of our audit

We tailored the scope of our audit to ensure that we obtained sufficient evidence to support our opinion on the financial statements as a whole, taking into account the Company's accounting processes and controls and the industry in which the Company operates.

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. 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.

Other information

The Directors are responsible for the other information. The other information comprises the information included in the annual report, other than the financial statements and our auditor's report thereon. Our opinion on the financial statements does not cover the other information and, except to the extent otherwise explicitly stated in our report, we do not express any form of assurance conclusion 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 such material inconsistencies or apparent material misstatements, we are required to determine whether there is a material misstatement in 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 in this regard.

Opinions on other matters prescribed by the Companies Act 2006
In our opinion, based on the work undertaken in the course of the audit:

- The information given in the Strategic Report and the Directors' Report for the financial year for which the financial statements are prepared is consistent with the financial statements; and
- The Strategic Report and the Directors' Report have been prepared in accordance with applicable legal requirements.

Matters on which we are required to report by exception
In the light of the knowledge and understanding of the Company and its environment obtained in the course of the audit, we have not identified material misstatements in the Strategic Report or the Directors' Report.

We have nothing to report in respect of the following matters in relation to which the Companies Act 2006 requires us to report to you if, in our opinion:

- Adequate accounting records have not been kept, or returns adequate for our audit have not been received from branches not visited by us; or
- The financial statements are not in agreement with the accounting records and returns; or
- Certain disclosures of Directors' remuneration specified by law are not made; or
- We have not received all the information and explanations we require for our audit.

Responsibilities of directors
As explained more fully in the Directors' Responsibilities Statement set out on pages 19 to 20, the Directors are responsible for the preparation of the financial statements and for being satisfied that they give a true and fair view, and for such internal control as the Directors 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 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 Company or to cease operations, or have no realistic alternative but to do so.

Auditor's 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 auditor's 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 Financial Reporting Council's website at: www.frc.org.uk/auditorsresponsibilities. This description forms part of our auditor's report.

Use of our report
This report is made solely to the Company's members, as a body, in accordance with Chapter 3 of Part 16 of the Companies Act 2006. Our audit work has been undertaken so that we might state to the Company's

members those matters we are required to state to them in an auditor's report and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the Company and the Company's members as a body, for our audit work, for this report, or for the opinions we have formed.

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Roger Weston (Senior Statutory Auditor)
for and on behalf of Saffery Champness LLP

Chartered Accountants
Statutory Auditors

71 Queen Victoria Street
London
EC4V 4BE

6 March 2020

STATEMENT OF COMPREHENSIVE INCOME
For the year ended 31 December 2019

	Notes	Year to 31 December 2019	Year to 31 December 2018
		£	£
Revenue	5	872,125	578,258
Cost of sales		(533,882)	(336,685)
Gross profit		338,243	241,573
Other operating income	6	-	76,262
Research and development expenses		(1,052,592)	(874,185)
Other operating expenses		(2,340,239)	(2,429,013)
Total operating expenses	7	(3,392,831)	(3,303,198)
Loss from operations before share-based payments		(3,054,588)	(2,985,363)
Share-based payments		(69,012)	(88,187)
Loss from operations after share-based payments		(3,123,600)	(3,073,550)
Financial cost	8	(15,615)	-
Finance income	8	35,686	31,046
Loss before tax		(3,103,529)	(3,042,504)
Tax on loss on ordinary activities	10	322,442	278,543
Total comprehensive loss for the year		(2,781,087)	(2,763,961)
Loss per share attributable to the equity holders of the Company			
Basic and diluted loss per ordinary share	11	(0.61)p	(0.85)p

The notes on pages 45 to 65 form part of these financial statements.

STATEMENT OF FINANCIAL POSITION
As at 31 December 2019

	Notes	31 December 2019	31 December 2018
		£	£
ASSETS			
Non-current assets			
Intangible assets	12	97,211	95,944
Property, plant and equipment	13	124,727	124,155
Right of use assets	9	157,916	-
Total non-current assets		379,854	220,099
Current assets			
Inventories	14	386,241	401,945
Trade and other receivables	15	445,954	431,365
Corporation tax receivable	10	322,442	277,076
Cash and cash equivalents		2,620,758	5,402,221
Total current assets		3,775,395	6,512,607
TOTAL ASSETS		4,155,249	6,732,706
EQUITY AND LIABILITIES			
Equity			
Share capital	19	1,140,913	1,140,913
Share premium	21	24,867,886	24,867,886
Share-based payment reserve		412,539	345,806
Retained losses		(22,857,941)	(20,079,133)
Total equity		3,563,397	6,275,472
Current liabilities			
Trade and other payables	16	290,563	286,531
Non-current liabilities			
Provisions	17	136,748	170,703
Lease liability	9	164,541	-
Total non-current liabilities		301,289	170,703
Total liabilities		591,852	457,234
TOTAL EQUITY AND LIABILITIES		4,155,249	6,732,706

The financial statements were approved for issue by the Board of Directors on 6 March 2020 and signed on its behalf by:

Glenn Tracey
Chief Executive Officer
Company number 03568010

The notes on pages 45 to 65 form part of these financial statements.

STATEMENT OF CHANGES IN EQUITY
For the year ended 31 December 2019

	Notes	Share capital	Share premium	Share -based payment reserve	Retained earnings	Total equity
		£	£	£	£	£
At 1 January 2018		453,413	20,504,071	273,380	(17,330,933)	3,899,931
Total comprehensive loss for the year		-	-	-	(2,763,961)	(2,763,961)
Transaction with owners:						
Shares issued		687,500	4,812,500	-	-	5,500,000
Share issue costs		-	(448,685)	-	-	(448,685)
Transfer in respect of lapsed share options		-	-	(15,761)	15,761	-
Share-based payments-share options		-	-	88,187	-	88,187
At 31 December 2018		1,140,913	24,867,886	345,806	(20,079,133)	6,275,472
Total comprehensive loss for the year		-	-	-	(2,781,087)	(2,781,087)
Transaction with owners:						
Shares issued		-	-	-	-	-
Share issue costs		-	-	-	-	-
Transfer in respect of lapsed share options		-	-	(2,279)	2,279	-
Share-based payments options		-	-	69,012	-	69,012
At 31 December 2019		1,140,913	24,867,886	412,539	(22,857,941)	3,563,397

The notes on pages 45 to 65 form part of these financial statements.

STATEMENT OF CASH FLOWS
For the year ended 31 December 2019

	Notes	Year to 31 December 2019	Year to 31 December 2018
		£	£
Total comprehensive loss for the year		(2,781,087)	(2,763,961)
Amortisation of intangible assets	12	40,740	32,510
Depreciation of right of use assets		90,560	-
Depreciation of property, plant and equipment	13	88,993	90,405
Transfer of property, plant and equipment to cost of goods	13	14,255	21,308
Decrease in provision for leasehold dilapidations	17	(21,138)	(3,280)
(Decrease)/Increase in provision for warranty	17	(12,817)	4,869
Decrease in provision for outsourced manufacturing		-	(15,000)
Provision for expected credit losses	15	4,306	-
Share-based payments	24	69,012	88,187
Decrease in inventory provision		(26,854)	(19,247)
Tax on loss on ordinary activities	10	(322,442)	(278,543)
Interest on lease liability	9	15,615	-
Interest received		(35,686)	(22,013)
Decrease in inventories		42,558	100,798
Increase in trade and other receivables		(12,215)	(196,365)
Increase/(Decrease) in trade and other payables		4,032	(2,290)
Cash used in operations		(2,842,168)	(2,962,622)
Corporation tax received		277,076	246,946
Net cash used in operating activities		(2,565,092)	(2,715,676)
Cash flows from investing activities			
Purchases of intangible assets	12	(42,007)	(62,482)
Purchases of property, plant and equipment	13	(103,820)	(75,125)
Interest received		29,006	22,013
Net cash used in investing activities		(116,821)	(115,594)
Cash flows from financing activities			
Proceeds from share issues		-	5,500,000
Share issue costs		-	(448,685)
Repayment of lease liabilities	9	(99,550)	-
Net cash used in/from financing activities		(99,550)	5,051,315
Net (decrease)/increase in cash and cash equivalents		(2,781,463)	2,220,045
Cash and cash equivalents at the beginning of the year		5,402,221	3,182,176
Cash and cash equivalents at the end of the year		2,620,758	5,402,221

The notes on pages 45 to 65 form part of these financial statements.

NOTES TO THE FINANCIAL STATEMENTS
For the year ended 31 December 2019

The principal activity of the Company continues to be the research, development and commercialisation of miniaturised mass spectrometry instruments that are designed to improve the efficiency of pharmaceutical R&D. The Company is incorporated in England and its registered address is GMS House, Boundary Road, Woking, Surrey, GU21 5BX. The Company has no subsidiaries so the financial information relates to the Company only.

1. Accounting policies

The following principal accounting policies have been used consistently in the preparation of these financial statements.

Basis of preparation
These financial statements have been prepared in accordance with International Financial Reporting Standards ("IFRS") and the interpretations of the International Financial Reporting Interpretations Committee ("IFRIC") as adopted by the European Union, and with those parts of the Companies Act 2006 applicable to companies reporting under IFRS.

These financial statements have been prepared under the historical cost basis except where financial instruments are required to be carried at fair value under IFRS.

Revenue recognition
IFRS 15 provides a single, principles based five-step model to be applied to all contracts with customers. The five-step framework includes:
1) Identify the contract(s) with a customer;
2) Identify the performance obligations in the contract;
3) Determine the transaction price;
4) Allocate the transaction price to the performance obligations in the contract; and
5) Recognise revenue when the entity satisfies a performance obligation.

The Company recognises revenue from the following three sources:
1) Sale of products;
2) Sale of consumables and spare parts; and
3) Service and support income.

Revenue is measured based on the consideration which the Company expects to be entitled in a contract with a customer and excludes amounts collected on behalf of third parties. The Company recognises revenue when it transfers control of a product or service to a customer.

Sale of products
The Company sells compact mass spectrometers (Microsaic 4500 MiD®) mainly through OEMs and Distributors. A small proportion of its sales are direct to the customer. Terms are Ex Works so control passes when the customer collects the goods. Payment terms are generally 30 days from the date of invoice. Discounts are offered and agreed as part of the contractual terms.

Sales of consumables and spare parts
The Company sells consumables and spare parts mainly through OEMs and Distributors. Terms are Ex Works so control passes when the customer collects the goods. Payment terms are generally 30 days from the date of invoice. Discounts are offered and agreed as part of the contractual terms.

Service and support income
Service and support to our OEMs and Distributors includes training their sales and service teams. It also includes servicing products from time to time. Terms are Ex Works so control passes when the customer receives the service. Payment terms are generally 30 days from the date of invoice. Discounts are offered and agreed as part of the contractual terms.

Generally, there is no obligation on the Company for returns, refunds or similar arrangements. Also, the Company does not manufacture specific items to a customer's specification and no financing component is included in the terms with customers.

The Company provides assurance warranties which are 15 months from the date of shipment for OEMs and Distributors. These warranties confirm that the product complies with agreed-upon specifications. The Company is looking to provide service warranties in the future to direct Europe customers, where the revenue from such warranties will be recognised over the period of the service agreement.

Revenue from co-development agreement(s) is recognised separately in the profit and loss under "Other Operating Income". There was no co-development income in 2019 (2018: £76,262).

Segmental reporting
The Company currently has one business segment, being the research, development and commercialisation of scientific instruments. This is undertaken wholly within the United Kingdom. Revenue by geographical market is analysed in note 5.

Intangible assets
Trademarks and patents are stated at historic cost of registration less accumulated amortisation and any accumulated impairment losses. Amortisation is charged to operating expenses and calculated to write off the cost in equal annual instalments over five years, which is considered to be a prudent estimate of their useful economic lives. Certain software is stated at historic cost less accumulated amortisation and any accumulated impairment losses. Amortisation is charged to operating expenses and calculated to write off the cost in equal annual instalments over three years, which is considered to be a prudent estimate of its useful economic life.

Property, plant and equipment
Items of property, plant and equipment are stated at cost of acquisition or production costs less accumulated depreciation and impairment losses. Depreciation is charged to the statement of comprehensive income on a straight-line basis to write-off the carrying value of each asset to residual value over its estimated useful economic life as follows:

Plant and equipment	- 33.3% on a straight line basis
Fixtures and fittings	- 33.3% on a straight line basis
Software	- 33.3% on a straight line basis

Pensions
The Company has an auto-enrolment pension scheme for employees. Contributions are charged to the statement of comprehensive income in the period they are payable.

Inventories
Inventories are stated at the lower of cost and net realisable value. Cost is based on the first-in first-out principle and includes expenditure incurred in acquiring the inventories and bringing them to their present location and condition. The cost of finished goods and work in progress comprises raw materials, direct labour and other direct costs. Net realisable value is the estimated selling price in the ordinary course of business less applicable selling expenses.

Provisions
Provisions are established where the Directors have identified an obligation which is probable and where the amount can be estimated reliably.

Taxation
Current taxes are based on the results of the Company and are calculated according to local tax rules using the tax rates that have been enacted by the balance sheet date.

The Company recognises research and development tax credits receivable in cash as a current asset under the heading corporation tax receivable. Any difference to amounts received are dealt with as adjustments to prior period tax.

Deferred tax is provided in full using the balance sheet liability method for all taxable temporary differences arising between the tax bases of assets and liabilities and their carrying values for financial reporting purposes. Deferred tax is measured using currently enacted or substantially enacted tax rates.

Deferred tax assets are recognised to the extent the temporary difference will reverse in the foreseeable future and that it is probable that future taxable profit will be available against which the asset can be utilised.

Foreign currency translation
Monetary assets and liabilities denominated in foreign currencies are translated into sterling at the rates of exchange ruling at the balance sheet date. Transactions in foreign currencies are recorded at the rate ruling at the date of transaction, or forward contract rate, if applicable. All differences are taken to the statement of comprehensive income.

Financial instruments
Financial assets and financial liabilities are recognised in the Company's statement of financial position when the Company becomes a party to the contractual provisions of the instrument. Examples of the Company's financial instruments include:

Cash and cash equivalents
The fair value of cash and cash equivalents is considered to be their carrying amount due to their short-term maturity.

Trade receivables
The Company's trade receivables do not carry a significant financing element as defined by IFRS 15. Therefore, trade receivables are recorded at transaction price (e.g., invoice amount excluding costs collected on behalf of third parties) and throughout the life of the receivable at an amount equal to lifetime expected credit losses ("ECL").

Financial liability and equity
Financial liabilities and equity instruments are classified according to the substance of the contractual arrangements entered into. An equity instrument is any contract that evidences a residual interest in the assets of the Company after deducting all its liabilities.

Bank borrowings
The Company had no bank borrowings at 31 December 2019 and 2018.

Trade payables
Trade payables are not interest bearing and are stated at their nominal value.

Equity instruments
Equity instruments issued by the Company are recorded at the value of the proceeds received net of direct issue costs including the fair value of any warrants issued in lieu of issue costs. The Company has no derivative financial assets or investments in equity instruments.

Under IFRS 9 impairment for receivables including trade receivables is assessed using an expected loss model. For trade receivables this focuses on the risk that, and an extent to which, a receivable will default. Accordingly, the Company calculates the allowance for credit losses by considering the cash shortfalls it would incur in various default scenarios and multiplying the shortfalls by the probability of each scenario occurring. The Company only has short-term receivables and has adopted a "simplified approach" in assessing impairment.

The Company has applied a simplified "provision matrix" for calculating expected losses as a practical expedient (e.g., for trade receivables), as the Directors believe that this is consistent with the general principles for measuring expected losses. The provision matrix is based on an entity's historical default rates over the expected life of the trade receivables and is adjusted for forward-looking estimates. The Company has no history of default and in agreeing default rates management has had to make certain assumptions.

In preparing the provision matrix the Company looks at the geographic base of its trade receivables and whether they are existing or new customers. Finally, management considered forward looking information that may affect the default rates applied in the matrix.

Leases
The Company has adopted IFRS 16, which became effective on 1 January 2019. For all leases, the Company recognises a right of use asset and corresponding lease liability on the balance sheet, which are depreciated and amortised respectively over the lease term. However, where leases are low value or of less than 12 months, the Company has taken advantage of the practical expedient allowing the expense to be recognised on a straight line basis over the lease term.

The Company has adopted the modified retrospective approach, recognising on 1 January 2019 assets and liabilities which were historically accounted for as operating leases. There has been no adjustment to retained earnings as a result of this transition. Cash flows are not impacted by the adoption of this accounting policy, but the Income Statement now reflects a depreciation charge on the right of use asset and interest expense on the lease liability rather than a single operating lease charge.

Research and development
Expenditure on research is recognised as an expense in the period in which it is incurred.

Development costs incurred on specific projects are capitalised when all the following conditions are satisfied:
- Completion of the intangible asset is technically feasible so that it will be available for use or sale;
- The Company intends to complete the intangible asset and use or sell it;
- The Company has the ability to use or sell the intangible asset;
- The intangible asset will generate probable future economic benefits. Among other things, this requires that there is a market for the output from the intangible asset or for the intangible asset itself, or, if it is to be used internally, the asset will be used in generating such benefits;
- There are adequate technical, financial and other resources to complete the development and to use or sell the intangible asset; and
- The expenditure attributable to the intangible asset during its development can be measured reliably.

Costs incurred which do not meet the above criteria are expensed as incurred. No development costs have been capitalised to date.

Share-based payments
In accordance with IFRS 2 "Share-based payments", the Company reflects the economic cost of awarding shares and share options to Directors, employees and advisors by recording an expense in the statement of comprehensive income equal to the fair value of the benefit awarded; fair value being determined by reference to option pricing models. The expense is recognised in the statement of comprehensive income over the vesting period of the award.

The fair value of warrants issued to advisors as remuneration for their services in a fundraising will be charged to share premium over the vesting period of the award.

2. Adoption of new and revised standards

During the financial year, the Company has adopted the following new IFRSs (including amendments thereto) and IFRIC interpretations, that became effective for the first time.

Standard	Effective date, annual period beginning on or after
IFRS 16 *Leases*	1 January 2019
IFRIC Interpretation 23 – *Uncertainty over Income Tax Treatments*	1 January 2019
Amendments to IFRS 9 – *Prepayment Features with Negative Compensation*	1 January 2019
Amendments to IAS 28 – *Long-term Interests in Associates and Joint Ventures*	1 January 2019
Annual improvements 2015-2017 cycle	1 January 2019
Amendments to IAS 19: *Plan amendment, Curtailment or Settlement*	1 January 2019

IFRS 16 specifies how the Company will recognise, measure, present and disclose leases. The standard provides a single lessee accounting model, requiring lessees to recognise assets and liabilities for all leases unless the lease term is 12 months or less or the underlying asset has a low value. From 1 January 2019 the Company recognised an asset reflecting the right of use leased asset for the Company's two property leases and an equipment lease, and a lease liability reflecting the obligation to make lease payments. Both the asset and the liability have been recognised on the balance sheet where previously they were off balance sheet. There was no impact on cash flow but there was an impact on the Income Statement as the operating lease payment was replaced with a depreciation charge on the leased asset and an interest expense on the lease liability. EBITDA also increased as both interest cost and depreciation charge are excluded from the calculation. Note 9 outlines the effect of IFRS 16 on the financial statements.

Standards issued but not yet effective
At the date of authorisation of these financial statements, the following standards and interpretations relevant to the Company and which have not been applied in these financial statements, were in issue but were not yet effective. In some cases, these standards and guidance have not been endorsed for use in the European Union.

Standard	Effective date, annual period beginning on or after
Conceptual Framework and Amendments to References to the Conceptual Framework in IFRS Standards	1 January 2020
Amendments to IFRS 3 *Business Combinations*	1 January 2020
Amendments to IAS 1 and IAS 8: *Definition of Material*	1 January 2020
Interest Rate Benchmark Reform: *amendments to IFRS 9, IAS 39 and IFRS 7*	1 January 2020
IFRS 17 - *Insurance Contracts*	1 January 2021

The Directors are evaluating the impact that these standards will have on the financial statements of Company, but at this stage the impact is not expected to be material.

3. Going concern

The Company concluded 2019 with £2.62m cash in the bank, broadly in line with the Board's expectations. In view of the growth opportunities available to the Company and progress being made, the Board is considering the financing options available to the Company to ensure it is sufficiently capitalised for the opportunities ahead.

The Company is currently loss making and, in common with other technology businesses in the earlier stages of development and commercialisation, Microsaic has raised funds in the past by issuing equity in discrete tranches.

The Directors have prepared and reviewed cash flow forecasts which indicate that the Company has sufficient cash to cover its anticipated working capital requirements to the end of 2020. The Directors have also considered potential sensitivities to the forecasts, including, but not limited to, the effect of the Covid-19 virus on activities in China, SE Asia and other affected markets, and have identified potential mitigating actions, such as deferring recruitment and reducing overheads, which could be implemented in a timely manner to conserve cash and retain a similar cash runway, if anticipated sales were to materialise at a substantially lower rate than in the Company's base forecasts.

The Board believes that the opportunities available to the Company offer the potential for significant growth in the future and, therefore, intends to seek, in the coming months, an equity fundraise, which the Directors believe would qualify for EIS and VCT reliefs for eligible investors. The Board is in dialogue with its brokers to prepare for such a fundraise. As well as providing funds to support the growth of the business, a fundraise would also strengthen the Company's balance sheet which will help in negotiations with new partners and customers.

Given recent historic and further planned progress in diversifying the Company's product range, addressable opportunities and routes the market, the Board believes that there is a positive investment case for Microsaic. In light of this, the Board has a reasonable expectation that the Company will be able to raise funds within an appropriate timeline, although there can be no certainty of this.

On this basis, the Directors have concluded that it is appropriate to prepare the financial statements on a going concern basis.

In view of the inherent uncertainties implicit in a future fundraise, there is a material uncertainty related to going concern. If a fundraise were not to be achieved, the Directors would have to consider other actions for protecting the continuity of the business. The financial statements do not include any adjustments that may be necessary should the Company be unable to realise its assets and discharge its liabilities in the normal course of business.

4. Critical accounting estimates and judgements

Accounting estimates and judgements are continually evaluated and are based on past experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances.

The Company makes estimates and assumptions concerning the future. The resulting accounting estimates could, by definition, differ from the actual outcome.

The estimates and assumptions that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year are summarised below:

Going concern
The financial statements have been prepared on a going concern basis, for the reasons set out in note 3 above. The Directors have prepared operating plans for the period 2020 to 2022 and the resulting estimates are based on certain key assumptions and sensitivities including on revenue, gross margin and operating expenses.

Amortisation of trademarks, patents and software
Capitalised costs relating to trademarks and patents are amortised over their estimated useful lives. As the product development programme is still ongoing and the lifetime of the Company's intellectual property is difficult to determine, the Directors have applied a prudent estimate of five years. In addition, intangible software costs have been amortised over an estimated useful life of three years. These assumptions are reviewed at each balance sheet date and amended if required.

Share-based payments
The calculation of the share-based payment expense utilises assumptions and estimates (for example volatility, future exercise rates) which may differ from actual results. Details of the assumptions are set out in note 25.

Provision for dilapidations
The Company occupies leasehold premises. The Directors have assessed the level of provision for dilapidations and made a provision accordingly.

Provision for inventories
The provision for inventories in 2019 of £39,954 (2018: £66,808) is to cover the write-off of a superseded product following the introduction of a new product together with spare and replacement parts that may also become obsolete. The actual outcome may differ from this estimate.

Provision for warranties
The Company provides OEMs and distributors with a 15-month warranty on mass spectrometry products. The provision is based on an estimate of historical costs including materials, replacement parts and the cost of service engineers that may have to be incurred over the warranty period.

Research and development tax credits
The Company recognises research and development tax credits receivable in cash as a current asset under the heading corporation tax receivable. These credits are subject to acceptance by HM Revenue & Customs and the resulting cash receipt may be greater or less than this amount.

Credit losses
Lifetime expected credit loss ("ECL") has been calculated using a simplified provision matrix (see Financial Instruments under Accounting Policies) where the Company has made assumptions on the default rates used in calculating the ECL of trade receivables. As the Company has not suffered any historical default on receivables management has used best estimates to arrive at the ECL at the year end, of £4,306.

Leases
Under IFRS 16 the Directors have had to make certain key judgments, consider certain exemptions and make policy choices as outlined below:

Judgement: Identifying a lease. The Company has used the leases identified under note 21 in the Accounts for the year ended 31 December 2018 in applying IFRS 16.

Judgement: Determining whether it is reasonably certain that an extension or termination option will be exercised. One of the Company's leased properties has termination options in the form of break clauses. In this case the Directors have assumed that the break clause will not be triggered during the lease term in arriving at the right of use asset amount.

Judgement: Identifying the appropriate rate to discount the lease payments. The incremental borrowing rate is the rate that a lessee would have to pay to borrow over a similar term and with a similar security, the funds necessary to obtain an asset of a similar value to the right-to-use asset in a similar economic environment. The Directors have had to consider certain factors in arriving at the incremental borrowing rate including its current financing structure, property yields, relevant lease terms etc.

Exemption: Exemptions may be taken for short-term leases (by class of asset) or low value asset leases. This exemption was taken for the Woking Unit 4 lease which was terminated on 31 March 2019.

Policy choice: Requirements of IFRS 16 can be applied to a portfolio of similar leases provided that such aggregation is not expected to have a material effect. The Directors chose to use a portfolio approach.

Policy choice: Lessee may but is not required to apply IFRS 16 to leases of intangible assets. The Directors did not apply IFRS 16 to intangible assets.

Policy choice: The transition choices are full retrospective approach or modified retrospective approach. The Directors applied the modified retrospective approach.

5. Revenue

Throughout 2019, the Company operated in one business segment, that of research, development and commercialisation of mass spectrometry instruments. The attribution of revenue is based on the country or group of countries to where the goods are shipped. Our largest customer represented 29% of total revenue in 2019 (2018: 51%) and our second largest 16% of total revenue (2018: 20%). In each case, these partners were selling on to multiple end customers.

The geographical analysis of revenue (by location of shipment) was as follows:

	Year to 31 December 2019	Year to 31 December 2018
	£	£
UK	28,798	28,805
Japan	53,662	3,500
USA	159,068	117,087
EU	448,923	229,708
China	139,562	154,344
Rest of World	42,112	44,814
Total	872,125	578,258

6. Other operating income

The Company's other operating income for the year ended 31 December 2019 is Nil (2018: £76,262).

7. Expenses by nature

	Year to 31 December 2019	Year to 31 December 2018
	£	£
Loss from operations is stated after charging/(crediting)		
Amortisation of intangible assets	40,740	32,510
Depreciation of right of use assets	90,560	-
Provision for expected credit losses	4,306	-
Movement in inventory provision	(26,854)	(19,247)
Inventory items expensed	(870)	25,962
Staff benefit expense	1,885,700	1,769,878
Depreciation of property, plant and equipment	88,993	90,405
Provision for dilapidations on leased buildings	(6,559)	8,918
Material costs including R&D	67,528	30,850
Professional fees (audit fees detailed below)	210,434	229,767
Pension costs	164,285	123,771
Exchange loss/(gain)	513	(1,917)
Directors' emoluments (before pensions and share based payments)	343,420	355,527

	Year to 31 December 2019	Year to 31 December 2018
	£	£
Services provided by the Company's auditors		
Fees payable to the Company's auditors for the audit of the financial statements	19,950	19,450
Fees payable to the Company's auditors for other services		
- Tax compliance	7,500	5,500
- Other	2,820	3,310
	30,270	28,260

8. Finance income and cost

	Year to 31 December 2019	Year to 31 December 2018
	£	£
Bank interest receivable	35,686	31,046
Interest cost under IFRS 16	(15,615)	-

9. Lease reporting

IFRS 16 was effective for annual reporting periods on or after 1 January 2019 and removes the distinction between finance and operating leases for lessees. For lessees, all leases are recorded on the balance sheet as liabilities, at the present value of the future lease payments, along with an asset reflecting the right of use of the asset over the lease term. This information aims to provide users of financial statements with the basis to assess the effect leases have on the financial position, financial performance and cash flows of an entity.

Microsaic had four leases at the 1 January 2019, three property leases and one equipment lease. One of the property leases was terminated at 31 March 2019 and was treated under transition exemptions and kept "off balance sheet". The rental expense relating to this lease of £8,100 was treated as a Profit & Loss expense in the period. The remaining two property leases end on 8 September 2021 and 31 October 2021. The lease terminating 31 October 2021 has two break clauses. The Company has assumed that these break clauses will not be triggered and has factored this in when determining the present value of the remaining lease term for this lease.

The Directors decided to use the modified retrospective approach for transition purposes. The key components of this approach are:

- Comparatives are not restated;
- Any difference between assets and liabilities are recognised in opening retained earnings (if applicable);
- The lease liability is calculated as the present value of the remaining lease payments, discounted at the incremental borrowing rate at the date of initial application; and
- A choice is made on how to measure assets on a lease by lease basis.

The right of use asset is measured at the amount equal to the liability on the date of initial application (adjusted for accruals and prepayments) and together with the lease liability is shown separately on the face of the balance sheet.

The incremental borrowing rate is the rate that a lessee would have to pay to borrow over a similar term and with a similar security, the funds necessary to obtain an asset of a similar value to the right of use asset in a similar economic environment. In determining the appropriate incremental borrowing rate, the Company has examined the following:

- Its current financing structure. The Company is financed from equity placements with existing and new shareholders. The Company has not previously used debt financing. The incremental borrowing rate should exclude the cost of equity finance. The Company has spoken with its Corporate bankers and they have estimated a potential lending margin applicable to the Company.
- The Company considered property yields for its leased properties. With respect to the main lease for the Woking offices the Company liaised with its property consultant to better understand the approximate yield the lessor would be looking to achieve as a starting point.
- Interest base rates. The Company has used 0.75% being the base rate at the date of initial application.
- Relevant lease terms including the nature of the underlying asset(s). A portfolio of leases with reasonably similar remaining lives, for a similar class of asset in a similar economic environment can use the same incremental borrowing rate. Therefore, the Company used the same incremental borrowing rate for its two property leases.

After considering the above the Company used an incremental borrowing rate of 7.5% for its property leases and 3.75% for its equipment lease.

9. Lease reporting (continued)

Right of use lease assets

	Property	Equipment	Total
	£	£	£
Cost			
At 1 January 2019	240,035	8,441	248,476
Additions	-	-	-
At 31 December 2019	240,035	8,441	248,476
Depreciation			
At 1 January 2019	-	-	-
Charge for the year	88,071	2,489	90,560
At 31 December 2019	88,071	2,489	90,560
Carrying amount			
At 31 December 2019	151,964	5,952	157,916

Lease liability

	Property	Equipment	Total
	£	£	£
At 1 January 2019	240,035	8,441	248,476
Repayment of lease liabilities	(96,913)	(2,637)	(99,550)
Interest on lease liabilities	15,336	279	15,615
At 31 December 2019	158,458	6,083	164,541

Lease liability maturity analysis

	2019		2018	
	Property	Equipment	Property	Equipment
Gross lease payments due:				
Within one year	98,732	2,637	96,913	2,637
Between two and five years	71,392	3,748	170,123	6,386
	170,124	6,385	267,036	9,023
Less future financing charges	(11,666)	(302)	(27,001)	(582)
	158,458	6,083	240,035	8,441

Other disclosures:

IFRS 16 - Leases	Property	Equipment	Year to 31 December 2019
	£	£	£
Short term leases expensed	8,100	-	8,100
Low value leases expensed	Nil	Nil	Nil
Variable lease payments expensed	23	19	42
Impact on loss per share	NIL	NIL	NIL

10. Tax on loss on ordinary activities

	Year to 31 December 2019	Year to 31 December 2018
	£	£
Domestic current period tax		
UK corporation tax receivable	(322,442)	(277,076)
Adjustment for prior periods	-	(1,467)
Current tax credit	(322,442)	(278,543)
Tax on loss on ordinary activities	(322,442)	(278,543)

Factors affecting the current tax credit for the period:

	Year to 31 December 2019	Year to 31 December 2018
	£	£
Loss before tax	(3,103,529)	(3,042,504)
Loss before tax multiplied by standard rate of UK corporation tax of 19% (2018: 19%)	(589,671)	(578,076)
Effects of:		
Non-deductible expenses	15,730	26,033
Depreciation	16,909	17,177
Loss on transfer/disposal of property, plant and equipment	-	4,049
Capital allowances	(17,017)	(14,457)
Research and development expenditure	(138,742)	(119,222)
Tax losses carried forward	390,349	387,420
Previous period research and development adjustment	-	(1,467)
Current tax credit	(322,442)	(278,543)

The Company has estimated tax losses of £21,734,786 (2018: £19,677,937) available for carry forward against future trading profits. Deferred tax is detailed in note 18.

11. Basic and diluted loss per ordinary share

	Year to 31 December 2019	Year to 31 December 2018
Loss after tax attributable to equity shareholders £	(2,781,087)	(2,763,961)
Weighted average number of ordinary 0.25p shares for the purpose of basic and diluted loss per share	456,365,146	324,515,831
Basic and diluted loss per ordinary share	(0.61)p	(0.85)p

11. Basic and diluted loss per ordinary share (continued)

The basic loss per share fell by 28.2% from 0.85p to 0.61p per share, primarily as a result of the increase in the weighted number of shares in issue in the year. Potential ordinary shares are not treated as dilutive as the Company is loss making, therefore the weighted average number of ordinary shares for the purposes of the basic and diluted loss per share are the same.

12. Intangible assets

Intangible assets comprise patents, trademarks and software owned by the Company. The cost is amortised on a straight-line basis over their estimated useful life.

Year ended 31 December 2019:

	£
Cost	
At 1 January 2019	522,970
Additions	42,007
Disposals	-
At 31 December 2019	564,977
Amortisation	
At 1 January 2019	427,026
Charge for the year	40,740
Disposals	-
At 31 December 2019	467,766
Net book value	
At 31 December 2019	97,211

Year ended 31 December 2018:

	£
Cost	
At 1 January 2018	460,488
Additions	62,482
Disposals	-
At 31 December 2018	522,970
Amortisation	
At 1 January 2018	394,516
Charge for the year	32,510
Disposals	-
At 31 December 2018	427,026
Net book value	
At 31 December 2018	95,944

13. Property, plant and equipment

Year ended 31 December 2019:

	Plant and equipment	Fixtures and fittings	Total
	£	£	£
Cost			
At 1 January 2019	721,843	224,602	946,445
Additions	103,820	-	103,820
Disposals	(20,480)	(39,564)	(60,044)
Transfer	(17,696)	-	(17,696)
At 31 December 2019	787,487	185,038	972,525
Depreciation			
At 1 January 2019	598,403	223,887	822,290
Charge for the year	88,533	460	88,993
Disposals	(20,480)	(39,564)	(60,044)
Transfer	(3,441)	-	(3,441)
At 31 December 2019	663,015	184,783	847,798
Net book value			
At 31 December 2019	124,472	255	124,727

Year ended 31 December 2018:

	Plant and equipment	Fixtures and fittings	Total
	£	£	£
Cost			
At 1 January 2018	709,126	296,390	1,005,516
Additions	74,900	225	75,125
Disposals	(37,438)	(72,013)	(109,451)
Transfer	(24,745)	-	(24,745)
At 31 December 2018	721,843	224,602	946,445
Depreciation			
At 1 January 2018	551,774	292,999	844,773
Charge for the year	87,504	2,901	90,405
Disposals	(37,438)	(72,013)	(109,451)
Transfer	(3,437)	-	(3,437)
At 31 December 2018	598,403	223,887	822,290
Net book value			
At 31 December 2018	123,440	715	124,155

14. Inventories

	Year to 31 December 2019	Year to 31 December 2018
	£	£
Raw materials	299,650	337,918
Work in progress	47,978	35,128
Finished goods	78,567	95,707
Subtotal	426,195	468,753
Provision for inventories	(39,954)	(66,808)
Total	386,241	401,945

Inventories are lower in 2019 following higher sales in December. The provision reduced in 2019, mainly due to two older version MS detectors that were sold during the year, but covers the potential write off of two remaining older version MS detectors and associated spare parts.

15. Trade and other receivables

	Year to 31 December 2019	Year to 31 December 2018
	£	£
Amounts falling due within one year		
Trade receivables	267,893	248,165
Provision for expected credit losses	(4,306)	-
Other receivables	153,949	161,374
Other taxes and social security	28,418	21,826
	445,954	431,365

The aging of trade receivables was as follows:

	£	£
Not past due	267,893	173,992
1 to 30 days past due	-	73,973
31 to 60 days past due	-	200
	267,893	248,165

16. Trade and other payables

	Year to 31 December 2019	Year to 31 December 2018
	£	£
Amounts falling due within one year		
Trade payables	95,431	60,540
Other taxes and social security	46,665	46,261
Other payables	17,352	12,850
Accruals and deferred income	131,115	166,880
	290,563	286,531

17. Provisions

	Dilapidations	Warranties	TOTAL
	£	£	£
Balance at 1 January 2019	96,917	73,786	170,703
Charges against provision	(14,579)	(22,588)	(37,167)
Provided for during the year	(418)	9,771	9,353
Write back to P&L	(6,141)	-	(6,141)
Balance at 31 December 2019	75,779	60,969	136,748

The provision for anticipated dilapidations is in respect of the Company's leasehold premises at Woking. The amount carried forward of £75,779 is based on the potential future cost which could be incurred at the end of the lease.

The Company provides OEMs and distributors with a 15-month warranty on MS products. The provision represents the anticipated cost of servicing those warranty claims. The provision is based on historical costs including product, replacement parts and the cost of service engineers that may have to be incurred over the warranty period. The provision for warranty at the end of the year is £60,969.

18. Deferred tax

Deferred taxation provided in the financial statements:

	£
Balance at 1 January and 31 December 2019	-

	Year to 31 December 2019	Year to 31 December 2018
	£	£
Accelerated capital allowances	21,204	20,701
Tax losses carried forward	(21,204)	(20,701)
	-	-

A deferred tax asset in respect of tax losses has only been recognised to the extent of the deferred tax liability in respect of accelerated capital allowances at a tax rate of 17%.

19. Share capital

	Number	£
Allotted, called up and fully paid ordinary shares of 0.25p each		
Ordinary shares as at 31 December 2018	456,365,146	1,140,913
Ordinary shares issued for cash in the year	-	-
Ordinary shares as at 31 December 2019	456,365,146	1,140,913

The Company has one class of share, ordinary shares of 0.25p each, with each share carrying one vote and equal rights to discretionary dividends. No shares were issued in 2019. In 2018 the Company issued 275m ordinary shares of 0.25p each for £5.5m at an issue price of 2p.

20. Reserves

The share premium account represents the excess over the nominal value for shares allotted less issue costs. The share option reserve represents accumulated charges made under IFRS 2 in respect of share-based payments. Where share options expire, lapse or are exercised, the amounts within the share-based payments reserve relating to those options are transferred to retained earnings as shown in the Statement of Changes in Equity.

21. Share premium

	Year to 31 December 2019	Year to 31 December 2018
	£	£
Opening balance brought forward	24,867,886	20,504,071
Share issue in the year	-	4,812,500
Share issue costs	-	(448,685)
Closing balance carried forward	24,867,886	24,867,886

22. Capital commitments

	Year to 31 December 2019	Year to 31 December 2018
	£	£
Contracted for but not provided in the financial statements	806,185	928,947

The capital commitment relates to purchase orders placed on our third-party manufacturer.

23. Directors' emoluments

	Year to 31 December 2019	Year to 31 December 2018
	£	£
Salaries and fees	342,017	354,396
Non-cash payments	1,403	1,131
Pension costs	27,560	22,060
Employment related share-based payments	47,075	58,019
	418,055	435,606

23. Directors' emoluments (continued)

In the year to 31 December 2019 two Executive Directors that served during the year accrued benefits under the Company's auto-enrolment pension scheme. There are no key management personnel other than the Directors. The highest paid Director, Mr Glenn Tracey, received emoluments of £154,433 as disclosed in the Directors' Remuneration Report, which included a share-based payment charge of £10,742.

There were no gains on the exercise of share options in the year.

24. Employees

	Year to 31 December 2019 Number	Year to 31 December 2018 Number
Directors	5	6
Other staff	24	21
	29	27

	Year to 31 December 2019 £	Year to 31 December 2018 £
Employment costs (including Directors)		
Wages and salaries	1,488,583	1,378,668
Social security costs	163,820	148,910
Termination payments	-	30,342
Pension costs	164,285	123,771
Employment related share-based payments	69,012	88,187
	1,885,700	1,769,878

25. Share-based payments

Share option schemes

The Company operates an EMI and an unapproved share option scheme as a means of encouraging ownership and aligning interests of staff and shareholders. The table below shows the number of options outstanding and exercisable at 31 December 2019 and the weighted average exercise price.

	Year to 31 December 2019		Year to 31 December 2018	
	Number of options	Weighted average exercise price	Number of options	Weighted average exercise price
Outstanding at the beginning of the year	13,964,000	6.5p	5,447,200	11.4p
Granted during the year	5,000,000	1.55p	9,000,000	4.1p
Forfeited/expired during the year	(320,000)	7.0p	(483,200)	15.2p
Exercised during the year	-	-	-	-
Outstanding at 31 December	18,644,000	5.2p	13,964,000	6.5p
Exercisable at 31 December	2,624,000	12.1p	544,000	40.9p

25. Share-based payments (continued)

Details of options in issue at the year-end are:

Date of grant	Exercise price	Latest exercise date	Estimated fair value	Number of options 31 December 2019	Number of options 31 December 2018
December 2010	*25.86p	December 2020	11.0p	29,000	29,000
July 2012	42.00p	July 2022	12.1p	230,000	230,000
May 2014	46.80p	May 2024	11.4p	90,000	110,000
November 2014	49.50p	November 2024	11.9p	100,000	100,000
April 2015	47.75p	May 2025	10.5p	100,000	100,000
January 2016	23.50p	January 2026	11.7p	395,000	395,000
September 2016	5.00p	September 2026	2.0p	2,100,000	2,200,000
September 2016	5.00p	September 2026	0.6p	2,000,000	2,000,000
January 2018	4.05p	January 2028	1.3p	3,100,000	3,300,000
January 2018	4.05p	January 2028	2.2p	5,500,000	5,500,000
June 2019	1.55p	June 2029	0.7p	5,000,000	-
				18,644,000	13,964,000

The estimated fair values of the share options were calculated by applying the Black Scholes or Monte Carlo models. The period of exercise for all options granted is ten years from date of grant and the vesting period is normally three years from the date of grant. Prior to 2016 the expected volatility had been determined by calculating the historical volatility of the share price over the previous year. From September 2016, and consistent with the application guidance in IFRS 2, the Directors considered the most appropriate method to calculating volatility to be the use of the historical volatility of comparable listed companies. The model inputs are detailed below:

The model inputs using Black Scholes were:

Date of grant	Exercise price	Share price	Risk free rate	Expected volatility	Gross dividend yield
December 2010	*25.86p	*25.86p	1.50%	75%	-
July 2012	42.00p	42.00p	0.50%	33%	-
May 2014	46.80p	46.80p	2.69%	16%	-
November 2014	49.50p	49.50p	2.05%	18%	-
April 2015	47.75p	47.75p	1.58%	17%	-
January 2016	23.50p	23.50p	1.74%	38%	-
September 2016	5.00p	5.12p	0.87%	30%	-
January 2018 (staff)	4.05p	4.29p	0.79%	31%	-
January 2018 (directors)	4.05p	4.29p	1.29%	39%	-
June 2019	1.55p	1.55p	0.87%	34%	-

* the share prices and corresponding option exercise prices for grants made up to 2010 have been adjusted for a bonus issue and share sub-division that took place in April 2011.

26. Warrants

On 20 October 2015, the Company granted warrants to Numis Securities Ltd, the Company's brokers at the time as part of its remuneration for the equity placing which was completed in October 2015, to subscribe for 1,467,303 ordinary shares, being 2% of the issued share capital of the Company on that date. The exercise price of the warrants is 33p and the warrants can be exercised for a period of 5 years from the date of grant.

The estimated fair value of the warrants of 8.84p was calculated by applying the Black Scholes model. The period of exercise for the warrants is 5 years from the date of grant and there is no vesting period. The expected volatility has been determined by calculating the historical volatility of the share price over the previous year.

The model inputs were:

Date of grant	Share price	Exercise Price	Risk free rate	Expected volatility
October 2015	33.0p	33.0p	1.86%	37%

27. Financial instruments

The Company's financial instruments comprise cash and various trade receivables and trade payables that arise directly from its operations. No trading in financial instruments is undertaken.

The main risks arising from the Company's financial instruments are liquidity, currency and interest rate. The Board oversees the management of these risks, which are summarised below.

Liquidity risk
The Company finances its operations from equity funding provided by shareholders and revenues generated by the business. The Company seeks to manage liquidity risk to ensure enough funds are available to meet working capital requirements. The Board is in dialogue with its brokers to prepare for an equity fundraise in the coming months. In view of the inherent uncertainties implicit in a future fundraise, there is a material uncertainty related to going concern. Nevertheless, for the reasons explained in more detail in note 3, the Directors have a reasonable expectation that the Company will be able to raise funds within an appropriate timeline and have adopted the going concern basis in preparing the financial statements.

The Company invests its cash reserves in bank and money market deposits as a liquid resource to fund its operations. The Company's strategy for managing cash is to balance interest income with counterparty risk ensuring the availability of cash to match the profile of the Company's cash flows.

Interest rate risk
The Company does not face any significant interest rate risk as it has no borrowings. Surplus funds are invested to maintain a balance between accessibility of funds, competitive rates, and counterparty risk while investing funds safely.

Credit risk
The Company manages its credit risk in cash and cash equivalents by spreading surplus funds between creditworthy financial institutions.

27. Financial instruments (continued)

The Company is also exposed to credit risk attributable to trade and other receivables. The maximum credit risk in respect of the financial assets at each period end is represented by the balance outstanding on trade and other receivables. The Company has limited exposure to credit risk, as the majority of its trade and other receivables are due from established organisations. The Company monitors the credit worthiness of its customers on a regular basis.

Foreign currency risk
The majority of the Company's transactions are denominated in pounds sterling. The Company has no long-term commitments to purchase goods or services in foreign currencies. Purchases denominated in foreign currency are expensed at the exchange rate prevailing at the date of the transaction and represents an immaterial proportion of the Company's total expenditure.

The only assets and liabilities denominated in foreign currencies relate to trade receivables and trade payables with overseas counterparties together with small balances of US dollar and Euro currencies to settle these liabilities. The risks and sums involved are immaterial.

Fair values
The Directors consider that there is no material difference between the book value and the fair value of the financial instruments at 31 December 2019 and 31 December 2018.

Capital management
The Company's capital base comprises equity attributable to shareholders. As the Company's focus has been on establishing itself as a successful supplier of MS detectors, the primary objective in managing cash spend has been to achieve progress on product development and commercialisation in a cost-efficient manner and in managing liquidity risk to ensure the Company continues as a going concern.

28. Related party transactions

There are no related party transactions to disclose. Remuneration paid to the Directors is shown in note 23 to the financial statements. There were no related party transactions with third parties.

29. Control

As at 31 December 2019, no individual shareholder had a controlling interest in the Company.

30. Events after the Reporting Date

There are no events after the 31 December 2019 to report.