Keywords Studios PLC ("Keywords Studios", "the Group")

Full year results for the year to 31 December 2019

A year of strong growth and further investment in a diversified platform

Keywords Studios, the international technical and creative services provider to the global video games industry, today announces its full year results for the year to 31 December 2019.

Financial overview:

Results for the year ended 31 December	**2019**	**2018**	**% change**
Group revenue	**€326.5m**	**€250.8m**	**+30.2%**
Organic Revenue growth[1]	**+15.5%**	**+10.1%**	
Adjusted EBITDA (pre IFRS 16)	**€49.5m**	**€43.7m**	**+13.2%**
Adjusted EBITDA margin	*15.2%*	*17.4%*	
EBITDA[2]	€43.4m	€34.3m	+26.4%
Adjusted profit before tax[3]	**€40.9m**	**€37.9m**	**+7.9%**
Profit before tax	€17.4m	€22.1m	-21.4%
Adjusted earnings per share[4]	**48.78c**	**45.50c**	**+7.2%**
Earnings per share	15.23c	23.16c	-34.2%
Total dividend per share	**0.58p**	**1.61p**	**-64%**
Adjusted cash conversion rate[5]	**79.0%**	**81.9%**	
Net debt	**€17.9m**	**€0.4m**	

Highlights:

Strong revenue growth (+30.2% to €326.5m) in a relatively light year for video game releases, complemented by acquisitions

- 15.5% Organic Revenue growth (2018: 10.1%) driven by particularly strong progress in Functional Testing and Game Development
- Completed 8 high quality acquisitions in the period:
  - Sunny Side Up, GetSocial, Wizcorp, Descriptive Video Works, TV+SYNCHRON, Ichi, Syllabes and Kantan
  - Strengthened our services, particularly in Game Development, Marketing and Audio services
  - Added proprietary, cutting edge machine translation and crowd sourcing technology to Localization

Continued investment in the platform to ensure ongoing growth opportunities are fully captured

- Significant expansion of the Group's facilities in Montreal, Katowice, Manila, Brighton, Mexico City, Tokyo, Sao Paulo and New Delhi, as well as establishing a new presence in Leamington Spa

- Over 1,400 new workstations added in 2019, representing a c.25% increase in our capacity

Margin was held back in 2019 but is expected to increase incrementally towards historic norms in 2021, following near-term COVID-19 disruption

- An underperforming fixed price contract brought in through acquisition concluded at the end of 2019, with a good client relationship maintained
- Investment in operating costs and expansion to be leveraged following COVID-19 disruption

Adjusted cash conversion broadly maintained

- Adjusted cash conversion rate of 79.0% in line with prior year (2018: 81.9%)
- €6m increase in tax credit accruals due to strong growth in Canada and the UK
- Increased capital and operational expenditure to support growth

Robust capital structure and liquidity

- Strong balance sheet with net debt 0.4x EBITDA at 31 December 2019. Net debt increased to €17.9m (2018: €0.4m), after €31.6m spend on M&A and acquisition and integration costs
- €82m of funds available as at 31 December 2019 from cash balances and undrawn committed facilities under the Group's Revolving Credit Facility (RCF)
- In final stages of exercising the RCF accordion which would provide a further €30m of committed facilities

Current trading, COVID-19 update and outlook

- Entered the year with strong growth tailwinds, with the industry expecting the launch of a new generation of games consoles and the further development of new streaming platforms
- Structural drivers of growth across the video games market remain, including the ongoing trend towards external development, while increased game playing due to COVID-19 related isolation measures is driving continued demand for game development services
- Trading in 2020 started in line with market expectations for the full year; only limited impact from COVID-19 seen in the first two months at our 5 China based studios
- We have since moved over 5,500 people to work from home arrangements which, following some short-term disruption, is working well
- In discussion with remaining clients to move more production staff to this model, particularly in testing where we hope to reduce the number of people currently in furlough arrangements
- Providing seven service lines from 59 studios across 21 countries provides some resilience for our clients to the varying cycles of the virus in different locations
- Seeing increased demand for many of our services, as clients look for support during this challenging time and reappraise their production arrangements
- As it remains difficult to foresee the impact on our clients and the threats and opportunities that may arise, it is inappropriate to provide guidance for FY20 at this time
- Despite the Group's resilient financial position and the modest size of the dividend, the Board believes it would be inappropriate to recommend a final dividend in the current circumstances
- In addition, Andrew Day (CEO) and Jon Hauck (CFO) have volunteered to take a 20% reduction in pay, which will be kept under review as the situation evolves. Further to this, the Non-Executive Directors and a number of other executives, have agreed to take voluntary pay reductions

- Following the near-term disruption, the Group is well placed, with a strengthened and diversified business and stronger client relationships, to deliver on pent-up client demand and to incrementally return margins to historic norms

Andrew Day, Chief Executive of Keywords Studios, commented:

“2019 was a year of strong growth as we continued to build our platform to become the ‘go to’ service provider to the video games industry which, in turn, enabled us to take advantage of the accelerating trend towards external development in the industry.

“Some of our service lines felt the effects in 2019 of a light games release schedule at the tail end of the existing console cycle. 2020 is expected to see stronger demand from a fuller release schedule as a result of the launch of a new generation of games consoles, in addition to the further development of new streaming platforms, content demands for virtual and augmented reality, and the underlying drivers of growth across the video games market.

“Whilst we are seeing some operational disruption to the provision of our services due to the COVID-19 pandemic, with some of our service lines and locations affected more than others, the underlying drivers of growth across the video games market remain intact. It has also been encouraging to see our clients turning to us for support in these difficult times and our teams responding with extreme agility to support them, whilst rapidly implementing our own contingency plans.

“There will be some further challenges ahead, but we are well financed, with a global footprint, a unique position in a resilient market and a strong team to manage the business through these unprecedented times. We are, therefore, confident that the Group is well placed to emerge in a robust position in order to deliver on the pent-up demand across its client base when the operating environment normalizes.”

A presentation of the full year results will be made to analysts later this morning via a live webcast and conference call. To register for access, please contact Charles Hirst or Isabella Grace at MHP Communications on +44 7595 461 231 / +44 7860 821978 or email keywords@mhpc.com.

The Group reports certain alternative performance measures (APMs) to present the financial performance of the business which are not GAAP measures as defined by International Financial Reporting Standards (IFRS). Management believes these measures provide valuable additional information for the users of the financial information to understand the underlying trading performance of the business. In particular, adjusted profit measures are used to provide the users of the accounts a clear understanding of the underlying profitability of the business over time. For full definitions and explanations of these measures and a reconciliation to the most directly referenceable IFRS line item, please refer to the APMs section at end of the statement.

[1] *Organic revenue at constant exchange rates is calculated by adjusting the prior year revenues, adding pre-acquisition revenues for the corresponding period of ownership, and applying the 2018 foreign exchange rates in both years*

[2] *EBITDA comprises Operating profit, adjusted for amortisation of intangible assets €7.3m (2018: €6.9m) and depreciation €7.3m (2018: €5.3m), while deducting the share of profit from associates €nil (2018 €0.1m) and bank charges €0.6m (2018: €0.5m). Adjusted EBITDA is also before costs of acquisition and integration €4.3m (2018: €5.3m), share option expense €9.8m (2018: €4.1m) and non-controlling interests €0.1m (2018: €nil)*

[3] *Adjusted profit before tax comprises, Profit before tax adjusted for costs of acquisition and integration €4.3m (2018: €5.3m), share option expense €9.8m (2018: €4.1m), amortisation of intangible assets €7.3m (2018: €6.9m), non-controlling interest €0.1m (2018: €nil), foreign exchange (gain) / loss €1.7m (2018: gain of €0.8m) and unwinding of discounted liabilities on deferred consideration €0.3m (2018: €0.3m)*

[4] *Adjusted earnings per share, being the adjusted profit after tax divided by the non-diluted weighted average number of equity shares as reported. The adjusted profit after tax comprises the adjusted profit before tax, adjusted for tax expense €7.5m (2018: €7.2m) and deducting the tax arising on the bridging items to the adjusted profit before tax €1.7m (2018: €1.4m as restated to take into account the tax impact)*

[5] *The adjusted cash conversion rate has been calculated, as the adjusted free cash flow expressed as a percentage of the adjusted profit before tax.*

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About Keywords Studios (www.keywordsstudios.com)

Keywords Studios is an international technical services provider to the global video games industry. Established in 1998, and now with 59 facilities in 21 countries strategically located in Asia, the Americas and Europe, it provides integrated art creation, marketing services, software engineering, testing, localization, audio and customer care services across more than 50 languages and 16 games platforms to a blue-chip client base of over 950 clients across the globe.

Keywords Studios has a strong market position, providing services to 23 of the top 25 most prominent games companies, including Activision Blizzard, Bandai Namco, Bethesda, Electronic Arts, Konami, Microsoft, Riot Games, Square Enix, Supercell, TakeTwo, Epic Games and Ubisoft. Recent titles worked on include Call of Duty: Black Ops 4, Mortal Combat X, Assassin's Creed Odyssey, Borderlands 3, League of Legends, Fortnite, Clash Royale and Rainbow Six Siege. Keywords Studios is listed on AIM, the London Stock Exchange regulated market (KWS.L).

Chairman's Statement 2019

A year of strong delivery with a few growth pains

Keywords has delivered another year of strong growth in 2019, at the temporary expense of lower margins, as it continued to deliver against the ambitious plan it set out at the time of its IPO in July 2013.

Since that time, the video games market has grown significantly, with more users, games, platforms and expanded content, revealing further opportunities for our services which are agnostic to the success of a specific platform or game. As outsourcing has accelerated to support this expansion of content, so too has the breadth of services required by our customers, most recently taking us into co-development and marketing services. Indeed, looking back over the years, there has been an impressive track record of consistency of message and over-achievement assisted in no small measure by the extent to which we continually find opportunities to integrate ourselves into the multifarious facets of the video games industry.

Our CEO, Andrew Day’s report shows how relentlessly the Group has been growing whilst also building the support infrastructure necessary to manage what is now becoming a very substantial business.

2019's accelerated growth brought with it a higher level of operational expenditure and, having identified a number of opportunities to improve the way we manage such rapid growth, we have put measures in place to deliver both revenue growth and improving margins following the near-term disruption from COVID-19.

People

Keywords has become a significant force in the industry, having grown from just over 200 people at IPO to over 7,400 full time equivalent employees (FTEs) at the year end. Managing, training, recruiting and motivating such a large group which is diverse in every dimension is a major undertaking and whilst our regular staff surveys highlight ways in which we need to improve, we are also getting a great deal right - our aspiration is to make all employees proud to be part of Keywords, embrace our culture and to be highly motivated to help continue the Group's success. Those people who have joined the Group through acquisition notice and appreciate the additional opportunities that Keywords offers.

I would like to commend all Keywordians for their tireless contributions as they "go the extra mile" every day for our customers and help us to continue to deliver Keywords' remarkable success story, particularly as many have rapidly changed their ways of working to support the global efforts to control the spread of COVID-19.

Board

As previously announced, David Broderick stood down from his role as Chief Financial Officer in October 2019 for personal reasons and, on behalf of the Board, I would like to reiterate our thanks for his contribution to Keywords over the last three years.

Jon Hauck was appointed Chief Financial Officer in October 2019, having previously been Group Financial Controller and Treasurer at FTSE 100 business services group, Rentokil Initial Plc, where he gained highly relevant experience given Rentokil's operations across 73 countries world-wide and its active M&A programme. Jon has already made a very positive impact.

Responsible business

The Board is very mindful of the recent focus on Environmental, Social and Governance (ESG) and we are committed to building a sustainable business for the long term that positively contributes to society and the environment; our focus on this will be backed up by incentives and financial assistance to ensure such social initiatives flourish. To fulfil this aim and as part of our commitment to being a responsible business, the Board has appointed Jon Hauck, Chief Financial Officer, to oversee this area.

The Board was particularly proud to see, on visits to several of the Group's studios in 2019, the number of social and environmental initiatives in place locally which benefit the local communities and wider charitable causes.

COVID-19 overview, current trading and outlook

The impact on the business from COVID-19 was limited to our Chinese operations in the first two months of the year but we have since experienced further disruption across the business.

Our first priority during this period is the health and wellbeing of our people and, drawing on our experiences of territories that are further progressed in dealing with the crisis, in many cases we were able to implement safeguarding measures ahead of local authorities' health and safety recommendations across the 21 countries in which we are located.

This has enabled us to both keep our people safe and deliver business continuity across our service lines, and as part of this we have so far converted over 5,500 people to work from home arrangements.

Operating within the global video games market and with seven service lines delivered from 59 studios across 21 countries, coupled with our ability to deliver the majority of our services through work from home arrangements, means we are able to offer clients a high degree of resilience to the varying cycles of the spread of the virus in different locations. However, the situation is changing rapidly, and it is difficult to foresee the impact on our clients and the further threats and opportunities that may await us. As such, the Board does not believe it is prudent to provide guidance on the potential full year outcome for FY20 at this time.

The Group has a strong balance sheet with net debt (excluding IFRS 16 leases) as at 31 December 2019 of €17.9m, representing a net debt to Adjusted EBITDA ratio of 0.4x. The business has good liquidity with cash and undrawn committed facilities under the €100m revolving credit facility (RCF) of €82m as at the end of December. In addition, as a precautionary measure we are in final stages of exercising the accordion feature under the RCF which would provide a further €30m of committed facilities. Resilience testing has demonstrated the business is capable of operating in a work from home model for a prolonged period and remain comfortably compliant with bank covenant thresholds.

Given the current environment, the Group has taken steps to preserve cash by a close focus on costs and eliminating discretionary expenditure, reducing working capital and delaying certain capital projects.

Overall, the resilience of the video games industry to economic downturns and the continued strong demand for the Group's services from its clients, combined with the Group's flexible cost base, geographical diversification, broad range of services, financial strength and repeat revenues, which have consistently been at approximately 80% year on year, from long standing client relationships, provide the Group with the resilience to trade through this uncertain period and emerge in a strong position.

A more detailed assessment of the potential impacts and opportunities resulting from COVID-19, and the mitigating actions we are taking, are provided in the CEO's Review, with an assessment by service line provided in the Service Line Review, and in the Principal Risks and Uncertainties section.

Dividend

Despite the Group's resilient financial position and the modest size of the dividend, the Board believes it would be inappropriate to recommend a final dividend in the current circumstances.

Summary

We remain absolutely committed to the strategy embarked upon at the time of the IPO and, beyond the near-term disruption from COVID-19, can see many years of good organic and acquisition led growth and strong cash flows ahead as we continue to pursue that strategy successfully.

We are confident that we will continue to deliver excellent results to create further shareholder value over time, as we leverage our expanded platform in a growing, global video games market with an accelerating trend towards outsourcing (and few competitors of scale).

We continue to keep our focus firmly on the video games industry, where we see substantial scope in the medium term to continue to grow even faster than the growing industry itself as we become the 'go to' global services platform for video games and beyond. In addition, other industries such as film and television (and on-line entertainment generally) and other adjacent markets are increasingly adopting interactive content and video games practices, such as simultaneous release of content, and we are uniquely placed to take advantage of these developments as they present themselves.

We will continue to monitor the COVID-19 situation closely and do all we can to protect our people and support our customers, who are increasingly looking to us as part of the solution for their own contingency planning.

We are well financed, with a global footprint, a unique position in a resilient market and a strong team to manage the business through this uncertain period and we expect to emerge in a robust position to continue to grow once we return to a more normalised environment.

Ross Graham
Chairman

CEO Review

Strong growth as we invested in building a more diversified services platform of scale

2019 was a year of strong growth, with revenues up 30.2% to €326.5m, as we continued to build our platform as the 'go to' service provider to the video games industry which, in turn, enabled us to take advantage of the accelerating trend towards external development and outsourcing in the industry.

2019 was a relatively light year for video game releases as the industry reached the tail end of the existing console cycle, but we saw demand for our services continue to grow, with some service lines experiencing very strong growth as they benefitted from a marked shift towards outsourcing.

The Group delivered 15.5% year-on-year Organic Revenue growth, which excludes the impact of currency movements and acquisitions (as defined in the Alternative performance measures section), driven in particular by very strong organic performances in both Game Development and Functional Testing which grew by 36.4% and 37.0% respectively. These are now our two largest service lines, and their strong achievements are, in part, testament to the effective integration of prior year acquisitions to build strong, international service platforms of scale that are experiencing the increase in demand for their services that comes from becoming the 'go to' provider.

Having first entered Game Development through the acquisition of GameSim in May 2017, we have now grown it to become a €66m revenue business employing an average of 792 production focused people across 10 studios. This additional scale enables us to take advantage of the accelerating demand for external development, including the growing demand for co-development and full game development services.

The very strong organic growth achieved by Functional Testing in 2019 also demonstrated the acceleration of demand for our testing services, having reached the critical mass point of becoming the provider of choice, particularly in North America following the successful integration of VMC.

To support the Group's high level of growth, we have continued to invest in the Group's operational capacity, supporting infrastructure and management, which we believe is important to enable the Group to capitalise on the clear opportunities it is seeing to capture share of the growing video games services market. These investments held margins back from their medium to longer term norm but will bring further benefits in future years as we leverage these costs over a growing revenue base.

Complementing the Group's strong organic growth, we continued to develop the Group through acquisitions, with 8 made during the year. These added scale to and diversified Keywords' marketing services, Audio, and Game Development service lines and brought cutting edge machine translation and crowd sourcing technology to the Group's Localization service offering.

In October 2019, we agreed a new revolving credit facility for up to €140m which provides the Group with further flexibility and headroom to manage the short-term disruption of COVID 19 and invest in our business both organically and through acquisition.

Delivering on our strategy

Our strategy to build our platform as the ‘go to’ service provider to the video games industry is positioning the Group as the leader in a market characterised by highly fragmented, local, single-service providers, despite the growing needs of the major video games publishers and developers who act globally. These customers are increasingly turning to external development and support services as a way to manage the demands of generating more sophisticated content whilst limiting their fixed costs, and so they require the quality, flexibility, and security of a full service provider of scale.

We made considerable progress in building our platform during the year, by investing in capacity expansion, making acquisitions that enhanced our service offering and generating synergies through collaboration across our expanding multi-service global platform, positioning us as an increasingly relevant and integral partner to our customers.

Organic investment

During the year, we invested in expanding our operational capacity and enhancing the Group’s infrastructure to scale up our business to support the Group’s ongoing growth. In addition to the over 1,400 work stations created during the year, we have invested in people, systems and marketing as we develop our IT, HR and finance functions and enhance our global branding.

This investment included substantial expansion of the Group's facilities in Montreal, Katowice, Manila, Brighton, Mexico City, Tokyo, São Paulo and New Delhi. These expansions incurred start-up costs, where we were paying for space and staff as we fitted out the facilities and built and trained the production and support teams, before becoming operational.

We have also continued to support the costs of the investment phase in our early stage technology businesses, Yokozuna Data, AppSecTest and GetSocial, as well as our fledgling services in music management, sound design, subtitling and dubbing for film and TV.

We have continued to invest in the backbone of the business with increased capabilities in our support functions, including finance, HR, IT, facilities, administration, and general management (average number of people employed increasing to 646 from 505 in 2018) and we are increasingly developing ‘hubs of excellence’ in these support functions which support a number of studios or key regions, such as our Montreal hub which supports studios across North America. Around the Group, we continue to develop our own tools to enable and deliver our services and to enhance productivity, in addition to adopting and operating third party best of breed solutions.

Once the environment has normalised following disruptions related to COVID-19, we expect to reap the benefits of many of these investments as work stations are efficiently utilised and our support functions yield improved recruitment, training, and retention of staff, enhanced management information, and more efficient workflow management.

Acquisitions and integration

We were pleased to have made 8 high quality acquisitions during the year, which further strengthened the breadth of value-added services we are able to offer our global video games customers.

In January, we expanded our range of marketing services with the acquisition of Sunny Side Up, which brought production of high-quality marketing assets and provided access to the talent pool in

Quebec City, to complement our similar operations in Brighton and London. Also in London, Ichi Worldwide joined the Group in December, adding strength and depth to our marketing services in campaign management, branding strategy and social media management, which are key to determining the success of a game.

We diversified our Audio Services offering with the acquisitions of Vancouver based Descriptive Video Works, which brought accessibility services in North America; TV+SYNCHRON, which added a Berlin based dubbing and voice over studio in German language; and Syllabes, a games and film/TV audio recording studio, completing the full suite of services provided out of Keywords' Montreal services hub.

We also further strengthened our Game Development service line through the acquisition of GetSocial, based in The Hague, which provides an integrated platform for the management of all social media interactions within mobile games. In Japan, we added the game development team, Wizcorp, to our existing 270-person team in Tokyo.

In our Localization service line, we welcomed Kantan to the business, which brought proprietary, cutting edge machine translation and crowd sourcing technology to the Group that will enable Keywords to work with its video game customers in marrying our unrivalled video games expertise with highly customisable machine translation engines and downstream workflow tools.

Following the acquisitions made during the year, we exited the year with pro forma revenue (as defined in the Alternative performance measures section) of €333.6m.

During the year, we have also made good progress with integrating prior period acquisitions, which are making good contributions to the Group. The Group's largest acquisition in 2018 (completed in August), Studio Gobo and Electric Square, has outperformed expectations while our largest acquisition in 2017 (completed in October of that year), VMC, was fully integrated in 2018, with the subsequent benefits of our additional scale demonstrated by the particularly strong growth in our Functional Testing service line during 2019.

We were able to set out in more detail, in our Capital Markets Day in Montreal in November, how acquired businesses can thrive within the Keywords family, as they are able to leverage our scale, reputation, international reach, and broader expertise. In addition, they are able to focus on delivering high quality work for their customers whilst we provide the functional support that would otherwise be a constraint on their time as they grow their businesses. The benefit for these businesses of being part of the Keywords family is further evidenced by the reduction in 'downtime' and staff churn that many experience due to the opportunities to work on a broader base of interesting projects that the wider Group is able to offer.

People

The average number of FTE employees across the Group in the period grew to 7,424 (2018: 5,238) with around 900 jobs being created organically and driven primarily by the very robust growth in our Functional Testing and Game Development businesses.

We constantly strive to provide great working environments for all Keywordians around the world. One example of this can be seen in the central locations of our studios. Rather than over emphasise low cost locations and low cost facilities we feel the benefits of being able to attract the best talent in the most scalable manner outweigh any savings from potentially lower occupancy costs.

Whilst there is always more to do in investing in our people, we continue to make improvements with training, benefit schemes, career progression and we monitor ourselves in line with our diversity and non-discrimination policies, to ensure we are providing equal opportunities in all of our locations.

We are proud of our culture which brings common purpose to our colleagues around the world. Our empowered, relaxed, professional and humble team consistently does the very best we can for each project entrusted to us, working as an extension of our clients' organisations.

Our broad pool of highly experienced and games-passionate talent provides a tremendous resource that our customers can access in a flexible and cost-efficient manner across the globe and in convenient time zones.

In turn, we offer colleagues the opportunity to work on an unrivalled range of the world's leading games ahead of their release. We are typically working on over 250 titles at any one time, and we provide good career advancement and opportunities to move between our various studios and the countries in which we operate. This can be seen in our senior leadership team which comprises some home-grown talent and people who joined us with acquired entities, in addition to externally hired employees.

Our continued growth and reputation for consistently delivering good quality service on highly agile engagements to demanding deadlines is testament to the Keywords culture and the skills and the commitment of Keywords' talented and games-passionate employees and collaborators. We are proud of our global talent pool, which means there is a contribution from Keywords in most of the world's leading games, and we would like to thank everyone involved for their valuable contribution to the continued success of the Group.

We are particularly proud of how Keywordians around the world have responded to the short-term challenges and the changes to ways of working to keep everybody safe in the context of COVID-19. We have though unfortunately had to make use of the various furlough arrangements provided by various governments during March and April 2020 while continuing our efforts to secure clients consents to move project teams to work from home arrangements. We have established a $500,000 hardship fund to support those on furlough who are experiencing particular financial constraints.

Service line review

All our service lines continued to grow in 2019, whilst we also continued to make good progress with cross-selling our services, with a 9.1% increase in the number of customers buying three or more services to 108 (2018: 99).

The following table provides a summary of our revenues by service line, their growth rates on a reported basis and Organic Revenue** growth. We have also presented pro forma revenues by service line, which includes the annualised revenue of all acquisitions made in the year, to provide a better overview of the size and balance of the business at the end of the year, together with the average number of operational staff in each service line, excluding managerial and support staff. The service line commentary which follows reports on the statutory reported revenues unless otherwise stated.

Revenue	% of 2019 Group revenue	2019 Revenue €m	2018* Revenue €m	Change from 2018 %	2019 Organic Revenue** growth %	2019 Pro forma** Revenue €m	2019 Average number of operational staff by service line
Art Creation	13.3%	43.6	34.0	28.2%	6.7%	46.1	1,194
Game Development	20.3%	66.3	35.2	88.4%	36.4%	67.0	792
Audio	12.4%	40.5	34.2	18.4%	2.3%	43.7	220
Functional Testing	21.1%	68.9	47.8	44.1%	37.0%	68.9	2,316

Localization	14.9%	48.5	44.0	10.2%	7.5%	49.2	381
Localization Testing	6.9%	22.6	19.7	14.7%	11.2%	22.6	532
Player Support	11.1%	36.1	35.9	0.6%	(4.7%)	36.1	1,343
Total	**100.0%**	**326.5**	**250.8**	**30.2%**	**15.5%**	**333.6**	

** The prior year comparatives for Art Creation, Game Development and Functional Testing have been restated, primarily to reflect the reclassification of certain Sperasoft services, in order to provide a more meaningful comparison with the 2019 presentation.*

*** The group reports certain Alternative performance measures (APMs) which management believes provide valuable additional information for the users of the financial information to understand the underlying trading performance of the business. For full definitions and explanations of these measures and a reconciliation to the most directly referenceable IFRS line item, please see the APMs section at the end of the statement.*

Art Creation (13.3% of Group revenues for the year)

Our Art Creation service line creates graphical art assets for video games including concept art creation, 2D and 3D art asset production and animation. Also included under Art Creation is the marketing services business we are building through acquisitions, and the subsequent organic growth of Fire Without Smoke, The TrailerFarm, Sunny Side Up and most recently, Ichi Worldwide.

2019 performance

Art Creation revenues grew by 28.2% to €43.6m in the year ended 31 December 2019 (2018: €34.0m) with the benefit of full year contributions from 2018 acquisitions Fire Without Smoke and The TrailerFarm, and contributions from 2019 acquisitions, Sunny Side Up, whilst Ichi was acquired at the very end of 2019. Organic Revenue, which excludes the impact of currency movements and acquisitions, grew by 6.7% for Art Creation.

During the year, we employed an average of 1,194 production based people in Art Creation (2018: 1,038) whose services are primarily delivered by full-time permanent employees, particularly in our bigger operations in China and India, complemented by a small number of freelancers, particularly in our North American operations, which provides some additional flexibility in matching resources with demand. These freelance resources are not included in our employment numbers.

COVID-19 update and mitigation measures

In the current year, our five Chinese art studios were the first to be impacted by COVID-19 as government-mandated shutdowns were imposed following the Lunar New Year holiday. During that period, our businesses implemented work from home measures wherever that was possible. Since re-opening the studios, we have implemented social distancing measures, increasing the space available per person through shift working and rigorous hygiene regimes combined. Our China businesses have been back to close to near full production since the end of February and employees previously working from home have been returning to in-studio work.

More recently, our art and marketing studios in North America, Europe and India have all implemented work from home operations.

The market opportunity and medium-term outlook

Art Creation operates in a market we estimate to be valued at well over $1bn, with just c.50% of these services currently outsourced to a highly fragmented base of over 100 service providers.

We have yet to quantify the opportunity for the Marketing services business but it is clearly very large and highly fragmented given the range of services provided both internally and externally which includes key art, trailer creation, advertising, PR, branding, campaign management, influencer marketing and management, marketing analytics, and community management.

We expect to continue to add to our Marketing services activities with further acquisitions with the intention of reporting this business separately when it achieves scale through continued organic growth and acquisition.

Game Development (20.3% of Group revenue for the year)

Formerly called Engineering, our Game Development service line provides external development services to game developers and publishers including full game development, co-development, porting and general software engineering consultancy.

2019 performance

Now our second largest service line, Game Development increased revenues by 88.4% to €66.3m (2018: €35.2m). This increase reflected full year contributions from our 2018 acquisitions, Snowed In, Studio Gobo and Electric Square, and the benefit of the acquisition of Wizcorp in April 2019. Organic Revenue, which excludes the impact of currency movements and acquisitions, increased very strongly for Game Development, up 36.4% compared to 2018.

During the year we grew the number of people in our Game Development service line by over 80% to c.900 at the end of the year, employing an average of 792 production focused people in 2019 (2018: 494).

COVID-19 update and mitigation measures

All of our Game Development studios are working from home in response to the pandemic. This is allowing us to continue to service our customer needs through the COVID-19 disruption and while demand remains high, we are likely to be constrained by a reduced ability to recruit.

The market opportunity and medium-term outlook

Game Development is our largest addressable market, which we estimate to be valued at well in excess of $3bn, with just c.20% of game development services across the industry currently outsourced, meaning it has the lowest proportion of services outsourced of all of the Group's service market segments. Service provision is also highly fragmented, with well over 50 service providers addressing this segment.

We made our final delivery under an underperforming fixed price contract in December 2019. Without this drag factor, and with the benefit of the new studios in Leamington Spa, UK, in Singapore and in Austin, Texas (all of which we have opened in the last 4 months), we are well placed to meet the continued demand for our services, subject to any further COVID-19 related impacts.

Audio (12.4% of Group revenue for the year)

Our Audio service line provides multi language voice-over, original language voice recording, music, sound design, accessibility and related services.

2019 performance

Audio revenues rose by 18.4% in the period to €40.5m (2018: €34.2m), with the benefit of full year contributions from the 2018 acquisitions of Cord, Laced, Blindlight and Maximal and contributions from Descriptive Video Works and TV+SYNCHRON in 2019, whilst Syllabes was acquired at the very end of 2019. Organic Revenue, which excludes the impact of currency movements and acquisitions, increased by 2.3% compared to 2018.

Our audio services businesses are primarily aligned with the release of AAA video games. 2019 was a relatively light year for these games and this, coupled with the effect of the transition to new Xbox and PlayStation consoles in 2020, meant some developers and publishers reconsidered their release plans which held back our growth.

During the year we grew the average number of service delivery staff in our Audio Services business by 18.9% to 220 (2018: 185).

We were delighted that our relatively new audio production facility in London's Covent Garden, Liquid Violet, and our Burbank, Los Angeles voice production facility were granted Netflix preferred vendor status in 2019 alongside that of Vancouver based Descriptive Video Works.

COVID-19 update and mitigation measures

We are experiencing some short-term disruption as a result of the temporary closure of most of our recording studio facilities in response to local government isolation measures. We are in the process of implementing remote recording capabilities to allow some limited voice-over recording from actors' homes.

Our current expectation is that this will reduce our recording capability in the short-term, but we would hope that higher levels of utilisation within those studios as we catch up with delayed productions, will enable us to offset some of the impact of the delays.

The market opportunity and medium-term outlook

We estimate the market for video games' audio localization services alone to be valued at c.$150m and to be approximately 90% outsourced. However, service provision in this segment remains highly fragmented, with over 50 service providers, so we expect to be able to continue to grow our market share as well as make acquisitions over time. We have not yet sized the market for the original language recording, music and sound effects/design segments.

Assuming the environment becomes more normalised following near-term COVID-19 disruption, our Audio service line should benefit from a better second half of 2020 for AAA game releases, to coincide with the anticipated new console launches from Microsoft and Sony.

Functional Testing (21.1% of Group revenue for the year)

In 2019, Functional Testing grew to become our largest service line and provides quality assurance including the discovery and documentation of game defects; testing to ensure games are compatible with the various hardware devices and configurations they are played on; and testing to verify that games comply with console manufacturers' specifications.

2019 performance

Functional Testing revenues increased by 44.1% to €68.9m (2018: €47.8m). Organic Revenue, which excludes the impact of currency movements and acquisitions, increased by 37.0%. This growth followed the consolidation we effected with the acquisition of VMC in late 2017, and the subsequent integration efforts and investments made in 2018 through to 2019, as our Functional Testing operations reached the scale necessary to become the "go to "provider in North America.

During the year, the average number of production staff in Functional Testing was 2,316 (2018: 1,170), many of which are flexibly resourced positions to enable us to scale up and down with the demands of the projects.

COVID-19 update and mitigation measures

Functional Testing has largely depended on being able to conduct its work from secure facilities, and as such, our testing operations are most at risk from the shutdowns imposed by local authorities. We have so far moved over 1,500 people to work from home arrangements and are continuing to consult on a client by client basis to move to a working from home model allowing us to maintain testing for these remaining clients through the crisis. This is resulting in some delays to certain projects and, where appropriate, staff have been moved on to government supported furlough arrangements until agreements can be reached with our clients.

The market opportunity and medium-term outlook

The addressable market for Functional Testing is estimated by us to be valued at over $800m, with just c.40% of services currently outsourced. Whilst this is a less fragmented market, with approximately 10 or more service providers, we are a leading player in this segment for which the scale and flexibility of a larger player is important to customers. The market continues to grow as games companies become ever more focussed on the quality of the increasing volumes of content in their games.

Beyond the potential near-term disruption described above, we expect Functional Testing to continue to grow strongly as it benefits from the trend to outsourcing in the industry and to see some operational leverage from the investments in growth made in 2019.

Localization (14.9% of Group revenue for the year)

Our Localization service line provides translation of in-game text, audio scripts, cultural and local adaptation, packaging and marketing materials. We have also recently added neural machine translation technology and a global crowd sourcing translation platform, through the acquisition of Kantan.

2019 performance

Despite making up for the annualised effect of certain former customers entering insolvency processes in 2018, primarily due to the ‘Fortnite effect’, Localization revenues grew by 10.2% to €48.5m (2018: €44.0m). Organic Revenue, which excludes the impact of currency movements and acquisitions, has grown by 7.5% as this service line continues to benefit from the trend towards continuous content generation for games in live operation, albeit it was held back in 2019 in the lead up to the transition to new consoles, as in the case of Audio Services.

Our Localization business makes effective use of a large pool of freelance translators built up and nurtured over many years while maintaining a permanent production base, with an average of 381 operational staff during the year (2018: 334) which includes new and expanded teams dedicated to certain customers.

COVID-19 update and mitigation measures

All project management and support staff are now working from home as are our in-house language leads, localisation engineers and client dedicated teams. With the majority of our Localization service already managed through a global network of freelancers working from home this service line was quick to migrate to a full work from home model and no material impact on delivery capabilities is currently expected.

The market opportunity and medium-term outlook

We estimate that the market for localization for video games is valued at c.$200m, of which c.85% is currently outsourced but that service provision remains highly fragmented, with over 50 providers most of which are single language providers and don't have the scale to deliver simultaneous multi-jurisdictional localization projects for our global video games customer base.

We expect Localization to continue to build on its leading market position as it increasingly differentiates itself by combining proprietary software tools like XLoc, and recently acquired AI and Machine Learning technology from Kantan, with its market leading expertise in games localization built up over the past 20 years.

Localization Testing (6.9% of Group revenue for the year)

Our Localization Testing service line identifies out of context translations, truncations, overlaps, spelling, grammar, age-rating and cultural issues and tests for console manufacturer compliance requirements in over 30 languages using native speakers.

2019 performance

Although held back by the transition to the new generation of consoles due out in late 2020 and evidenced by the light release of AAA games in 2019, Localization Testing revenue increased by 14.7% to €22.6m (2018: €19.7m). On an organic basis, which also excludes the impact of currency movements, Localization Testing was 11.2% higher compared to 2018.

During the year in which we opened new Localization Testing operations in Katowice, the average number of production focused staff in Localization Testing was 532 (2018: 446), of which many are flexibly resourced positions to enable us to scale up and down with the demands of the projects.

COVID-19 update and mitigation measures

As in the case of Functional Testing, Localization Testing largely depends on staff being able to conduct their work from secure facilities, so is more exposed to shutdowns imposed by local authorities. We are consulting on a client by client basis to move to a working from home model allowing us to maintain testing through the crisis. This is resulting in some delays to certain projects and, where supported by government initiatives, some staff have been moved on to furlough arrangements until agreement can be reached with our clients.

The market opportunity and medium-term outlook

We estimate the video games market for localization testing to be valued at c.$150m, which is approximately 70% outsourced. Whilst this is a less fragmented market, with roughly 10 service providers, we are the leading player in this segment for which scale, breadth of languages, and the agility of a larger player is critical to customers.

Beyond the potential near-term disruption described above, we would expect Localization Testing to benefit from a stronger second half for AAA game releases as a result of the anticipated new console launches from Microsoft and Sony, and also from our expanded operations in Katowice, Poland and Ottawa, Canada.

Player Support (11.1% of Group revenue for the year)

Our Player Support service line provides multi-lingual, cost effective and flexible customer care services including managing communities of gamers across all forms of social media, within the games themselves and on the official game forums.

2019 performance

As previously stated, Player Support has been consolidating the extremely strong growth of 2018 when it grew more than threefold, by investing in management talent and expanded facilities as its revenue increased marginally to €36.1m (2018: €35.9m). Organic revenues, which are on a constant currency basis, were down by 4.7% on the very strong comparative.

During the year, the average number of service delivery people in Player Support was 1,343 (2018: 1,113). Manila has grown to be our single largest location for Player Support with our newer locations of Katowice and Mexico City showing promise.

COVID-19 update and mitigation measures

All of our Player Support teams around the world are now working from home as we have been able to agree to do so with our clients over the past few weeks. This service line is benefitting from increased video game playing since isolation measures have been in place, with a resulting increase in demand for its support.

The market opportunity and medium-term outlook

Player Support operates in a large market, of which we estimate the value of video game support at c$1.2bn. Around 50% of this is currently outsourced and the market has been dominated by large, generalist customer support providers.

We continue to aim to differentiate ourselves from these large customer support providers through our specialist video games expertise, extending our services to cover more 'touch points' of gamer engagement, and developing our technological tools, in order to make further progress in this market.

COVID-19

Trading in 2020 started in line with our expectations, with only minimal impact from COVID-19 due principally to the short-term disruption in China that affected our five studios there. These operations have now returned to near full production, following the return to work after the government mandated shutdowns and our subsequent implementation of social distancing and rigorous hygiene regimes in the studios, as well as some work from home measures.

However, since then, severe restrictions have been put in place elsewhere requiring most of our studios to be temporarily closed. Our first priority during this period has been the wellbeing of our people and we are following the health and safety recommendations of the local and national authorities in the 21 countries in which we have operations.

As a business with robust operations and an inbuilt culture of flexibility and a "can do" attitude, all 59 studios have reacted extremely quickly supported by our global and regional HR and IT teams to move over 5,500 of our people to work from home arrangements. Whilst this resulted in some short-term disruption, we are pleased with how quickly our teams are settling into these new patterns of work.

In consultation with our clients, we are continuing to make preparations to move more of our production staff to this model, particularly in testing where we are working closely with our clients with the aim of increasing the numbers of testers we can deploy in work from home arrangements.

We are seeing an increase in the demand for certain services, as existing and new clients look to us for support during this challenging time and as they look to enhance the resilience of their production arrangements. We are making efforts to satisfy their requests subject to our own near-term resource constraints, as we prioritise the wellbeing of our people, albeit it does look likely that demand will outstrip our ability to fulfill it in the near-term.

It is very difficult to predict how long the studio closures will be in place and whilst we do expect some disruption to the provision of our services due to the COVID-19 pandemic, we are doing all that we can to mitigate the short-term disruptions to production. We anticipate the underlying drivers of growth across the video games market to remain intact, and we hope to benefit from pent up demand from our clients once our operating environment normalizes.

Medium term outlook

Beyond the immediate disruption caused by COVID-19, we expect strong demand for our services to result from the launch of a new generation of games consoles, the further development of new streaming platforms, and content demands for virtual and augmented reality, in addition to the underlying drivers of growth across the video games market.

Our investment in expanding and diversifying the business, improving our technology, strengthening our management team, and extending our functional support, has positioned us as the provider of choice.

This investment will enable us to continue to deliver high levels of growth in the medium term, in a market that was already seeing an accelerating trend towards outsourcing and could see an even greater shift to outsourcing in response to the COVID-19 outbreak, as clients seek to enhance the resilience of their production arrangements for the long term.

Whilst that investment held back margins in 2019 and the COVID-19 disruption will place further pressure on margins in 2020, we expect to see margins increase incrementally towards our historic norms as we leverage the investments over a growing revenue base in 2021.

Our recently enlarged banking facility provides the Group with the balance sheet strength to meet its short-term liquidity needs and over medium term capitalise on our clear opportunity to take a leading share of the increasingly outsourced video games services market both organically and via acquisitions, as we further enhance shareholder value. We continue to maintain and build upon our strong pipeline of acquisitions with the intent of executing on selected opportunities as the market normalises again post COVID-19. We anticipate that the current crisis may give rise to further acquisition opportunities which, as the market leader, we will be well placed to execute.

Thanks to the robustness of the Group's model, the growth characteristics of our end markets and the strength of our market position, the Board is confident of being well positioned for growth and the long-term success of the business.

Andrew Day
Group Chief Executive Officer

Financial and Operating Review

Strong organic growth and investment in the platform

Group performance

2019 has seen the Group deliver another year of significant increases in revenue driven by strong organic growth supplemented by targeted acquisitions which have further extended the Group's service offering, market penetration and geographic reach.

Revenue

Revenue for 2019 increased by 30.2% to €326.5m (2018: €250.8m). This was driven by strong Organic Revenue growth of 15.5% with particularly good performances in Game Development and Functional Testing which delivered organic growth of 36.4% and 37.0% respectively and represented an acceleration of the strong growth experienced in the first half of the year. The organic growth was supplemented by the full year impact of the acquisitions made in 2018 and 8 targeted acquisitions in 2019 to further build our platform as the 'go to' service provider to the video games industry.

Gross margin

Gross profit for the year was €120.2m (2018: €95.8m) representing an increase of 25.5%. The gross profit margin declined by 1.4 percentage points to 36.8% (2018: 38.2%) reflecting the investments made to support the growth in the business, including the costs associated with the rapid recruitment and increase in staff training in the Functional Testing service line. This combined with the dilutive impact of an underperforming fixed price contract which was completed at the end of 2019 and is therefore not expected to impact as we move into 2020. We have also continued to invest in a number of early stage technology businesses which are not yet generating revenue and have therefore negatively impacted on margins in the year.

Operating costs

Adjusted operating costs exclude depreciation, amortisation, share option expenses and one-time costs related to acquisitions. For 2019, adjusted operating costs increased by 20.4% to €62.6m compared with €52.0m for 2018. On a pre IFRS 16 basis, adjusted operating costs were €70.7m, representing 21.7% of revenue, an increase of 1.0%pts compared to 2018 and above our medium-term target of ~20%. This was driven by investments during the year to expand our facilities to accommodate the strong growth as well as in our operational capability with strengthened management, support functions and infrastructure to support the Group's ongoing growth.

EBITDA

Adjusted EBITDA, which adjusts for the items noted above, increased 31.7% to €57.6m compared with €43.7m for 2018. Of the increase, €8.1m relates to the adoption of IFRS 16. Excluding the impact of IFRS 16, adjusted EBITDA increased 13.2% to €49.5m compared with €43.7m for 2018 resulting in a decline in Adjusted EBITDA margin (pre IFRS 16) of 2.2%pts to 15.2% (2018: 17.4%) reflecting the reduction in gross margin and the investments noted above.

Net finance costs

Net finance costs increased to €4.2m compared to €0.5m in 2018. €1.7m relates to net foreign exchange loss recorded within financing cost which is described in more detail below (2018: €0.8m gain) and €0.7m of the increase represents the additional interest recognised as a result of the adoption of IFRS 16. Underlying interest costs (excluding IFRS 16 interest, deferred consideration discount unwind and foreign exchange) increased by €0.4m to €0.9m (2018: €0.5m) reflecting an increase in net debt of €17.5m to €17.9m at the end of 2019 (2018: €0.4m).

Alternative performance measures

The group reports certain Alternative performance measures (APMs) to present the financial performance of the business which are not GAAP measures as defined by IFRS. Management believes these measures provide valuable additional information for the users of the financial information to understand the underlying trading performance of the business. In particular, adjusted profit measures are used to provide the users of the accounts a clear understanding of the underlying profitability of the business over time. A breakdown of the adjusting factors is provided in the table below:

	Years ended 31 December	
	2019	**2018**
	€m	€m
Share option expense	9.8	4.1
Costs of acquisition and integration	4.3	5.3
Amortisation of intangible assets	7.3	6.9
Foreign exchange and other items	2.1	(0.5)
	23.5	**15.8**

2m options were granted under the Share Option scheme and Long Term Incentive Plan in 2019. This, together with grants from previous years, has resulted in a non-cash share option expense of €9.8m in 2019 (2018: €4.1m). The increase is largely due to an increase in the fair value charge (see Note 17) for the shares granted in May and September 2019 compared to previous years.

One-off costs associated with the acquisition and integration of businesses of €4.3m were incurred in the period (2018: €5.3m). This relates to both the integration costs of acquisitions made in the prior year and the acquisition and integration costs of the 8 acquisitions made in 2019.

Amortisation of intangible assets amounting to €7.3m was broadly in line with 2018 (2018: €6.9m). Foreign exchange and other items amounted to a net charge of €2.1m (2018: net gain of €0.5m).

Keywords does not hedge foreign currency profit and loss translation exposures. The effect on the Group's results of movements in exchange rates and the foreign exchange gains and losses incurred during the year mainly relate to the effect of translating net current assets held in foreign currencies. This resulted in a net foreign exchange loss of €1.7m in 2019, recorded within financing cost (2018: €0.8m gain).

A more detailed explanation of the measures used together with a reconciliation to the corresponding GAAP measures is provided in the APMs section at the end of the statement.

Profit before taxation

Profit before tax for the year was €17.4m (2018: €22.1m). Adjusted Profit Before Tax, which adds back acquisition and integration expenses, share option charges, foreign currency exchange movements and amortisation of intangibles (as noted above) increased by 7.9% to €40.9m compared with €37.9m in 2018 representing a reduction in net margin of 2.6%pts to 12.5% (2018 15.1%).

Taxation

The tax charge in the period was €7.5m including a one off €0.5m tax charge relating to a legacy pre acquisition tax issue (2018: €7.2m). This represents a reduction in the Adjusted Effective Tax Rate to 22.4% of Adjusted Profit Before Tax (2018: 22.8%, as re-stated to reflect the tax impact of the bridging items to Adjusted profit before tax).

Tax governance

The Group takes a balanced approach to the management of its tax affairs and has a tax policy which is approved by the Board. Our overall strategy is to meet our tax obligations and ensure that long term shareholder returns are responsibly optimised by structuring our business and transactions in a tax efficient manner, taking into account reputational factors. Tax risks are regularly reviewed by the Board and the Audit Committee. The Group's approach in relation to the management of tax issues is to ensure that:

- We comply with all applicable laws, disclosure requirements and regulations in the territories in which we do business;
- All tax positions adopted are adequately and fairly disclosed in tax filings;
- We have an open and transparent working relationship with relevant tax authorities around the world;
- Where disputes arise with tax authorities, we seek to reach a resolution as soon as possible in an open and constructive manner;
- Where considered appropriate, the Group takes advice from professional firms;
- Tax risks are appropriately managed in accordance with the tax policy; and
- Our tax planning is aligned with the Group's commercial and business activities and the tax treatment of business transactions is optimised.

Basic earnings per share

Basic earnings per share were down 34.2% to 15.23c (2018: 23.16c) reflecting the reduction in the statutory profit after tax and a 1.2% increase in the weighted number of shares in issue. The denominator used for these calculations includes the shares which will be issued for the outstanding deferred consideration for acquisitions (see Note 16).

Adjusted earnings per share which adjusts for certain items, including acquisition and integration expenses, share option charges, foreign currency exchange gains/losses and amortisation of intangibles was 48.78c an increase of 7.2% over the prior year (2018: 45.50c). Adjusted for the impact of IFRS 16, adjusted earnings per share was 49.44c representing an increase of 8.7%.

Acquisitions

During the year the Group acquired 8 businesses generating annualised revenues in the year of acquisition of €13.2m. Total potential consideration amounted to €19.6m of which €4.0m will be satisfied through the issue of shares. Cash spend on these acquisitions amounted to €13.1m (net of cash acquired). As at the end of 2019 there was €6m of deferred and contingent consideration payable in 2020 in respect of completed acquisitions.

Going forward we will continue to execute our targeted and disciplined approach to M&A to build out our global services platform to enhance further our position as the 'go to' provider for development services to the video games industry.

IFRS 16 - Leases

The new leasing standard, IFRS 16, has been effective from 1 January 2019 and has been adopted from that date with no restatement of prior year comparatives required. This has resulted in a number of leases (largely property leases) that were previously accounted for as operating leases (expensed as incurred) now being capitalised as Right of Use (ROU) Assets within fixed assets and depreciated over the lease term with a corresponding lease liability and interest charge. The new standard has not had a material impact on either Adjusted profit before tax or the underlying net cash flows of the business, but it has changed the presentation of the profit and loss account, the cash flow statement and the balance sheet as follows:

- On transition, fixed assets increased by €23.1m;
- The operating lease charge of €8.1m has been replaced with depreciation on the ROU assets of €7.8m and an interest charge on the corresponding lease liability of €0.7m;
- In 2019 this has increased EBITDA by €8.1m and resulted in a reduction in Adjusted profit before tax of €0.4m.

Cash flow and net debt

Cash flow statement	2018	Change

	2019 €m	€m	€m
Adjusted EBITDA pre IFRS 16	**49.5**	**43.7**	**5.8**
MMTC and VGTR	(5.9)	(0.4)	(5.5)
Working capital and other items	(1.7)	(4.9)	3.2
Capex - property, plant and equipment (PPE)	(13.1)	(9.4)	(3.7)
Capex - intangible assets	(0.4)	(1.6)	1.2
Operating cash flows	**28.4**	**27.4**	**1.0**
Interest paid	(1.4)	(0.5)	(0.9)
Free cash flow before tax	**27.0**	**26.9**	**0.1**
Tax	(13.3)	(6.3)	(7.0)
Free cash flow	**13.7**	**20.6**	**(6.9)**
M&A - acquisition spend	(27.8)	(26.7)	(1.1)
M&A – acquisition and integration costs	(3.8)	(4.5)	0.7
Dividends paid	(1.2)	(1.1)	(0.1)
Shares issue for cash	0.8	0.2	0.6
Underlying increase in net debt	**(18.3)**	**(11.5)**	**(6.8)**
FX and other items	0.8	-	0.8
Increase in net debt	**(17.5)**	**(11.5)**	**(6.0)**
Opening net cash / (debt)	(0.4)	11.1	
Closing net cash / (debt)	**(17.9)**	**(0.4)**	

The Group generated Adjusted EBITDA of €49.5m in 2019, an increase of €5.8m from €43.7m in 2018. This was offset by an increase of €5.5m in the amounts due in respect of multi-media tax credits (MMTC) and Video Games Tax Relief (VGTR). MMTC's that are earned in the year of production, and are collected a year in arrears. The increase is therefore a timing difference driven primarily by the growth in revenue in the Functional Testing business in Canada and the Game Development business in the UK, where the credits are earned. This was partially offset by an improvement in Working capital and other items of €3.2m.

Investment in PPE amounted to €13.1m (2018: €9.4m) reflecting the growth in the business, the expansion of facilities in Montreal, Katowice, Manila, Brighton, Tokyo, São Paulo and New Delhi and continued investment in the IT systems and infrastructure to support the Group platform.

Interest payments were €1.4m in the year (2018: €0.5m), which reflected the increase in net debt and the fees associated with the refinancing of the Group's Revolving Credit Facility. Tax payments amounted to €13.3m and included €2.5m in respect of the settlement of a prior tax balance of which €2m was accrued at the end of 2018.

This resulted in Free Cash Flow of €13.7m, a reduction of €6.9m on the prior year. Adjusted Cash conversion rate (which adjusts for capital expenditure that is supporting growth in future periods) was 79% (2018: 82%).

Cash spent on acquisitions totalled €27.8m including €14.7m of deferred consideration in respect of prior year acquisitions. In addition, acquisition and integration costs amounted to €3.8m and dividend payments amounted to €1.2m resulting in an underlying increase in net debt of €18.3m (2018: €11.5m). This, together with foreign exchange and other items, resulted in a closing net debt of €17.9m (2018: €0.4m).

Balance sheet and liquidity

The Group funds itself primarily through cash generation and a syndicated revolving credit facility (RCF). In October 2019, the Group successfully agreed a new RCF provided by Barclays Bank plc, Citibank N.A., HSBC and Silicon Valley Bank, for an initial €100m, with an Accordion option to increase this up to €140m. The RCF matures in October 2022 with an option to extend it for up to a further 2 years.

The Keywords Group had €59.5m drawn under the RCF at year-end 2019. The majority of Group borrowings are subject to two financial covenants that are calculated in accordance with the facility agreement:

- Leverage: Maximum Total Net Borrowings to Adjusted EBITDA ratio of 3 times; and
- Interest cover: Minimum Adjusted Operating Profit to Net Finance Costs ratio of 4 times.

The Group exited 2019 with a strong balance sheet, with net debt (excluding IFRS 16 leases) of €17.9m as at 31 December 2019 representing a net debt to Adjusted EBITDA ratio of 0.4x. The Group has good liquidity with cash and undrawn committed facilities of around €82m at the end of December 2019. In addition, as a precautionary measure we are in the final stages of agreeing the exercise of the accordion feature under the RCF which would provide a further €30m of committed facilities.

The Group has a resilient operating model and the ability to flex the cost base to meet the potential disruption introduced as a result COVID-19 pandemic, particularly in the Localization, Testing and Audio service lines which have higher a proportion of variable costs to the other service lines. Given the current environment, the Group has taken steps to preserve cash by increasing the focus on costs, eliminating discretionary expenditure and delaying certain capital projects.

Dividend

Despite the Group's resilient financial position and the modest size of the dividend, the Board believes it would be inappropriate to recommend a final dividend in the current circumstances.

Jon Hauck
Chief Financial Officer

Consolidated Statement of Comprehensive Income

		Years ended 31 December	
		2019	2018
		€'000	€'000
Revenue from contracts with customers	4	**326,463**	250,805
Cost of sales	5	**(206,234)**	(154,997)
Gross profit		**120,229**	95,808
Share option expense	17	**(9,775)**	(4,129)
Costs of acquisition and integration	5	**(4,348)**	(5,296)
Amortisation of intangible assets	12	**(7,318)**	(6,872)
Total of items excluded from adjusted profit measures		**(21,441)**	(16,297)
Other administration expenses		**(77,246)**	(56,826)
Administrative expenses		**(98,687)**	(73,123)
Operating profit		**21,542**	22,685
Financing income	6	**74**	791
Financing cost	6	**(4,245)**	(1,316)
Share of post-tax profit / (loss) of equity accounted associate	27	-	(66)
Profit before taxation		**17,371**	22,094
Taxation	7	**(7,462)**	(7,191)
Profit		**9,909**	14,903

Other comprehensive income:			
Items that will not be reclassified subsequently to profit or loss			
Actuarial gain / (loss) on defined benefit plans	19	**(167)**	27
Items that may be reclassified subsequently to profit or loss			
Exchange gain / (loss) in net investment in foreign operations		**1,267**	1,270
Exchange gain / (loss) on translation of foreign operations		**5,960**	771
Total comprehensive income		**16,969**	16,971
Profit / (loss) for the period attributable to:			
Owners of the parent		**10,022**	14,903
Non-controlling interest		**(113)**	-
		9,909	14,903
Total comprehensive income attributable to:			
Owners of the parent		**17,082**	16,971
Non-controlling interest		**(113)**	-
		16,969	16,971
Earnings per share		**€ cent**	€ cent
Basic earnings per ordinary share	8	**15.23**	23.16
Diluted earnings per ordinary share	8	**14.73**	22.24

The notes form an integral part of these consolidated financial statements.

On behalf of the Board

Andrew Day
Director
16 April 2020

Jon Hauck
Director

Consolidated Statement of Financial Position

		At 31 December	
		2019	2018
	Note	**€'000**	€'000
Non-current assets			
Property, plant and equipment	13	**22,163**	15,002
Right of use assets	24	**21,469**	-
Goodwill	11	**175,639**	154,202
Intangible assets	12	**21,130**	25,884
Investment in associate	27	**-**	160
Deferred tax assets	26	**5,060**	2,967
		245,461	198,215
Current assets			
Trade receivables	14	**43,243**	37,019
Other receivables	15	**35,413**	23,459
Cash and cash equivalents		**41,827**	39,871
		120,483	100,349
Total assets		**365,944**	298,564
Equity			
Share capital	16	**780**	763
Share capital - to be issued	16	**5,310**	15,648
Share premium	16	**102,979**	102,225
Merger reserve	16	**50,451**	35,996
Foreign exchange reserve		**5,764**	(1,463)

Shares held in Employee Benefit Trust ("EBT")	16	**(1,997)**	(1,997)
Share option reserve		**16,449**	6,674
Retained earnings		**43,187**	34,529
		222,923	192,375
Non-controlling interest		**35**	-
Total equity		**222,958**	192,375
Current liabilities			
Trade payables		**8,027**	7,142
Other payables	18	**38,712**	41,153
Loans and borrowings	20	**80**	40,071
Corporation tax liabilities		**2,732**	6,665
Lease liabilities	24	**7,741**	-
		57,292	95,031
Non-current liabilities			
Other payables	18	**285**	1,062
Employee defined benefit plans	19	**2,049**	1,378
Loans and borrowings	20	**59,671**	230
Deferred tax liabilities	26	**9,523**	8,488
Lease liabilities	24	**14,166**	-
		85,694	11,158
Total equity and liabilities		**365,944**	298,564

The notes form an integral part of these consolidated financial statements. The financial statements were approved and authorised for issue by the Board on 16 April 2020.

On behalf of the Board

Andrew Day Director 16 April 2020	Jon Hauck Director

Consolidated Statement of Changes in Equity

	Share capital	Share capital - to be issued	Share premium	Merger reserve	Foreign exchange reserve	Shares held in EBT	Share option reserve	Retained earnings	Total attributable to owners of parent	Non-controlling interest	Total equity
	€'000	€'000	€'000	€'000	€'000	€'000	€'000	€'000	€'000	€'000	€'000
At 1 January 2018	**737**	**11,620**	**102,054**	**28,878**	**(3,504)**	**(1,997)**	**2,545**	**20,679**	**161,012**	**-**	**161,012**
Profit for the period	-	-	-	-	-	-	-	14,903	14,903	-	14,903
Other comprehensive income	-	-	-	-	2,041	-	-	27	2,068	-	2,068
Total comprehensive income for the period	-	-	-	-	2,041	-	-	14,930	16,971	-	16,971
Contributions by and contributions to the owners:											
Share option expense	-	-	-	-	-	-	4,129	-	4,129	-	4,129
Share options exercised	3	-	171	-	-	-	-	-	174	-	174
Dividends (note 9)	-	-	-	-	-	-	-	(1,080)	(1,080)	-	(1,080)
Acquisition related issuance of shares (note 16)	23	4,028	-	7,118	-	-	-	-	11,169	-	11,169
Contributions by and contributions to the owners	26	4,028	171	7,118	-	-	4,129	(1,080)	14,392	-	14,392
At 31 December 2018	**763**	**15,648**	**102,225**	**35,996**	**(1,463)**	**(1,997)**	**6,674**	**34,529**	**192,375**	**-**	**192,375**
Profit for the period	-	-	-	-	-	-	-	10,022	10,022	(113)	9,909
Other comprehensive income	-	-	-	-	7,227	-	-	(167)	7,060	-	7,060
Total comprehensive income for the period	-	-	-	-	7,227	-	-	9,855	17,082	(113)	16,969
Contributions by and contributions to the owners:											

Share option expense	-	-	-	-	-	-	9,775	-	9,775	-	9,775
Share options exercised	7	-	754	-	-	-	-	-	761	-	761
Dividends (note 9)	-	-	-	-	-	-	-	(1,197)	(1,197)	-	(1,197)
Acquisition related issuance of shares (note 16)	10	(10,338)	-	14,455	-	-	-	-	4,127	-	4,127
Net assets on acquisition of AppSecTest	-	-	-	-	-	-	-	-	-	148	148
Contributions by and contributions to the owners	17	(10,338)	754	14,455	-	-	9,775	(1,197)	13,466	148	13,614
At 31 December 2019	**780**	**5,310**	**102,979**	**50,451**	**5,764**	**(1,997)**	**16,449**	**43,187**	**222,923**	**35**	**222,958**

Consolidated Statement of Cash Flows

	Note	Years ended 31 December 2019 €'000	2018* Restated €'000
Cash flows from operating activities			
Profit after tax		**9,909**	14,903
Income and expenses not affecting operating cash flows			
Depreciation - property, plant and equipment	13	**7,295**	5,316
Depreciation - right of use assets	24	**7,849**	-
Amortisation of intangible assets	12	**7,318**	6,872
Taxation	7	**7,462**	7,191
Share option expense	17	**9,775**	4,129
Fair value adjustments to contingent consideration	5	**493**	766
Disposal of property, plant and equipment	13	**200**	63
Unwinding of discounted liabilities - deferred consideration	6	**330**	311
Unwinding of discounted liabilities - lease liabilities	6	**694**	-
Share of post-tax (profit) / loss of equity accounted associate	27	**-**	66
Interest receivable	6	**(74)**	-
Fair value adjustments to employee defined benefit plans	19	**504**	279
Interest expense	6	**934**	502
Unrealised foreign exchange (gain) / loss		**(577)**	(992)
		42,203	24,503
Changes in operating assets and liabilities			
Decrease / (increase) in trade receivables		**(4,370)**	(7,680)
Decrease / (increase) in MMTC and VGTC receivable		**(5,913)**	(370)
Decrease / (increase) in other receivables		**(2,162)**	2,850
(Decrease) / increase in accruals, trade and other payables		**6,402**	(252)
		(6,043)	(5,452)
Taxation		**(13,288)**	(6,304)
Net cash generated by / (used in) operating activities		**32,781**	27,650
Cash flows from investing activities			
Current year acquisition of subsidiaries net of cash acquired	28	**(13,051)**	(24,163)
Prior year acquisition of subsidiaries net of cash acquired		**-**	(726)
Settlement of deferred liabilities on acquisitions	18	**(14,711)**	(1,603)
Investment in associate	27	**-**	(226)
Acquisition of property, plant and equipment	13	**(13,145)**	(9,440)
Investment in intangible assets	12	**(391)**	(1,599)
Interest received		**74**	-
Net cash generated by / (used in) investing activities		**(41,224)**	(37,757)
Cash flows from financing activities			
Repayment of loans	29	**(7,973)**	(10,835)
Payments of principal on lease liabilities		**(7,355)**	-
Interest paid on principal of lease liabilities	6	**(694)**	-
Loan to finance acquisitions	29	**27,000**	31,850
Dividends paid	9	**(1,197)**	(1,080)
Share options exercised	16	**761**	174
Interest paid		**(1,436)**	(502)
Net cash generated by / (used in) financing activities		**9,106**	19,607
Increase / (decrease) in cash and cash equivalents		**663**	9,500
Exchange gain / (loss) on cash and cash equivalents		**1,293**	(3)
Cash and cash equivalents at beginning of the period		**39,871**	30,374
Cash and cash equivalents at end of period		**41,827**	39,871

*The prior year has been restated to re-classify the Acquisition and integration cash outlay to Net cash generated by / (used in) operating activities, as the Directors consider this to be more meaningful.

Notes Forming Part of the Consolidated Financial Statements

1. Basis of Preparation

Keywords Studios PLC (the "Company") is a company incorporated in the UK. The consolidated financial statements include the financial statements of the Company and its subsidiaries (the "Group") made up to 31 December 2019. The Group was formed on 8 July 2013 when Keywords Studios PLC (formerly Keywords Studios Limited) acquired the entire share capital of Keywords International Limited through the issue of 31,901,332 ordinary shares.

The consolidated financial statements have been prepared in accordance with International Financial Reporting Standards, International Accounting Standards and interpretations (collectively IFRS) issued by the International Accounting Standards Board (IASB) as adopted by the European Union ("adopted IFRSs").

The financial statements have been prepared in thousands ('000) and the financial statements are presented in Euro (€) which is the functional currency of the Group.

New Standards, Interpretations and Amendments effective 1 January 2019

The Group has adopted new accounting standards which have become effective 1 January 2019, as follows:

Impact of IFRS 16 Leases

IFRS 16 'Leases' replaces IAS 17 'Leases' along with three Interpretations (IFRIC 4 'Determining whether an Arrangement contains a Lease', SIC 15 'Operating Leases-Incentives' and SIC 27 'Evaluating the Substance of Transactions Involving the Legal Form of a Lease'). The new Standard has been applied using the modified retrospective approach. Prior periods have not been restated.

From 1 January 2019, the Group now recognises a liability to make lease payments (i.e. the lease liability) and an asset representing the right to use the underlying asset during the lease term (i.e. the right of use asset), for all material lease arrangements over 12 months in duration. On transition, for leases previously accounted for as operating leases with a remaining lease term of less than 12 months and for leases of low value assets, the Group has applied the optional exemptions to not recognise right of use assets but to account for the lease expense on a straight-line basis over the remaining lease term. For those leases previously classified as finance leases, the right of use asset and lease liability are measured at the date of initial application at the same amounts as under IAS 17 immediately before the date of initial application. Instead of performing an impairment review on the right of use assets at the date of initial application, the Group has relied on its historic assessment as to whether leases were onerous immediately before the date of initial application of IFRS 16. The impact of the application of IFRS 16 is outlined in note 24.

The following is a reconciliation of operating lease commitments at 31 December 2018 to the lease liabilities recognised at 1 January 2019:

	€m
Total operating lease commitments disclosed at 31 December 2018	**17**
Recognition exemptions:	
Leases of low value assets	-
Leases with remaining lease term of less than 12 months	**(1)**
Lease payments for expected lease renewals extending payments beyond the minimum lease payment period	**8**
	7
Operating lease liabilities before discounting	**24**
Discounted using incremental borrowing rate *	**(1)**
Operating lease liabilities	**23**
Finance lease obligations	-
Total lease liabilities recognised under IFRS 16 at 1 January 2019 (note 24)	**23**

* Weighted average incremental borrowing rate applied to lease liabilities on transition **3.1%**

Impact of IFRIC 23

IFRIC 23 Uncertainty over Income Tax Positions, which was issued in June 2017, clarifies how to recognise and measure current and deferred income tax assets and liabilities when there is uncertainty over income tax treatments.

Other New Standards, Interpretations and Amendments effective 1 January 2019

Other accounting pronouncements which have become effective from 1 January 2019 have not had a material impact on the Group.

2. Significant Accounting Policies

Basis of Consolidation

Where the Company has control over an investee, it is classified as a subsidiary. The Company controls an investee if all three of the following elements are present: power over the investee, exposure to variable returns from the investee, and the ability of the investor to use its power to affect those variable returns. Control is reassessed whenever facts and circumstances indicate that there may be a change in any of these elements of control.

De-facto control exists in situations where the Company has the practical ability to direct the relevant activities of the investee without holding the majority of the voting rights. In determining whether de-facto control exists, the Company considers all relevant facts and circumstances, including:

- The size of the Company's voting rights relative to both the size and dispersion of other parties who hold voting rights;
- Substantive potential voting rights held by the Company and by other parties;
- Other contractual arrangements; and
- Historic patterns in voting attendance.

The consolidated financial statements present the results of the Company and its subsidiaries ("the Group") as if they formed a single entity. Intercompany transactions and balances between Group companies are eliminated in full.

Business Combinations
The consolidated financial statements incorporate the results of business combinations using the purchase method. In the Consolidated Statement of Financial Position, the acquired identifiable assets, liabilities and contingent liabilities are initially recognised at their fair values at the acquisition date. The results of acquired operations are included in the consolidated income statement from the date on which control is obtained. They are consolidated until the date on which control ceases.

Any contingent consideration payable is recognised at fair value at the acquisition date and is split between current liabilities and long-term liabilities depending on when it is due. The fair value of contingent consideration at acquisition date is arrived at through discounting the expected payment (based on scenario modelling) to present value. In general, in order for contingent consideration to become payable, pre-defined profit and / or revenue targets must be exceeded. At each balance sheet date, the fair value of the contingent consideration is revalued, with the expected pay-out determined separately in respect of each individual acquisition and any change recognised in the Statements of Comprehensive Income.

For deferred consideration which is to be provided for by the issue of a fixed number of shares at a future defined date, where there is no obligation on Keywords to offer a variable number of shares, the deferred consideration is classified as an equity arrangement and the value of the shares is fixed at the date of the acquisition.

Equity accounted investments
The Group's investments in its associates are accounted for using the equity method from the date significant influence is deemed to arise until the date on which significant influence / joint control ceases to exist or when the interest becomes classified as an asset held for sale.

Goodwill
Goodwill represents the excess of the cost of a business combination over the total acquisition date fair value of the identifiable assets, liabilities and contingent liabilities acquired.

The cost comprises the fair value of assets given, liabilities assumed and equity instruments issued, plus the amount of any non-controlling interests in the acquiree plus, if the business combination is achieved in stages, the fair value of the existing equity interest in the acquiree. Contingent consideration is included in acquisition date fair value and, in the case of contingent consideration classified as a financial liability, re-measured subsequently through profit or loss. The direct costs of acquisition are recognised immediately as an expense.

Goodwill is capitalised as an intangible asset with any impairment in carrying value being charged to the consolidated statement of comprehensive income.

Intangible Assets
The Group's Intangible Assets comprise Customer Relationships and Other Intangible Assets.

Customer Relationships
Intangible assets, separately identified from goodwill acquired as part of a business combination (mainly Customer Relationships), are initially stated at fair value. The fair value attributed is determined by discounting the expected future cash flows generated from the net margin of the business from the main customers taken on at acquisition. The assets are amortised on a straight-line basis (to administration expenses) over their useful economic lives (typically five years is deemed appropriate, however, this is re-examined for each acquisition).

Other Intangible Assets
Other intangible assets include Intellectual Property and Music Licences, both acquired and internally developed. Other intangible assets are recognised as assets where it is probable that the use of the asset will generate future economic benefits and where the costs of the asset can be determined reliably. Other intangible assets that are acquired by the Group are stated at cost less accumulated amortization (see below) and impairment losses, if any. Subsequent expenditures on capitalised intangible assets are capitalised only when they increase the future economic benefits embodied in the specific assets to which they relate. All other expenditure is expensed as incurred. Other intangible assets with definite useful lives are amortised from the date they are available for use on a straight-line basis over their useful lives, being the estimated period over which the Group will use the assets. Residual amounts, useful lives and the amortization methods are reviewed at the end of every accounting period.

Development costs are capitalised as an intangible asset if all of the following criteria are met:

- the technical feasibility of completing the intangible asset so that it will be available for use or sale;
- the intention to complete the intangible asset and use or sell it;
- the ability to use or sell the intangible asset;
- the asset will generate probable future economic benefits and demonstrate the existence of a market or the usefulness of the intangible asset if it is to be used internally;
- the availability of adequate technical, financial and other resources to complete the development and to use or sell it;
- the ability to measure reliably the expenditure attributable to the intangible asset during its development.

Following initial recognition of the development expenditure as an intangible asset, the cost model is applied requiring the intangible asset to be carried at cost, less any accumulated amortization and accumulated impairment losses. The intangible asset is amortised on a straight-line basis over the period of its expected benefit, starting from the date of full commercial use of the product. During the period of development, the asset is tested for impairment annually. If specific events indicate that impairment of an item of intangible asset may have taken place, the item's recoverability is assessed by comparing its carrying amount with its recoverable amount. The recoverable amount is the higher of the fair value net of disposal costs and the value in use.

Impairment
Impairment tests on goodwill and other intangible assets with indefinite useful economic lives are undertaken annually at the financial year end. Other non-financial assets are subject to impairment tests whenever events or changes in circumstances indicate that their carrying amount may not be recoverable. Where the carrying value of an asset exceeds its recoverable amount (i.e. the higher of value in use and fair value less costs to sell), the asset is written down accordingly.

Where it is not possible to estimate the recoverable amount of an individual asset, the impairment test is carried out on the smallest group of assets to which it belongs for which there are separately identifiable cash flows; its cash generating units ("CGUs"). Goodwill is allocated on initial recognition to each of the Group's CGUs that are expected to benefit from a business combination that gives rise to the goodwill.

The Group has one CGU. This CGU represents the lowest level at which goodwill is monitored by the Group and the lowest level at which management captures information for internal management reporting purposes about the benefits of the goodwill. Impairment charges are included in profit or loss, except to the extent they reverse gains previously recognised in other comprehensive income. An impairment loss recognised for goodwill is not reversed.

Cash and Cash Equivalents
For the purpose of presentation in the Statements of financial position and on the Statements of cash flows, cash and cash equivalents include cash on hand and on call deposits with financial institutions.

Foreign Currency
The Consolidated Financial Statements are presented in Euro, which is the presentation currency of the Group and the functional currency of the Parent Company.

Transactions entered into by Group entities in a currency other than the currency of the primary economic environment in which they operate (their "functional currency") are recorded at the rates ruling when the transactions occur. Foreign currency monetary assets and liabilities are translated at the rates ruling at the reporting date. Exchange differences arising on the retranslation of unsettled monetary assets and liabilities are recognised immediately in profit or loss.

On consolidation, the results of overseas operations are translated into Euro at rates approximating to this ruling when the transactions took place. All assets and liabilities of overseas operations, including goodwill arising on the acquisition of those operations, are translated at the rate ruling at the reporting date. Exchange differences arising on translating the opening net assets at opening rate and the results of overseas operations at actual rate are recognised in other comprehensive income and accumulated in the foreign exchange reserve.

Exchange differences recognised in profit or loss in Group entities' separate financial statements on the translation of long-term items forming part of the Group's net investment in the overseas operation concerned are classified to other comprehensive income and accumulated in the foreign exchange reserve on consolidation. On disposal of a foreign operation, the cumulative exchange differences recognised in the foreign exchange reserve relating to that operation up to the date of disposal are transferred to the consolidated statement of comprehensive income as part of the profit or loss on disposal.

Revenue from Contracts with Customers
Contracts are typically for services, performing agreed-upon tasks for a customer and can be time-and-materials or milestone based. Most contracts are short term in duration (generally less than one month), however milestone based contracts can be longer term and extend to several months (or in some cases over a year). Where there are multiple performance obligations outlined in a contract, each performance obligation is separately assessed, the transaction price is allocated to each obligation, and related revenues are recognised as services or assets are transferred to the customer. Performance obligations are typically satisfied over time, as the majority of contracts meet the criteria outlined in IFRS 15 paragraph 35 (a) and (c).

Revenue is derived from seven main service groupings:

- Art Creation Services – Art creation services relate to the production of graphical art assets for inclusion in the video game including concept art creation along with 2D and 3D art asset production and animation. Contracts can be either time-and-materials based or milestone based, with performance obligations satisfied over time. Contracts are generally short term in duration, however for longer term contracts the input method is used to measure progress. Time and materials based contract revenue is recognised as the related services are rendered. For milestone based contracts where progress can be measured reliably towards complete satisfaction of the performance obligation, revenue is recognised using the input method to measure progress. Where progress cannot be measured reliably, revenue is recognised on milestone acceptance.
- Game Development – Game Development relates to software engineering services which are integrated with client processes to develop video games. Contracts can be either time-and-materials based or milestone based, with performance obligations satisfied over time. Contracts are generally longer term in duration. Time and materials based contract revenue is recognised as the related services are rendered. For milestone based contracts where progress can be measured reliably towards complete satisfaction of the performance obligation, revenue is recognised using the input method to measure progress. Where progress cannot be measured reliably, revenue is recognised on milestone acceptance.
- Audio / Voice-over Services – Audio Services relate to the audio production process for computer games and includes script translation, actor selection and talent management through pre-production, audio direction, recording, and post-production, including native language quality assurance of the recordings. Audio contracts may also involve music licencing or selling music soundtracks. Audio service contracts are typically milestone based, with performance obligations satisfied over time. Audio services contracts are generally short term in duration, however for longer term contracts where progress towards complete satisfaction of the performance obligation can be measured reliably, revenue is recognised using the input method to measure progress. Where progress cannot be measured reliably, audio services revenue is recognised on milestone acceptance. Music licencing and music soundtracks performance obligations are assessed separately, and related revenue is recognised on licence inception and on delivery of the soundtracks, respectively.
- Functional Testing – Functional Testing relates to quality assurance services provided to game producers to ensure games function as required. Contracts are typically time-and-materials based and performance obligations are satisfied over time. Contracts are generally short term in duration, however for longer term contracts the input method is used to measure progress. Revenue is recognised as the related services are rendered.
- Localisation Services – Localisation services relate to translation and cultural adaptation of in-game text and audio scripts across multiple game platforms and genres. Contracts are typically time-and-materials based and performance obligations are satisfied over time. Contracts are generally short term in duration, however for longer contracts the input method is used to measure progress. Localisation contracts may also involve licencing translation software as a service. Such revenue is assessed separately. Revenue is recognised as the related services are rendered.
- Localisation Testing – Localisation Testing involves testing the linguistic correctness and cultural acceptability of computer games. Contracts are typically time-and-materials based and performance obligations are satisfied over time. Contracts are generally short term in duration, however for longer term contracts the input method is used to measure progress. Revenue is recognised as the related services are rendered.
- Player Support – Player support relates to the live operations support services such as community management, player support and associated services provided to producers of games to ensure that consumers have a positive user experience. Contracts are typically time-and-materials based and performance obligations are satisfied over time. Contracts are generally long term with the input method used to measure progress. Revenue is recognised as the related services are rendered.

Due to the nature of the services provided and the competitive nature of the market, contracts generally allocate specific transaction prices to separate performance obligations. Individual services or individual milestones generally involve extensive commercial negotiation to arrive at the specific agreed-upon tasks, and the related pricing outlined in the contract. Such negotiations extend further for milestone based contracts to also include the criteria involved in the periodic and regular process of milestone acceptance by the customer. Such criteria may involve qualitative, as well as quantitative measures and judgements.

In measuring progress towards complete satisfaction of performance obligations, the input method is considered to be the most appropriate method to depict the underlying nature of the contracts with customers, the interactive way the service is delivered and projects are managed with the customer. For time-and-materials contracts, other than tracking and valuing time expended, significant judgement is not normally involved. For milestone based contracts, progress is generally measured based on the proportion of contract costs incurred at the balance sheet date, (e.g. worked days) relative to the total estimated costs of the contract, involving estimates of the cost to completion etc. Added to this significant judgement can be involved in measuring progress towards customer acceptance of the milestone. Significant judgement may also be involved where circumstances arise that may change the original estimates of revenues, costs or extent of progress towards complete satisfaction of the performance obligations. In such circumstances estimates are revised. These revisions may result in increases or decreases in revenue or costs and are reflected in income in the period in which the circumstances that give rise to the revision became known. When the outcome of a contract cannot be measured reliably, contract revenue is recognised only to the extent that milestone have been accepted by the customer. Contract costs are recognised as incurred. When it is probable that total contract costs will exceed total contract revenue, the expected loss is recognised immediately.

Revenue recognised represents the consideration received or receivable, net of sales taxes, rebates discounts and after eliminating intercompany sales. Revenue is recognised only where it is probable that consideration will be received. Where consideration is received and the related revenue has not been recognised, the consideration received is recognised as a contract liability (Deferred Revenue), until either revenue is recognised or the consideration is refunded.

Multimedia Tax Credits / Video Game Tax Relief
The multimedia tax credits ("MMTC") received in Canada and video games tax relief ("VGTR") in the UK, are a credit related to staff costs. Tax credits are recognised in the year they are earned as a deduction against direct costs but typically paid in the following financial year once the claims have been submitted and agreed. The nature of the grants is such that they are not dependent on taxable profits. Tax credits have only been recognised where management believes that a tax credit will be recoverable based on their experience and the success of similar historical claims.

Share-based Payments
The Company issues equity settled share-based payments to certain employees and Directors under a share options plan and a Long Term Incentive Plan ("LTIP").

The fair value determined at the grant date is expensed on a straight-line basis over the vesting period, based on the Company's estimate of shares that will eventually vest. Grants do not have non-market-based vesting conditions. At each reporting date, the Company revises its estimate of the number of equity instruments expected to vest and the impact of the revision of the original estimates, if any, is recognised in profit or loss such that the cumulative expense reflects the revised estimate, with a corresponding adjustment to equity reserves. The Company has no legal or constructive obligation to repurchase or settle the options in cash.

Where share-based payments are issued to employees of subsidiary companies, the annual cost of the option is expensed in the holding company and recharged to the subsidiary company through an inter-company charge.

Share Option Plan
These are measured at fair value on the grant date using a Black-Scholes option pricing model which calculates the fair value of an option by using the vesting period, the expected volatility of the share price, the current share price, the exercise price and the risk-free interest rate. The fair value of the option is amortised over the vesting period, with one-third of the options vesting after two years, one-third after three years, and the balance vest after four years. The only vesting condition is continuous service. There is no requirement to revalue the option at any subsequent date.

LTIP
The exercise of LTIP awards are subject to the Company's share price (stock symbol: KWS) performance versus the designated Share Index in terms of shareholder return, over a three-year period. For the awards granted up to 2015, one-third of the share options vested if the Company exceeded the Total Shareholder Returns (TSR) of the Numis Small Cap Index (excluding Investment Trusts) by 10%, two-thirds if the TSR exceeded the Index by 20% and full vesting if the TSR exceeded the Index by 30%. This was amended for the 2016 and 2017 awards to 100% vesting if the shareholder return exceeds the Index by 45%, and a pro-rated return between 10% if the TSR matches the Index, to 100% if the TSR exceeds the Index by 45%. The scheme was further amended in 2018 to 100% vesting if the TSR exceeds the Index by 20%, and a pro-rated return between 10% and 100% if the TSR exceeds by between 0% and 20%. In 2019, the benchmark Index was amended for future grants to be the FTSE Small Cap Index, with the same performance conditions as 2018. These are measured at fair value, taking into account market vesting conditions but not non-market vesting conditions, at the date of grant, measured by using the Monte Carlo binomial model.

Dividend Distribution
Final dividends are recorded in the Group's financial statements in the period in which they are approved by the Group's shareholders. Interim dividends are recognised when paid.

Income Taxes and Deferred Taxation
Provision for income taxes is calculated in accordance with the tax legislations and applicable tax rates in force at the reporting date in the countries in which the Group companies have been incorporated.
Deferred tax assets and liabilities are recognised where the carrying amount of an asset or liability in the consolidated statement of financial position differs from its tax base, except for differences arising on:

- The initial recognition of goodwill;
- The initial recognition of an asset or liability in a transaction which is not a business combination and at the time of the transaction affects neither accounting or taxable profit; and
- Investments in subsidiaries and jointly controlled entities where the Group is able to control the timing of the reversal of the difference and it is probable that the difference will not reverse in the foreseeable future.

The amount of the asset or liability is determined using tax rates that have been enacted or substantively enacted by the reporting date and are expected to apply when the deferred tax liabilities / (assets) are settled / (recovered).

Deferred tax assets and liabilities are offset when the Group has a legally enforceable right to offset current tax assets and liabilities and the deferred tax assets and liabilities relate to taxes levied by the same tax authority on either:

- The same taxable Group company; or
- Different Group entities which intend either to settle current tax assets and liabilities on a net basis, or to realise the assets and settle the liabilities simultaneously, in each future period in which significant amounts of deferred tax assets or liabilities are expected to be settled or recovered.

Property, Plant and Equipment
Property, plant and equipment comprise computers, leasehold improvements, and office furniture and equipment, and are stated at cost less accumulated depreciation. Carrying amounts are reviewed for impairment whenever events or changes in circumstances indicate that their carrying amount may not be recoverable. Where the carrying amount of an asset is greater than its estimated recoverable amount, it is written down immediately

to its recoverable amount.

Property, plant and equipment acquired through business combinations are valued at fair value on the date of acquisition.

Depreciation is calculated to write off the cost of fixed assets on a straight-line basis over the expected useful lives of the assets concerned. The principal annual rates used for this purpose are:

Computers and software	3 years
Office furniture and equipment	10 years
Leasehold improvements	over the length of the lease

Gains and losses on disposals are determined by comparing proceeds with carrying amount and are included in the Consolidated statement of comprehensive income.

Financial Assets
The Group's most significant financial assets comprise trade and other receivables and cash and cash equivalents in the Consolidated statement of financial position, whereas the Company's most significant financial assets comprise inter-group receivables.

Trade Receivables
Trade receivables, which principally represent amounts due from customers, are recognised at amortised cost as they meet the IFRS 9 classification test of being held to collect, and the cash flow characteristics represent solely payments of principal and interest.

The Group's impairment methodology is in line with the requirements of IFRS 9. The simplified approach to providing for expected credit losses has been applied to trade receivables, which requires the use of a lifetime expected loss provision.

Intercompany Receivables
Intercompany receivables are recognised at amortised cost as they meet the IFRS 9 classification test of being held to collect, and the cash flow characteristics represent solely payments of principal and interest. The Group applies the general approach to applying the expected credit losses to its related party loans. Under the General Approach, at each reporting date, the Group determines whether there has been a Significant Increase in Credit Risk (SICR) since initial recognition and whether any balances are credit impaired. This determines the amount, if any, of expected credit losses to be recognised.

Cash and Cash Equivalents
Cash and cash equivalents are held to meet the working capital requirements of the Group. They include cash in hand, deposits held at call with banks and other short-term highly liquid investments. Where cash is on deposit with maturity dates greater than three months, it is disclosed as short-term investments.

Contract Assets
Contract assets arising from Revenue from Contracts with Customers are recognised in accordance with our Revenue Recognition policy, as discussed separately in this note. The Group applies the simplified approach to assessing expected credit losses in relation to contract assets, as the maturities of such assets are less than 12 months. Based upon the recoverability of contract assets at year end, no significant expected credit loss provision has been applied.

Share Capital
Financial instruments issued by the Group are treated as equity only to the extent that they do not meet the definition of a financial liability. The Group's ordinary shares are classified as equity instruments.

Financial Liabilities
Contingent consideration is initially recognised at fair value and subsequently re-measured through the profit and loss. Trade payables, bank borrowings and other monetary liabilities are initially recognised at fair value and subsequently carried at amortised cost using the effective interest rate method.

Leased Assets
As described in Note 1, the Group has applied IFRS 16 using the modified retrospective approach and therefore comparative information has not been restated. This means comparative information is still reported under IAS 17 and IFRIC 4.

<u>Accounting policy applicable from 1 January 2019</u>

For any new contracts entered into on or after 1 January 2019, the Group considers whether a contract is, or contains a lease. A lease is defined as 'a contract, or part of a contract, that conveys the right to use an asset (the underlying asset) for a period of time in exchange for consideration'.

At lease commencement date, the Group recognises a right of use asset and a lease liability on the balance sheet. The right of use asset is measured at cost, which is made up of the initial measurement of the lease liability, any initial direct costs incurred by the Group, an estimate of any costs to dismantle and remove the asset at the end of the lease, and any lease payments made in advance of the lease commencement date (net of any incentives received).

The Group depreciates the right of use assets on a straight-line basis from the lease commencement date to the earlier of the end of the useful life of the right of use asset or the end of the lease term. The Group also assesses the right of use asset for impairment when such indicators exist. At the commencement date, the Group measures the lease liability at the present value of the lease payments unpaid at that date, discounted using the interest rate implicit in the lease if that rate is readily available or the Group's incremental borrowing rate. Lease payments included in the measurement of the lease liability are made up of fixed payments (including in substance fixed), variable payments based on an index or rate, amounts expected to be payable under a residual value guarantee, and payments arising from purchase and extension options reasonably certain to be exercised.

Subsequent to initial measurement, the liability will be reduced for payments made and increased for interest. It is remeasured to reflect any reassessment or modification, or if there are changes to in substance fixed payments. When the lease liability is remeasured, the corresponding adjustment is reflected in the right of use asset, or profit and loss if the right of use asset is already reduced to zero.

The Group has elected to account for short-term leases and leases of low value assets using the practical expedients. Instead of recognising a right of use asset and lease liability, the payments in relation to these are recognised as an expense in profit or loss on a straight-line basis over the lease term.

The Group has applied judgement to determine the lease term for contracts in which it is a lessee that include renewal options. The assessment of whether the Group is reasonably certain to exercise such options impacts the lease term, which significantly affects the lease liabilities and right of use assets recognised.

Accounting policy applicable before 1 January 2019

Where substantially all of the risks and rewards of ownership are not transferred to the Group (“operating lease”), the total rental payables are charged to the Consolidated Statement of Comprehensive Income on a straight-line basis over the term of the lease.

Where substantially all of the risks and rewards incidental to ownership of a leased asset have been transferred to the Group (a “finance lease”), the asset is treated as if it had been purchased outright. The amount initially recognised as an asset is the lower of the fair value of the leased property and the present value of the minimum lease payments payable over the term of the lease. The corresponding lease commitment is shown as a liability. Lease payments are analysed between capital and interest. The interest element is charged to the Consolidated Statement of Comprehensive Income over the period of the lease and is calculated so that it represents a constant proportion of the lease liability. The capital element reduces the balance owed to the lessor.

Employee Benefit Trust

Ordinary shares purchased by the Employee Benefit Trust on behalf of the parent company under the Terms of the Share Option Plan are deducted from equity on the face of the Consolidated Statement of Financial Position. No gain or loss is recognised in relation to the purchase, sale, issue or cancellation of the parent company’s ordinary shares.

3. Critical Accounting Estimates and Judgements

The Group makes certain estimates and assumptions regarding the future. Estimates and judgements are continually evaluated based on historical experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances. In the future, actual experience may differ from these estimates and assumptions.

Judgements

The judgements, apart from those involving estimations, that management have made in the process of applying the entity's accounting policies and that have the most significant effect on the amounts recognised in the financial statement, are outlined below.

- **Functional Currency**: The Directors have considered the requirements of IAS 21 in determining the currency that most faithfully represents the economic effects of the underlying transactions, events and conditions to determine the Group's functional currency. Detailed consideration has been given to both the Primary and Secondary Indicators in forming this conclusion. The Primary Indicators relate to revenues, regulation, competitive forces and costs, while the Secondary Indicators are primarily concerned with financing the business and the currency in which receipts from operating activities are usually retained. With a mix of currencies dominating the indicators, there is no clear single currency that influences the Group, however the EUR remains marginally the most dominant when all factors are considered. Therefore the Directors consider the EUR as the currency that most faithfully represents the economic effects of the underlying transactions, events and conditions.
- **Business Combinations**: When acquiring a business, the Group is required to identify and recognise intangible assets, the determination of which requires a significant degree of judgement. Acquisitions may also result in intangible benefits being brought into the Group, some of which qualify for recognition as intangible assets while other such benefits do not meet the recognition requirements of IFRS and therefore form part of goodwill. Customer relationships are recognised as separate assets where revenues are recurring in nature and material revenues have been generated with the customer for a continuous period of 3 years. For the Game Development service line, the key asset acquired is typically “know-how”, an asset that is not readily measurable and thus intrinsically linked to goodwill. Relationships are typically short term contract based rather than relationship based. Therefore neither customer contracts or customer relationships are typically recognised on the acquisition of an Game Development business.
- **IFRS 16 Leases:** The Group has determined that the Group’s incremental borrowing rate is the appropriate rate to use to discount lease liabilities. The Group has applied judgement to determine the lease term for contracts in which it is a lessee that include renewal options. The assessment of whether the Group is reasonably certain to exercise such options impacts the lease term, which significantly affects the lease liabilities and right of use assets recognised.

Estimates and assumptions

The Group makes certain estimates and assumptions regarding the future. Estimates and judgements are continually evaluated based on historical experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances. In the future, actual experience may differ from these estimates and assumptions.

A number of areas requiring the use of estimates and critical judgements impact the Group’s earnings and financial position. These include revenue recognition, the computation of income taxes, the value of goodwill and intangible assets arising on acquisitions, the valuation of multimedia tax credits / video game tax relief, leasing and the valuation of defined retirement benefits. The Directors consider that no reasonably possible changes to any of the assumptions used in the estimates would in the view of the Directors give rise to significant risk of a material adjustment to the carrying value of the associated balances in the subsequent financial year

4. Revenue from Contracts with Customers and Segmental Analysis

Revenue from Contracts with Customers

Revenue recognised in the reporting period arises from contracts with customers, and is predominantly recognised over time. There were no significant amounts of revenue recognised in the reporting period that were included in a contract liability balance at the beginning of the reporting period, or from performance obligations satisfied in the previous reporting period.

Revenue by line of business	**2019**	2018
	€'000	€'000
Art creation*	**43,601**	33,952
Game development (previously Engineering)*	**66,290**	35,163
Audio	**40,419**	34,190

Functional testing*	**68,930**	47,862
Localisation	**48,497**	43,983
Localisation testing	**22,638**	19,751
Player support	**36,088**	35,904
	326,463	250,805

*The prior year comparative has been re-classified to reflect the current year presentation as the Directors consider this to be more meaningful.

Analysis by geographical regions is made according to the Group's operational jurisdictions. For many contracts, operations are completed in multiple sites. Revenue is associated with the jurisdiction from which the final invoice to the client is raised. This does not reflect the region of the Group's customers; whose locations are worldwide.

Geographical analysis of revenues	**2019**	2018
	€'000	€'000
Ireland	**118,095**	47,203
United States	**52,265**	52,321
Canada	**48,112**	69,536
United Kingdom	**41,768**	21,205
Switzerland	**19,045**	20,067
Japan	**15,501**	7,724
Italy	**9,395**	8,673
France	**7,606**	8,489
India	**6,355**	6,323
Germany	**1,920**	741
Singapore	**1,637**	1,130
Spain	**1,588**	1,968
Poland	**1,285**	347
Brazil	**802**	1,016
China	**691**	3,126
Mexico	**398**	936
	326,463	250,805

No single customer accounted for more than 10% (2018: None) of the Group's revenue during the year.

Revenue Expected to be Recognised

For Game Development, games are developed to an agreed specification and time schedule, and often have delivery schedules and / or milestones that extend well into the future. The following are Game Development revenues expected to be recognised for contracts with a schedule of work that extends beyond one year, representing the aggregate amount of the transaction price allocated to the performance obligations that are unsatisfied (or partially unsatisfied) as of the end of the reporting period:

	Total undelivered	**Scheduled completion within 1 year**	**Scheduled completion 1-2 years**
	€'000	**€'000**	**€'000**
At 31 December 2019	**24,645**	**23,593**	**1,052**
At 31 December 2018	10,417	9,112	1,305

For all service lines excluding Game Development, contracts do not extend to more than one year, therefore we do not disclose information concerning unsatisfied performance obligations, as allowed under the practical expedient exemption under IFRS 15. This practical expedient is also availed of for Game Development contracts of less than one year in duration.

Segmental Analysis

Management considers that the Group's activity as a single source supplier of Services to the gaming industry constitutes one operating and reporting segment, as defined under IFRS 8.

Management review the performance of the Group by reference to Group-wide profit measures and the revenues derived from seven main service groupings.

There is no allocation of operating expenses, profit measures, assets and liabilities to individual product groupings. Accordingly, the disclosures above are provided on a Group-wide basis.

Activities are reported in a manner consistent with the internal reporting provided to the chief operating decision-maker. The chief operating decision-maker has been identified as the executive management team made up of the Chief Executive Officer and the Chief Financial Officer.

Geographical analysis of non-current assets from continuing businesses	2019 €'000	2018 €'000
United States	**84,139**	84,685
United Kingdom	**52,233**	48,929
Canada	**29,772**	11,760
Italy	**12,222**	11,650
Switzerland	**10,644**	11,117
Ireland	**9,296**	3,542
China	**8,776**	7,850
France	**6,725**	6,318
Spain	**5,924**	1,535
Germany	**5,250**	1,097
Japan	**3,905**	796
Philippines	**2,798**	595
India	**2,526**	2,321
Mexico	**2,164**	885
Poland	**1,563**	267
Brazil	**1,247**	888
Russia	**925**	797
Singapore	**225**	52
Netherlands	**64**	-
Taiwan	**3**	4
	240,401	195,088
Geographical analysis of non-current assets from continuing businesses	**240,401**	195,088
Investment in associate	**-**	160
Deferred tax assets	**5,060**	2,967
Non-current assets	**245,461**	198,215

5. Cost of Sales and Operating Profit

Cost of sales	2019 €'000	2018 €'000
Operating expenses	**213,011**	163,112
Multimedia tax credits / video game tax relief	**(16,063)**	(12,220)
Other direct costs	**9,286**	4,105
	206,234	154,997

Operating profit is stated after charging:

	2019 €'000	2018 €'000
Depreciation - property, plant and equipment	**7,295**	5,316
Depreciation - right of use assets	**7,849**	-
Amortisation of intangible assets	**7,318**	6,872
Costs of acquisition and integration	**4,348**	5,296
Short term leases (2018: total lease expense)	**1,616**	8,708

Costs of acquisition and integration	2019	2018

	€'000	€'000
Post-acquisition integrations costs re: 2019 acquisitions (note 28)	**535**	-
Post-acquisition integrations costs re: 2018 acquisitions	**406**	758
Fair value adjustments to contingent consideration (note 18)	**493**	766
Deferred consideration related to continuing employment	**567**	590
Acquisition related and other borrowing costs	**262**	693
Acquisition team and related costs	**550**	614
Other re-organisation and restructuring costs	**1,535**	1,875
	4,348	5,296

Auditor's remuneration	**2019**	2018
	€'000	€'000
Audit services:		
Parent company and Group audit	**285**	329
Subsidiary companies audit	**202**	137
Non-audit services:		
Audit related assurance services	**12**	16
Taxation compliance	**-**	7
	499	489

6. Financing Income and Cost

	2019	2018
	€'000	€'000
Financing income		
Interest receivable	**74**	-
Foreign exchange gain	**-**	791
	74	791
Financing cost		
Bank charges	**(629)**	(503)
Interest expense	**(934)**	(502)
Unwinding of discounted liabilities - lease liabilities	**(694)**	-
Unwinding of discounted liabilities - deferred consideration	**(330)**	(311)
Foreign exchange loss	**(1,658)**	-
	(4,245)	(1,316)
Net financing income / (cost)	**(4,171)**	(525)

7. Taxation

	2019	2018
	€'000	€'000
Current income tax		
Income tax on profits of parent company	**(3)**	-
Income tax on profits of subsidiaries	**8,523**	9,592
Deferred tax (note 26)	**(1,058)**	(2,401)
	7,462	7,191

The tax charge for the year can be reconciled to accounting profit as follows:

	2019	2018
	€'000	€'000
Profit before tax	**17,371**	22,094
Tax charge based on the Effective Tax Rate*	**4,519**	5,345
Tax settlement regarding a pre-acquisition issue	**491**	-
Corporate tax prior year (over) / under provision	**(929)**	(352)
Deferred tax prior year (over) / under provision and impact of change in tax rates	**(369)**	(368)
Items disallowed for tax purposes	**4,354**	2,205
Exempt and non taxable income	**(133)**	(588)
Tax incentives	**(1,524)**	(1,035)
Current year tax losses utilised	**(1,176)**	(131)
Current year tax losses where deferred tax has not been provided	**1,064**	730
State and other direct taxes	**1,473**	1,529
Other differences - net	**(308)**	(144)
Total tax charge	**7,462**	7,191
*Effective tax rate - being the statutory tax rate relative to the profit before tax in each jurisdiction	**26.0%**	24.2%

The Group's subsidiaries are located in different jurisdictions and are taxed on their residual profit in those jurisdictions. The effective tax rate will vary year on year due to the effect of changes in tax rates and changes in the proportion of profits in each jurisdiction.

Tax effects relating to each component of other comprehensive income:

	2019	2018
	€'000	€'000
Exchange gain / (loss) in net investments foreign operations	**1,267**	1,270
Tax (expense) / benefit	**-**	-
Net of tax amount	**1,267**	1,270
Actuarial gain / (loss) on defined benefit plans	**(167)**	27
Tax (expense) / benefit	**5**	6
Net of tax amount	**(162)**	33
Exchange gain / (loss) on translation of foreign operations	**5,960**	771
Tax (expense) / benefit	**-**	-
Net of tax amount	**5,960**	771

8. Earnings per Share

	2019	2018
	€ cent	€ cent
Basic	**15.23**	23.16
Diluted	**14.73**	22.24

	€'000	€'000
Profit for the period from continuing operations	**9,909**	14,903

Denominator (weighted average number of equity shares)	**Number**	Number
Basic*	**65,081,403**	64,335,162
Diluting impact of Share Options	**2,187,083**	2,679,932
Diluted*	**67,268,486**	67,015,094

* Includes (weighted average) shares to be issued	**510,350**	1,321,707

Contingently issuable Ordinary Shares are excluded from the computation of diluted earnings per Ordinary Share where the conditions governing exercisability have not been satisfied:

	2019	2018
	Number	Number
LTIPs	**2,067,536**	951,800
Share options	**1,128,000**	544,900
	3,195,536	1,496,700

Details of the number of share options outstanding at the year-end are set out in note 17.

9. Dividends

Dividends paid	**In respect of**	**Approval date**	**€ cent per share**	**Pence STG per share**	**Total dividend €'000**	**Payment date**
Final	2017	Apr-18	1.11	0.98	696	Jun-18
Interim	2018	Sep-18	0.60	0.53	384	Oct-18
Dividends paid to shareholders 2018			1.71	1.51	1,080	
Final	**2018**	**Apr-19**	**1.21**	**1.08**	**773**	**Jun-19**
Interim	**2019**	**Sep-19**	**0.65**	**0.58**	**424**	**Oct-19**
Dividends paid to shareholders 2019			**1.86**	**1.66**	**1,197**	

The Group does not recognise deferred tax on unremitted retained earnings, as in general, retained earnings are continually re-invested by the Group and dividends are only remitted where there are minimal tax consequences.

At 31 December 2019, Retained earnings available for distribution (being retained earnings plus share option reserve) in the Company were €16.4m (2018: €4.1m). The Directors do not foresee any impediment in continuing to implement the dividend policy of the Group.

Following on distributions made in 2016 and 2017 that were not fully in compliance with the Companies Act 2006, the Directors have implemented legal advice to ensure ongoing compliance and rectify the oversights in earlier periods, which was envisaged in the Annual Report and Accounts 2018. Following the approval by shareholders of a specific resolution at the 2019 AGM, the Company entered into deeds of release, to put all relevant parties in the position where they were always intended to be, had the relevant dividends been made in accordance with the Act. Interim accounts for the Company have also been filed at Companies House to support the payment of an interim dividend in 2019.

10. Staff Costs

Total staff costs (including Directors) comprise the following:

Group	**2019**	2018
	€'000	€'000
Salaries and related costs	**201,158**	146,785
Share option expense	**9,775**	4,129
	210,933	150,914

The average number of employees comprises the following:

Group	**2019**	2018
Average number of employees		
Operations	**6,778**	4,733
General and administration	**646**	505
	7,424	5,238

Key management compensation is as follows:

	2019	2018
	€'000	€'000
Salaries and related costs	**1,384**	907
Social welfare costs	**140**	99
Pension costs	**35**	27
Share option expense	**943**	501
	2,502	1,534

The key management compensation includes compensation to eight Directors of Keywords Studios PLC during the year (2018: seven).

The key management compensation presented for 2019 also includes additional executives of the Group, of which only one was included in 2018.

11. Goodwill

	2019
	€'000
At 1 January 2018	108,062
Recognition on acquisition of subsidiaries (note 28)	43,144
Exchange rate movement	2,996
At 31 December 2018	**154,202**
Recognition on acquisition of subsidiaries (note 28)	**16,950**
Exchange rate movement	**4,487**
At 31 December 2019	**175,639**

The Group assesses the carrying value of goodwill each year on the basis of budget projections for the coming year extrapolated using a one to five year growth rate and a terminal value calculated using a long term growth rate projection. The discount rates used of 12.5% (2018: 12.5%) is based on the Board's assessment of the WACC of the Group. The WACC assessment is supported by an annual independently calculated report, using the Capital Asset Pricing Model. However, the Board have excluded the impact of short term market volatility on these calculations in determining the Group WACC.

Key Assumptions

	Actual		Sensitivity analysis			
	2019	2018	**2019**	2018	**2019**	2018
1 to 5 year growth rate assumption	**10%**	10%	**15%**	15%	**5%**	5%
Long term growth rate assumption	**2%**	2%	**2%**	2%	**2%**	2%
Value in use (€m)	**469**	445	**560**	532	**398**	378
Carrying value - goodwill (€m)	**176**	154				

The value in use calculations were consistently calculated year over year, with no significant changes in the assumptions made. The result of the value in use calculations was that no impairment is required in this period.

12. Intangible Assets

	Customer relationships	Intellectual property / Development costs	Music licences	Total
	€'000	**€'000**	**€'000**	**€'000**
Cost				
At 1 January 2018	29,282	-	-	29,282
Recognition on acquisition of subsidiaries	6,564	-	362	6,926
Additions	-	1,521	78	1,599
Exchange rate movement	867	-	(4)	863

At 31 December 2018	**36,713**	**1,521**	**436**	**38,670**
Recognition on acquisition of subsidiaries	**-**	**1,615**	**-**	**1,615**
Additions	**-**	**391**	**-**	**391**
Exchange rate movement	**907**	**-**	**18**	**925**
At 31 December 2019	**37,620**	**3,527**	**454**	**41,601**
Amortisation				
At 1 January 2018	5,734	-	-	5,734
Amortisation charge	6,758	-	114	6,872
Exchange rate movement	179	-	1	180
At 31 December 2018	**12,671**	**-**	**115**	**12,786**
Amortisation charge	**7,001**	**-**	**317**	**7,318**
Exchange rate movement	**346**	**-**	**21**	**367**
At 31 December 2019	**20,018**	**-**	**453**	**20,471**
Net book value				
At 31 December 2018	24,042	1,521	321	25,884
At 31 December 2019	**17,602**	**3,527**	**1**	**21,130**

Customer relationships, intellectual property / development costs and music licences are amortised on a straight-line basis over five years. Customer relationships and music licence amortisation commences on acquisition, whereas intellectual property/development costs amortisation commences when the product is launched.

13. Property, Plant and Equipment

Group

	Computers and software	Office furniture and equipment	Leasehold improvements	Total
	€'000	€'000	€'000	€'000
Cost				
At 1 January 2018	12,474	4,316	3,424	20,214
Currency revaluation	(114)	(15)	27	(102)
Additions	6,248	1,082	2,110	9,440
Acquisitions through business combinations at fair value	362	272	332	966
Disposals	(645)	(248)	(89)	(982)
At 31 December 2018	**18,325**	**5,407**	**5,804**	**29,536**
Currency revaluation	**1,042**	**275**	**497**	**1,814**
Additions	**6,815**	**1,657**	**4,673**	**13,145**
Acquisitions through business combinations at fair value	**300**	**232**	**231**	**763**
Disposals	**(1,639)**	**(824)**	**(44)**	**(2,507)**
At 31 December 2019	**24,843**	**6,747**	**11,161**	**42,751**
Accumulated depreciation				
At 1 January 2018	7,252	2,222	629	10,103
Currency revaluation	(51)	11	74	34
Depreciation charge	3,805	643	868	5,316
Disposals	(645)	(185)	(89)	(919)
At 31 December 2018	**10,361**	**2,691**	**1,482**	**14,534**

Currency revaluation	**639**	**160**	**267**	**1,066**
Depreciation charge	**5,226**	**703**	**1,366**	**7,295**
Disposals	**(1,501)**	**(803)**	**(3)**	**(2,307)**
At 31 December 2019	**14,725**	**2,751**	**3,112**	**20,588**
Net book value				
At 31 December 2018	7,964	2,716	4,322	15,002
At 31 December 2019	**10,118**	**3,996**	**8,049**	**22,163**

14. Trade Receivables

Group	**2019**	2018
	€'000	€'000
Trade receivables	**44,526**	38,736
Provision for bad debts (note 23)	**(1,283)**	(1,717)
Financial asset held at amortised cost	**43,243**	37,019

Trade receivables arise from revenues derived from contracts with customers.

15. Other Receivables

Group - Short Term	**2019**	2018
	€'000	€'000
Accrued income from contracts with customers	**7,010**	6,317
Prepayments and rent deposits	**4,089**	2,490
Other receivables	**3,151**	2,459
Multimedia tax credits / video games tax relief	**17,626**	10,820
Tax and social security	**3,537**	1,373
	35,413	23,459

Accrued income from contracts with customers, represent mainly contract assets in process and related items. The movement in the year is comprised of transfers in and out as items are accrued and subsequently invoiced to customers, with no significant amounts written off or impaired in the period.

16. Shareholders' Equity

Share Capital

	Issue date	Per share €	Number of ordinary £0.01 shares	Number of ordinary £0.01 shares - to be issued	Share capital €'000	Share premium €'000	Merger reserve €'000	Share capital- to be issued €'000
At 1 January 2018			61,708,205	2,172,000	737	102,054	28,878	11,620
Acquisition related issuance of shares:								
Cord and Laced	09-Apr	17.48	-	73,744	-	-	-	1,289
Synthesis	24-Apr	2.91	1,188,263	(1,188,263)	15	-	3,440	(3,455)
Synthesis in lieu of deferred cash	24-Apr	19.39	51,562	-	1	-	999	-
Fire Without Smoke	30-May	20.12	-	77,006	-	-	-	1,550
Mindwalk	14-Jun	3.67	513,189	(513,189)	6	-	1,880	(1,886)
Blindlight	11-Jun	20.57	-	64,521	-	-	-	1,327

Snowed In	20-Jul	19.55	-	37,983	-	-	-	743
Studio Gobo and Electric Square	20-Aug	19.74	-	254,529	-	-	-	5,024
The Trailerfarm	18-Sep	21.33	-	11,070	-	-	-	236
Around the Word	01-Oct	12.07	66,262	(66,262)	1	-	799	(800)
Acquisition related issuance of shares			1,819,276	(1,248,861)	23	-	7,118	4,028
Issue of shares on exercise of share options		0.67	260,805	-	3	171	-	-
At 31 December 2018			**63,788,286**	**923,139**	**763**	**102,225**	**35,996**	**15,648**
Acquisition related issuance of shares:								
Sunny Side Up	04-Jan	12.46	-	60,179	-	-	-	750
Sperasoft	16-Jan	16.48	243,442	(243,442)	3	-	4,010	(4,013)
Sperasoft re: bonus to employees	16-Jan	14.13	7,801	-	-	-	110	-
Fire Without Smoke	04-Jun	20.12	77,006	(77,006)	1	-	1,548	(1,549)
Red Hot	06-Jun	9.12	160,297	(160,842)	2	-	1,461	(1,468)
Descriptive Video Works	11-Jun	17.93	-	35,560	-	-	-	638
Blindlight	26-Jun	20.57	64,521	(64,521)	1	-	1,326	(1,327)
Snowed in	12-Aug	19.55	37,983	(37,983)	-	-	743	(743)
Studio Gobo and Electric Square	20-Aug	19.74	254,949	(254,529)	3	-	5,021	(5,024)
The Trailerfarm	24-Sep	21.31	11,070	(11,070)	-	-	236	(236)
TV+SYNCHRON	01-Oct	13.12	-	68,608	-	-	-	900
Ichi	26-Nov	15.94	-	70,246	-	-	-	1,120
Kantan	12-Dec	15.86	-	41,382	-	-	-	614
Acquisition related issuance of shares			**857,069**	**(573,418)**	**10**	**-**	**14,455**	**(10,338)**
Issue of shares on exercise of share options		1.34	567,160	-	7	754	-	-
At 31 December 2019			**65,212,515**	**349,721**	**780**	**102,979**	**50,451**	**5,310**

There is no limit to the number of shares which the Company can issue, nor are there are any restrictions on dividends or distributions on such shares. Shares to be issued are valued at the share price at the date of acquisition, and are recorded as shares to be issued, in accordance with IAS 32.16.

Shares held in the Employee Benefit Trust ("EBT")

	2019		2018	
	Shares	**€'000**	Shares	€'000
Ordinary shares held in the EBT	**335,425**	**1,997**	335,425	1,997

Reserves

The following describes the nature and purpose of each reserve within owners' equity:

Reserve	Description and purpose
Retained earnings	Cumulative net gains and losses recognised in the Consolidated Statement of Comprehensive Income.
Foreign exchange reserve	Gains or losses arising on retranslation of the net assets of the overseas operations into Euro.
Share premium	The share premium account is the amount received for shares issued in excess of their nominal value, net of share issuance costs.
Share option reserve	The share option reserve is the credit arising on share-based payment charges in relation to the Company's share option schemes.
Share capital - to be issued	For deferred consideration which is to be provided for by the issue of a fixed number of shares at a future

	defined date, where there is no obligation on Keywords to offer a variable number of shares, the deferred consideration is classified as an Equity Arrangement and the value of the shares is fixed at the date of the acquisition.
Merger reserve	The merger reserve was initially created following the Group reconstruction, when Keywords Studios PLC acquired the Keywords International Limited Group of companies. When the Group uses Keywords Studios PLC shares as consideration for the acquisition of an entity, the value of the shares in excess of the nominal value (net of share issuance costs) is also recorded within this reserve, in line with S612 of the Companies Act 2006.

17. Share Options

In July 2013, at the time of the IPO, the Company put in place a Share Option Scheme and a Long Term Incentive Plan ("LTIP"). The charge in relation to these arrangements is as follows:

	2019	2018
	€'000	€'000
Share option scheme expense	**1,520**	646
LTIP option expense	**8,255**	3,483
	9,775	4,129

Of the total share option expense, €754k relates to Directors of the Company (2018: €501k).

Share Option Scheme

Share options are granted to Executive Directors and to permanent employees. The exercise price of the granted options is equal to the market price of the shares at the time of the award of the options. The Company has no legal or constructive obligation to repurchase or settle the options in cash.

Movements in the number of share options outstanding and their related weighted average exercise prices are as follows:

	2019		2018	
	Average exercise price in £ per share	**Number of options**	Average exercise price in £ per share	Number of options
Outstanding at the beginning of the period	**7.11**	**1,832,701**	2.79	1,375,201
Granted	**15.88**	**729,000**	17.10	591,000
Lapsed	**14.74**	**(175,807)**	13.24	(65,246)
Exercised	**2.66**	**(237,792)**	1.93	(68,254)
Outstanding at the end of the period	**9.96**	**2,148,102**	7.11	1,832,701
Exercisable at the end of the period	**1.89**	**809,440**	1.47	706,524
Weighted average share price at date of exercise	**15.98**		17.68	

Summary by year

Year of Option	2013	2015	2016	2017	2018	2019	Total
Exercise price	£1.20	£1.58	£2.54	£7.76	£17.10	£15.88	
Outstanding at the beginning of the period	275,484	605,033	139,184	268,500	544,500	-	1,832,701
Granted	-	-	-	-	-	729,000	729,000
Lapsed	-	(1,422)	(7,005)	(21,880)	(75,000)	(70,500)	(175,807)
Exercised	(96,925)	(59,130)	(40,950)	(40,787)	-	-	(237,792)
Outstanding at the end of the period	178,559	544,481	91,229	205,833	469,500	658,500	2,148,102
Exercisable at 31 December 2019	178,559	544,481	41,567	44,833	-	-	809,440
Exercisable 2020	-	-	49,662	80,500	156,500	-	286,662
Exercisable 2021	-	-	-	80,500	156,500	219,500	456,500
Exercisable 2022	-	-	-	-	156,500	219,500	376,000

Exercisable 2023	-	-	-	-	-	219,500	219,500

The inputs into the Black-Scholes model, used to value the options are as follows:

Year of Option	2013	2015	2016	2017	2018	2019	Total
Weighted average share price (£)	£1.23	£1.64	£2.54	£7.74	£17.21	£16.09	
Weighted average exercise price (£)	£1.20	£1.58	£2.54	£7.76	£17.10	£15.88	
Fair value at measurement date (€)	€0.81	€0.56	€0.40	€1.13	€3.79	€4.96	
Average expected life	4 Years	4 Years	4 Years	4 Years	4 Years	4 Years	
Expected volatility	36.12%	28.03%	27.17%	24.79%	35.87%	45.43%	
Risk free rates	0.50%	0.90%	0.58%	0.16%	0.89%	0.81%	
Average expected dividend yield	1.00%	0.75%	0.55%	0.21%	0.10%	0.10%	
Weighted average remaining life of options in months	-	-	5	17	29	41	26

Expected volatility was determined by reference to KWS volatility. The expected life used in the model has been adjusted based on management's best estimate, for the effects of non-transferability, exercise restrictions and behavioural considerations.

Long Term Incentive Plan

LTIP share awards are subject to outperforming the designated share index over a three-year period.

Movements in the number of share options outstanding and their related weighted average exercise prices are as follows:

	2019		2018	
	Average exercise price in £ per share	**Number of options**	Average exercise price in £ per share	Number of options
Outstanding at the beginning of the period	**0.01**	**2,677,467**	0.01	1,976,416
Granted	**0.01**	**1,298,136**	0.01	996,000
Lapsed	**0.01**	**(200,367)**	0.01	(102,398)
Exercised	**0.01**	**(329,368)**	0.01	(192,551)
Outstanding at the end of the period	**0.01**	**3,445,868**	0.01	2,677,467
Exercisable at the end of the period	**0.01**	**732,299**	0.01	436,667
Weighted average share price at date of exercise	**16.17**		17.50	

Summary by year

Year of option	2013	2015	2016	2017	2018	2019	Total
Exercise price	£0.01	£0.01	£0.01	£0.01	£0.01	£0.01	£0.01
Outstanding at the beginning of the period	222,238	214,429	625,000	664,000	951,800	-	2,677,467
Granted	-	-	-	-	-	1,298,136	1,298,136
Lapsed	-	-	-	(20,000)	(94,800)	(85,567)	(200,367)
Exercised	(17,965)	(13,470)	(297,933)	-	-	-	(329,368)
Outstanding at the end of the period	204,273	200,959	327,067	644,000	857,000	1,212,569	3,445,868
Exercisable at 31 December 2019	204,273	200,959	327,067	-	-	-	732,299
Exercisable 2020	-	-	-	644,000	-	-	644,000
Exercisable 2021	-	-	-	-	857,000	-	857,000
Exercisable 2022	-	-	-	-	-	1,212,569	1,212,569

Year of option	2013	2015	2016	2017	2018	2019	Total
Weighted average share price (£)	£1.60	£1.63	£2.56	£7.75	£17.24	£16.05	
Weighted average exercise price (£)	£0.01	£0.01	£0.01	£0.01	£0.01	£0.01	

Fair value at measurement date (€)	€0.62	€1.38	€1.74	€4.96	€11.83	€13.98	
Average expected life	3 Years	3 Years	3 Years	3 Years	3 Years	3 Years	
Expected volatility	36.12%	28.21%	27.11%	24.79%	35.87%	45.26%	
Risk free rates	0.50%	0.88%	0.54%	0.16%	0.89%	0.79%	
Weighted average remaining life of options in months	-	-	-	5	17	29	17

LTIP's vest on the third anniversary of the grant, if the market performance criteria are met. LTIPs must be exercised before the seventh anniversary of the grant.

The options were valued using a Monte Carlo binomial model using the following inputs:

- Expected volatility was determined by reference to KWS volatility. The expected life used in the model has been adjusted based on management's best estimate, for the effects of non-transferability, exercise restrictions and behavioural considerations.
- As any dividends earned are to be re-invested into the business the impact of dividends has been ignored in the calculation of the LTIP share option charge.

18. Other Payables

Group	**2019**	2018
	€'000	€'000
Current liabilities		
Accrued expenses	**22,809**	16,671
Payroll taxes	**3,833**	2,338
Other payables (ii)	**6,104**	3,890
Deferred and contingent consideration (i)	**5,966**	18,249
Related party payable	**-**	5
	38,712	41,153
Non-current liabilities		
Other payables	**216**	5
Deferred and contingent consideration (i)	**69**	1,057
	285	1,062

(i) The movement in deferred and contingent consideration during the financial year was as follows:

Group	**2019**	2018
	€'000	€'000
Opening balance	**19,306**	3,642
Consideration settled by cash	**(14,711)**	(1,603)
Consideration settled by shares	**-**	(1,000)
Unwinding of discount (note 6)	**330**	311
Additional liabilities from current year acquisitions (note 28)	**237**	17,068
Fair value adjustments (note 5)	**493**	766
Translation adjustment	**380**	122
	6,035	19,306

In general, in order for contingent consideration to become payable, pre-defined profit and/or revenue targets must be exceeded. The valuation of contingent consideration is derived using data from sources that are not widely available to the public and involves a degree of judgement (Level 3 input in the fair value hierarchy). On an undiscounted basis, the Group may be liable for deferred and contingent consideration ranging from €nil to a maximum of €6.163m. A 10% movement in expected performance results, has no impact on the fair value of the contingent consideration, and hence there are no reasonably probable changes to the assumptions and inputs (including the discount rate), that would lead to a material change to the fair value of the total amount payable.

(ii) Other payables includes deferred income from contracts with customers of €2,609k (2018: €312k), which mainly comprise items invoiced prior to services being delivered. The movement in the year is comprised of transfers in and out as items are deferred and subsequently recognised as revenue.

19. Employee Defined Benefit Plans

In line with statutory requirements in France, Italy and India, we are required to maintain employee defined benefit termination payment schemes.

In France, employees are entitled to a lump-sum on retirement or early termination, based on salary and length of service ('Indemnité de Fin de Carrière' or IFC), entitling the Group's French employees to benefits of up to 2 month's salary per year of service.

In Italy, on leaving employment, each employee is entitled to 1/13.5 of their final salary for each year of service ('Trattamento di Fine Rapporto' or TFR).

In India, in compliance with statutory requirements, employees with over 5 years service are entitled a termination benefit of 15/26 of monthly salary for each year of service ('Gratuity' benefits).

The Group commissions an actuarial valuation of the related liabilities in each jurisdiction annually.

The liabilities at year end are recorded as long term. The actuarial gain or loss is recorded separately within Other comprehensive income. The movements through the year are as follows:

Group

	2019	2018
	€'000	€'000
Opening liabilities at 1 January	**1,378**	1,055
Liabilities in India recognised at 1 January 2018	**-**	188
Liabilities in France recognised at 1 January 2019	**210**	-
Service cost	**307**	247
Interest cost	**35**	32
Benefits paid	**(48)**	(117)
Actuarial (gain) / loss recorded	**167**	(27)
Closing liabilities at 31 December	**2,049**	1,378

The Directors have considered the key specific risk factors which the Group faces due to the employee defined benefit plans which are in place. Having fully considered all specific elements of these plans the Directors believe that the key issues faced are as follows:

- The plan is currently 100% unfunded, there are no specific assets to meet the future liabilities as they fall due, as such there will be a cash flow impact as the liabilities must be met with current working capital as they fall due.

The Group has taken no specific actions to mitigate against these factors as due to the long-term nature of the plans it is expected that there will be no sudden financial impact on the Group's results caused by any of these factors. A maturity profile of the obligation is not presented as the liability is not significant in the context of the Group, and due to the age profile of employees a significant outlay is not anticipated for the foreseeable future.

In 2020, the Group expects the costs of the employee benefit plan to be in line with current year levels, as staff levels are anticipated to not change significantly in the period.

The actuarial valuation is based on the Projected Unit Credit Method, in line with IAS 19.

	2019	2018
Cost for year	**€'000**	€'000
Service cost	**307**	247
Interest cost	**35**	32
Liabilities in France recognised at 1 January 2019	**210**	-
Actuarial (gain) / loss	**167**	(27)
	719	252

	2019	2018
Actuarial (gain) / loss	**€'000**	€'000
Change due to experience	**28**	2
Change due to demographical assumptions	**(24)**	(38)
Change due to financial assumptions	**163**	9
	167	(27)

Assumptions Underlying the Actuarial Valuations and Sensitivities of the Assumptions

For the actuarial valuations the following demographic and economic and financial assumptions were applied:

- Mortality probabilities were derived from the population demographics, as recorded by the Government Statistics Offices in each jurisdiction.

- Disability, retirement age and other relevant demographic assumptions were taken from relevant life assurance statistics.
- Certain inputs were estimated by management including:
    - Employee attrition rates, estimated based on company experience in each jurisdiction.
    - In Italy, TFR rules allow for early drawdown of benefits in certain circumstances. Such advances were estimated on the basis of company experience.

Economic and Financial Assumptions	**2019**	2018
Salary increase	**3.38%**	3.08%
Inflation	**2.06%**	2.18%
Discount rate	**1.64%**	2.43%
Key Statistics		
Staff (number)	**749**	558
Average age (years)	**31**	32
Average service (years)	**4**	3

Interest Rate Sensitivities	**2019** **€'000**	2018 €'000
(0.25%)	**2,179**	1,456
0.25%	**1,964**	1,308
Mortality Rate Sensitivities		
(0.025%)	**2,056**	1,379
0.025%	**2,054**	1,378
Staff Turn Over Rate Sensitivities		
(0.50%)	**2,090**	1,389
0.50%	**2,046**	1,369
Staff Salary Increases Rate Sensitivities		
(0.50%)	**2,033**	1,370
0.50%	**2,103**	1,390

20. Loans and Borrowings

Group	**2019** **€'000**	2018 €'000
Expiry within 1 year	**80**	40,071
Expiry between 1 and 2 years	**-**	-
Expiry over 2 years	**59,671**	230
	59,751	40,301

In 2019 the Company amended and extended it's existing Syndicated Bank revolving credit facility ('RCF').

The RCF allows financing of up to €100 million, with an option to increase this by up to €40m to a total of €140 million. The RCF extends to October 2022, with an option to extend this maturity date by up to a further 2 years.

In connection with the RCF, security has been granted over the major subsidiaries of the Group and the lenders also require the Group to comply with and report interest cover and leverage ratios in connection with its financial covenants. There were no changes to these covenant requirements in the amended RCF. The Group was in full compliance with its financial covenants throughout each of the periods presented. Non-compliance with terms of the RCF could result in lenders refusing to advance more funds, or in the worst case, calling in outstanding loans.

While technically the borrowings are repaid and re-borrowed multiple times during the term of the RCF, so long as the Group remains compliant with the financial covenants and certain other terms of the RCF, the debt is rolled from one period to another, with the legal and commercial substance of a multi-year committed facility. Hence the Group has presented the RCF as a non-current liability, while in the prior period, the original RCF arrangement was presented as a current liability, because the arrangements were in the process of being re-negotiated.

There were a number of drawdowns during the financial year to fund new acquisitions. During 2019, excess funds of €7.5m were used to make a partial repayment of outstanding loans. As at 31 December 2019 the Group had €59.5 million outstanding under the RCF, at a rate based on a margin over

EURIBOR, plus a separate margin charged for the unutilised facility.

Loans owed by Keywords Studios QC-Interactive Inc at the end of 2018 of €0.3m reduced to €0.25m during 2019.

Loans and borrowings (classified as financial liabilities under IFRS 9), are held at amortised cost. Interest expenses which are calculated using the effective interest method, are disclosed in note 6.

The currencies of these loans are as follows:

Group	2019	2018
	€'000	€'000
Euro	59,500	40,000
Canadian Dollars	251	301
	59,751	40,301

21. Subsidiaries

The results and financial position of all the subsidiaries are included in the consolidated financial statements.

Details of the Group as at 31 December 2019 are set out below:

Name	Country of incorporation	Date of incorporation / acquisition	Proportion of voting rights and ordinary share capital held	Registered office
Keywords International Ltd	Ireland	13-May-98	100%	Whelan House, South County Business Park, Dublin 18, Ireland.
Keywords International Co Ltd	Japan	30-Nov-10	100%	5F, Aoba No.1 Bldg. 2-3-1 Kudanminami, Chiyoda, Tokyo, 102-0074 Japan.
Keywords International Inc	USA	26-Sep-12	100%	18300 Redmond Way, Suite 120, Redmond, WA 98052
KW Studios Limited *	UK	29-May-13	100%	201 Temple Chambers, 3-7 Temple Avenue, London, England, EC4Y 0DT
Liquid Violet Ltd *	UK	15-Jan-14	100%	201 Temple Chambers, 3-7 Temple Avenue, London, England, EC4Y 0DT
Keywords Studios QC-Games Inc.	Canada (Quebec)	17-Feb-14	100%	1751 Richardson, suite 8400, Montréal, Québec, Canada H3K1G6
Babel Media USA Inc	USA	17-Feb-14	100%	251 Little Falls Drive, Wilmington, DE 19808, USA
Babel Media India Private Limited	India	17-Feb-14	100%	3rd floor, Vardhman Orchard Plaza, Plot No 4, LSC, West Enclave, Pitampura, New Delhi, 110034, India
Babel Media Ltd *	UK	17-Feb-14	100%	201 Temple Chambers, 3-7 Temple Avenue, London, England, EC4Y 0DT
Keywords International Pte. Limited	Singapore	24-Apr-14	100%	20 Kallang Avenue, #06-6A, Lobby B, Pico Creative Centre, Singapore 339411
Keywords Studios Italy S.R.L.	Italy	08-May-14	100%	Via Egadi 2, Milano, MI, 20144, Italy
Keywords Studios Los Angeles, Inc (Formerly Binari Sonori America, Inc)	USA	08-May-14	100%	350 N. Glenoaks Blvd., Suite 305, Burbank, CA 91502, USA
Binari Sonori Audio Productions LLC	USA	08-May-14	100%	350 N. Glenoaks Blvd., Suite 305, Burbank, CA 91502, USA
Lakshya Digital Private Limited *	India	09-Oct-14	100%	3rd floor, Vardhman Orchard Plaza, Plot No 4, LSC, West Enclave, Pitampura, New Delhi, 110034, India
Edugames Solutions Private Limited	India	09-Oct-14	100%	D – 3/C, Munirka Flats, New Delhi – 110067
Lakshya Digital Singapore Pte. Ltd	Singapore	09-Oct-14	100%	20 Kallang Avenue, #06-6A, Lobby B, Pico Creative Centre, Singapore 339411
Keywords Studios QC-Tech Inc.	Canada (Quebec)	06-Jan-15	100%	1751 Richardson Street Suite 8400 Montreal QC H3K 1G6 Canada
Keywords International Barcelona SL	Spain	09-Jan-15	100%	Passeig de Gràcia 49, 1er2a, 08007 Barcelona, Catalonia, Spain
Keywords do Brasil Localizacao e Traducao Ltda	Brazil	18-Jan-15	100%	Av. Churchill, 109 – Sala 204 – Centro, Rio de Janeiro-RJ, Brazil CEP: 20020-050

Keywords (Shanghai) Information Technology Ltd	China	02-Apr-15	100%	142 Room, Building 7, No.311 Jin Gao Road, Pudong New District, Shanghai
Keywords Studios Spain SLU	Spain	16-Jul-15	100%	Julián Camarillo 6A, 3B, 28037 Madrid, Spain
Kite Team Mex S.de R.L. de. CV (Currently in process of changing name to Keywords Studios Mexico, S. de R.L. de C.V.)	Mexico	16-Jul-15	100%	Av. Insurgentes Sur 1853, Guadalupe Inn, 01020 Ciudad de México, CDMX Mexico
Liquid Development LLC	USA	19-Aug-15	100%	411 SW 2nd Ave #300, Portland, OR 97204, USA
Keywords Asia Private Ltd	Singapore	15-Mar-16	100%	20 Kallang Avenue #06-6A, Lobby B Pico Creative Centre Singapore 339411
Synthesis Deutschland GmbH *	Germany	12-Apr-16	100%	Holstenkamp 46 A, Bahrenfeld, 22525 Hamburg, Germany
Synthesis Global Solutions SAS *	Switzerland	12-Apr-16	100%	Corso Elvezia 16, 6900 Lugano, Ticino, Switzerland
Keywords Studios France SAS	France	08-Jun-16	100%	11 rue Torricelli, 75017 Paris, France
Player Research Ltd	UK	26-Oct-16	100%	201 Temple Chambers, 3-7 Temple Avenue, London, England, EC4Y 0DT
Keywords Studios QC-Interactive Inc.	Canada (Quebec)	16-Nov-16	100%	1751 Richardson Street Suite 8400 Montreal QC H3K 1G6 Canada
SPOV Ltd	UK	16-Feb-17	100%	201 Temple Chambers, 3-7 Temple Avenue, London, England, EC4Y 0DT
Xloc Inc.	USA	08-May-17	100%	712 Presnell Court, Raleigh, NC 27615-1240, USA
GameSim Inc.	USA	16-May-17	100%	12000 Research Parkway, Suite 436, Orlando, FL 32826, USA
Strongbox Ltd	Seychelles	19-May-17	100%	Suites 103, 106 and 107 Premier Building, Victoria, Mahe, Seychelles
Red Hot Software (Shanghai) Ltd	China	19-May-17	100%	Dong Ti Yu Hui Road #860, Building 5, 4th Floor, Shanghai, China
Red Hot Software (Zhengzhou) Ltd	China	19-May-17	100%	Room 207, 11th Floor, Building No. 3, No. 57 Ke Xue Da Dao, Zheng Zhou, He Nan, China
Eastern New Media Limited	Hong Kong	19-May-17	100%	Flat/Rm 4304, 43F, China Resources Building, 26 Harbour Road, Wanchai, Hong Kong
PT Limitless Indonesia	Indonesia	19-May-17	100%	JI. Timoho II, No. 32, Yogyakarta,
Around the Word GmbH	Germany	03-Aug-17	100%	Rosenstrasse 2, D-10178 Berlin
D3T Ltd	UK	19-Oct-17	100%	201 Temple Chambers, 3-7 Temple Avenue, London, England, EC4Y 0DT
Keywords US Holdings Inc	USA	23-Oct-17	100%	1209 Orange Street, Wilmington, New Castle County, Delaware 19801, USA.
Keywords Canada Holdings Inc.	Canada (Quebec)	27-Oct-17	100%	1751 Richardson Street Suite 8400 Montreal QC H3K 1G6 Canada
Keywords Studios BC Inc.	Canada (BC)	27-Oct-17	100%	400-725 Granville Street, Vancouver, BC V7G 1G5, Canada
VMC Consulting Corporation	USA	24-Oct-17	100%	11611 Willows Road NE, Redmond, WA 98052, United States of America
Sperasoft Poland Spólka z.o.o.	Poland	13-Dec-17	100%	Ul. Na Kozłówce 27, 30-664 Kraków, Poland
Sperasoft Studios LLC	Russia	13-Dec-17	100%	196084, Russia, Saint-Petersburg, Kievskaya street, 5 – building
Sperasoft Inc	USA	13-Dec-17	100%	1013 Centre Road, Suite 403-B, Wilmington, DE 19805, USA
Keywords Studios Ltd *	Ireland	27-Mar-18	100%	Whelan House, South County Business Park, Dublin 18, Ireland.
Keywords UK Holdings Limited	UK	28-Mar-18	100%	201 Temple Chambers, 3-7 Temple Avenue, London, England, EC4Y 0DT
Keywords Ventures Limited	UK	06-Apr-18	100%	201 Temple Chambers, 3-7 Temple Avenue, London, England, EC4Y 0DT
Laced Music Ltd	UK	07-Apr-18	100%	201 Temple Chambers, 3-7 Temple Avenue, London, England, EC4Y 0DT
Cord Worldwide Ltd	UK	07-Apr-18	100%	201 Temple Chambers, 3-7 Temple Avenue, London, England, EC4Y 0DT

Cord Artists Management Limited	UK	07-Apr-18	100%	201 Temple Chambers, 3-7 Temple Avenue, London, England, EC4Y 0DT
Paleblue Limited	UK	07-Apr-18	100%	201 Temple Chambers, 3-7 Temple Avenue, London, England, EC4Y 0DT
Fire Without Smoke Ltd	UK	29-May-18	100%	201 Temple Chambers, 3-7 Temple Avenue, London, England, EC4Y 0DT
Fire Without Smoke Inc.	USA	29-May-18	100%	12701 Marblestone Drive, Suite 330, Woodbridge, Virginia, 22192 USA
Blindlight LLC	USA	08-Jun-18	100%	8335 Sunset Blvd. West Hollywood, CA 90069 USA
Snowed In Studios, Inc	Canada (Ontario)	19-Jul-18	100%	400 - 981 Wellington Street West Ottawa, Ontario K1Y 2Y1 Canada
Studio Gobo Limited	UK	17-Aug-18	100%	201 Temple Chambers, 3-7 Temple Avenue, London, England, EC4Y 0DT
Bitsy SG Limited	UK	17-Aug-18	100%	201 Temple Chambers, 3-7 Temple Avenue, London, England, EC4Y 0DT
Electric Square Limited	UK	17-Aug-18	100%	201 Temple Chambers, 3-7 Temple Avenue, London, England, EC4Y 0DT
Alset Ltd	UK	17-Aug-18	100%	201 Temple Chambers, 3-7 Temple Avenue, London, England, EC4Y 0DT
Itsy SGD Limited	UK	17-Aug-18	100%	201 Temple Chambers, 3-7 Temple Avenue, London, England, EC4Y 0DT
d3t Development Ltd	UK	30-Aug-18	100%	201 Temple Chambers, 3-7 Temple Avenue, London, England, EC4Y 0DT
The Trailerfarm Limited	UK	13-Sep-18	100%	201 Temple Chambers, 3-7 Temple Avenue, London, England, EC4Y 0DT
Sunny Side Up Inc.	Canada	03-Jan-19	100%	355 De La Silice Street, Boischatel, Quebec City, G0A 1H0, Canada
AppSecTest Limited	UK	22-Jan-19	48%	Unit 13 Orton Enterprise Centre, Bakewell Road, Peterborough, Cambridgeshire, United Kingdom, PE2 6XU
Keywords Studios Netherlands B.V.	Netherlands	05-Feb-19	100%	Juliana van Stolberglaan 4-10, 2595CL The Hague, the Netherlands
Wizcorp Inc	Japan	18-Apr-19	100%	3-10-14, Higashi-Nihonbashi 3-chome, Sunrise Tachibana 6F, Chuo-ku, Tokyo, Japan
Descriptive Video Works Inc.	Canada	11-Jun-19	100%	400-725 Granville Street, Vancouver, BC V7G 1G5, Canada
Descriptive Video Works USA Inc	USA	11-Jun-19	100%	300 Deschutes Way SW 304, Tumwater, WA, 98501, United States
Keywords Germany Holdings GmbH	Germany	06-Sep-19	100%	Moriz Seeler Straße 5-7, Franz Ehrlich Haus, 12489 Berlin, Germany
TV+SYNCHRON Berlin GmbH	Germany	01-Oct-19	100%	Moriz Seeler Straße 5-7, Franz Ehrlich Haus, 12489 Berlin, Germany
Ichi Holdings Limited	UK	26-Nov-19	100%	201 Temple Chambers, 3-7 Temple Avenue, London, England, EC4Y 0DT
Ichi Limited	UK	26-Nov-19	100%	201 Temple Chambers, 3-7 Temple Avenue, London, England, EC4Y 0DT
Ichi Creative Ltd Inc	USA	26-Nov-19	100%	1679 South DuPont Highway, Suite 100, City of Dover, Kent, 19901, USA
9145 - 9115 Inc	Canada	04-Dec-19	100%	1751 Richardson Office 8400, Montreal, Canada, H3K 1G6
Xcelerator Machine Translations Limited	Ireland	12-Dec-19	100%	Invent, Dublin City University, Glasnevin, Dublin 9, Ireland

* indicates a direct subsidiary (all other holdings are indirect, being subsidiaries of various intermediate group holding companies).

Post acquisition, the Group reviews entities to streamline activities and close any dormant entities acquired or restructured entities. Re-structuring details are set out below:

Name	Country of Incorporation	Date of incorporation / acquisition	Proportion of voting rights and ordinary share capital held	Re-structuring details	Date of re-structuring
Keywords International Corporation Inc.	Canada	22-Dec-10	100%	Merged into Keywords Canada Holdings Inc.	01-Jan-19

Volta Creation Inc.	Canada	28-Jul-16	100%	Merged into Keywords Canada Holdings Inc.	01-Jan-19
Global Video Games Services Inc.	Canada	16-Nov-16	100%	Merged into Keywords Canada Holdings Inc.	01-Jan-19
Sillabit S.R.L	Italy	12-Apr-16	100%	Merged into Keywords Studios Italy S.R.L.	01-Jan-19
Cord World Wide Spain, SL	Spain	07-Apr-18	100%	Dissolved	23-Dec-19

22. Related Parties and Shareholders

Italicatessen Limited, a company registered in Ireland, is related by virtue of a common significant shareholder. P.E.Q. Holdings Limited is 100% owner of Italicatessen Limited. At 31 December 2019, P.E.Q. Holdings Limited owned 5.37% (2018: 6.3%) of the Company. In addition, Mr. Giorgio Guastalla is a Director of Italicatessen Limited, P.E.Q. Holdings Limited and the Company, and owns, or controls, 90% of the share capital of P.E.Q. Holdings Limited.

The following transactions arose with Italicatessen Limited, which provides canteen services to Keywords International Limited, on an arms length basis:

	2019	2018
	€'000	€'000
Operating expenses		
Canteen charges	**73**	44
	73	44

The following are year-end balances owing by the Group:

	2019	2018
	€'000	€'000
Italicatessen Limited	**13**	5
	13	5

The Group paid the following amounts, on an arms length basis, to Mr. Giorgio Guastalla, Director of the Company, and shareholder of P.E.Q. Holdings Limited, in respect of rent on premises occupied by employees of the Group in Dublin.

	2019	2018
	€'000	€'000
Operating expenses		
Rental payment	**25**	22
	25	22

The details of key management compensation (being the remuneration of the Directors) are set out in note 10.

23. Financial Instruments and Risk Management

Interest Rate Risk

Interest rate risk is the risk that the value of financial instruments will fluctuate due to changes in market interest rates. The Group's income and operating cash flows are substantially independent of changes in market interest rates. The management monitors interest rate fluctuations on a continuous basis and acts accordingly.

Where the Group has a significant amount of surplus cash, it invests in higher earning interest deposit accounts.

Due to interest rate conditions, the interest rates for short-term deposits are at similar levels to those achieved for longer-terms.

The effect of a strengthening or a weakening of 1% in interest rates charged during the reporting period on the interest expense would have resulted in the following pre-tax profit / (loss) impact for the year:

	1% Strengthening	**1% Weakening**	1% Strengthening	1% Weakening
	2019	**2019**	2018	2018
	€'000	**€'000**	€'000	€'000
Interest expense	**(503)**	**503**	**(352)**	**352**

Credit Risk

The Group's main financial assets are cash and cash equivalents, as well as trade and other receivables which represent the Group's maximum exposure to credit risk in connection with its financial assets.

Credit risk arises when a failure by counterparties to discharge their obligations could reduce the amount of future cash inflows from financial assets on hand at the reporting date. Credit risk arising in the context of the Group's operations is not significant with the total bad debt provision at the balance sheet date amounting to 3.0% of net trade receivables (2018: 4.6%). Customer credit risk is managed at appropriate Group locations according to established policies, procedures and controls. Customer credit quality is assessed and credit limits are established where appropriate. Outstanding customer balances are regularly monitored and a review for indicators of impairment (evidence of financial difficulty of the customer, payment default, breach of contract etc.) is carried out at each reporting date. Significant balances are reviewed individually while smaller balances are grouped and assessed collectively. Receivables balances are unsecured and non-interest-bearing. The trade receivables balances disclosed comprise a large number of customers spread across the Group's activities and geographies with balances classified as "Not past due" representing 84% of the total trade receivables balance at the balance sheet date (2018: 74%). Trade and other receivables are carried on the Consolidated statement of financial position net of bad debt provisions.

Group Treasury manage bank balances centrally, and monitors the credit rating and stability of the institutions the Group banks with.

The ageing of trade receivables can be analysed as follows:

Group

	Total	Not past due	1-2 months past due	More than 2 months past due
	€'000	€'000	€'000	€'000
At 31 December 2019	**43,243**	**36,208**	**6,136**	**899**
At 31 December 2018	37,019	27,504	7,996	1,519

A provision for doubtful debtors is included within trade receivables and can be reconciled as follows:

	2019	2018
	€'000	€'000
Provision at the beginning of the year	**1,717**	418
Impairment of financial assets (trade receivables) charged to administration expenses	**500**	2,055
Foreign exchange movement in the year	**54**	(30)
Utilised	**(988)**	(726)
Provision at end of the year	**1,283**	1,717

Trade receivables loss allowance is estimated using a practical expedient to arrive at lifetime expected credit losses. Overdue receivables are evaluated to calculate an expected credit loss using a historical credit loss experience of 0.5% (2018: 0.5%). Taking into account internal and external information, the historical credit loss experience may be adjusted where it is determined that there has been a significant increase in credit risk. Where a receivable is credit impaired, the impairment is recognised immediately, and impaired balances are removed from the expected credit loss calculation.

	Total	Not past due	1-2 months past due	More than 2 months past due
	€'000	€'000	€'000	€'000
Trade receivables gross	**44,526**	**36,386**	**6,166**	**1,974**
Credit impaired	**(1,071)**	**-**	**-**	**(1,071)**
Expected credit losses	**(212)**	**(178)**	**(30)**	**(4)**
At 31 December 2019	**43,243**	**36,208**	**6,136**	**899**
Trade receivables gross	39,074	27,874	8,586	2,614
Credit impaired	(1,872)	(234)	(551)	(1,087)
Expected credit losses	(183)	(136)	(39)	(8)
At 31 December 2018	37,019	27,504	7,996	1,519

Related party receivables of €nil were past due at 31 December 2019 (2018: €nil).

Currency Risk

Currency risk is the risk that the value of financial instruments will fluctuate due to changes in foreign exchange rates. The foreign exchange risk arises for the Group where assets and liabilities arise in a currency other than the functional currency of the entity.

The Group's policy, where possible, is for Group entities to manage foreign exchange risk at a local level by matching the currency in which revenue is generated with the expenses incurred and by settling liabilities denominated in their functional currency with cash generated from their own operations in that currency. Where Group entities have liabilities denominated in a currency other than their functional currency (and have insufficient reserves of that currency to settle them), cash already denominated in that currency will, where possible, be transferred from elsewhere within the Group.

The Group is predominantly exposed to currency risk on the balances held within working capital across the Group and the exposure is concentrated in the movement of the Canadian Dollar, US Dollar and Sterling against the Euro. The effect of a strengthening or weakening of 10% in those currencies against the Euro at the reporting date on the working capital balances would, all other variables held constant, have resulted in the following pre-tax profit / (loss) impact for the year:

	10% Strengthening	**10% Weakening**	10% Strengthening	10% Weakening
	2019	**2019**	2018	2018
	€'000	**€'000**	€'000	€'000
US Dollar to Euro	**3,052**	**(2,497)**	2,140	(1,946)
Canadian Dollar to Euro	**1,779**	**(1,455)**	2,026	(1,842)
Sterling to Euro	**1,535**	**(1,256)**	884	(803)

Total Financial Assets and Liabilities

The carrying amount of the financial assets and liabilities shown in the Consolidated statement of financial position are stated at amortised costs, with the exception of contingent consideration held at fair value.

Liquidity Risk

Liquidity risk arises from the Group's management of working capital and the financial charges on its debt instruments.

The Group's policy is to ensure that it will have sufficient cash to allow it to meet its liabilities when they become due. The Directors consider liquidity risk is mitigated by the strong working capital position, with €120m of current assets, including cash of €42m available to settle liabilities as they fall due.

The following are the contractual maturities (representing undiscounted contractual cash flows) of the Group's financial liabilities:

Group

At 31 December 2019	**Total**	**Within 1 year**	**1-2 years**	**2-5 years**	**Over 5 years**
	€'000	**€'000**	**€'000**	**€'000**	**€'000**
Trade payables	**8,027**	**8,027**	**-**	**-**	**-**
Deferred and contingent consideration (i)	**6,035**	**5,966**	**69**	**-**	**-**
Other payables	**32,962**	**32,746**	**216**	**-**	**-**
Loans and borrowings	**59,751**	**80**	**-**	**59,671**	
Loan interest	**102**	**102**	**-**	**-**	**-**
Lease liabilities	**21,907**	**7,741**	**4,770**	**7,382**	**2,014**
Total	**128,784**	**54,662**	**5,055**	**67,053**	**2,014**

At 31 December 2018	Total	Within 1 year	1-2 years	2-5 years	Over 5 years
	€'000	€'000	€'000	€'000	€'000
Trade payables	7,142	7,142	-	-	-
Deferred and contingent consideration (i)	19,306	18,249	1,057	-	-
Other payables	22,909	22,904	5	-	-
Loans and borrowings	40,301	40,071	-	230	-
Loan interest	55	55	-	-	-
Lease liabilities	n/a	n/a	n/a	n/a	n/a
Total	89,713	88,421	1,062	230	-

(i) Deferred and contingent consideration at 31 December 2019 has arisen on business combinations, and is based on set amounts to be paid in the future to sellers under share purchase agreements.

24. Leasing

The Group has entered into leases, across the business, principally relating to property. These property leases have varying terms and renewal rights.

Group

Right of use assets

	2019
	€'000
Cost	
At 1 January 2019	-
Adjustments from adoption of IFRS 16	**23,138**
Additions	**4,315**
Acquisitions through business combinations at fair value	**990**
Currency revaluation	**941**
At 31 December 2019	**29,384**
Accumulated depreciation	
At 1 January 2019	**-**
Depreciation charge	**7,849**
Currency revaluation	**66**
At 31 December 2019	**7,915**
Net book value	
At 1 January 2019	**-**
At 31 December 2019	**21,469**

Lease payments not recognised as a liability

The Group has elected not to recognise a lease liability for short term leases (leases with an expected term of 12 months or less) or for leases of low value assets. Payments made under such leases are expensed on a straight-line basis. The expenses in the period relating to payments not included in the measurement of the lease liability were as follows:

	2019
	€'000
Short-term leases	**1,616**
Leases of low value assets	**-**
	1,616

The future minimum lease payments related to these leases were as follows:

	2019
	€'000
Not later than one year	**651**
Later than one year and not later than five years	**-**
Later than five years	**-**
	651

Lease liabilities

The maturity analysis of the lease liabilities are as follows:

	2019	2019	2019
	€'000	€'000	€'000
	Lease payments	Finance charges	Liabilities
Not later than one year	**8,281**	**582**	**7,741**
Later than one year and not later than five years	**12,321**	**216**	**12,152**
Later than five years	**2,718**	**703**	**2,014**
	23,320	**1,501**	**21,907**

The value of leases not yet commenced to which the lessee is committed, which are not included in lease liabilities at 31 December 2019, were €nil.

The interest expense on the unwinding of the lease liabilities is presented in note 6, while the total cash outflow in relation to leases is presented in the Consolidated statement of cash flows.

Impact analysis

The impact of IFRS 16 on certain key metrics is as follows:

	2019	2019	2019
	€'000	€'000	€ cent
IFRS performance measure	**Operating profit**	**Profit after tax**	**Basic earnings per share**
Calculated with reference to reported performance	**21,542**	**9,909**	**15.23**
Unwinding of liabilities (note 6)	**-**	**694**	**1.07**
Depreciation (note 24)	**7,849**	**7,849**	**12.06**
Leases expenses now reported under IFRS 16	**(8,114)**	**(8,114)**	**(12.47)**
Calculated excluding the impact of IFRS 16	**21,277**	**10,338**	**15.89**

25. Capital Management

Group	**2019**	2018
	€'000	€'000
Loans and borrowings (note 20)	**59,751**	40,301
Less: cash and cash equivalents	**(41,827)**	(39,871)
Net debt / (net cash) position	**17,924**	430
Total equity	**222,958**	192,375
Net debt / (net cash) to capital ratio (%)	8.0%	0.2%

The Group manages capital by monitoring debt to capital and net debt ratios. This debt to capital ratio is calculated as net debt to total equity. Net debt is calculated as loans and borrowings (as shown in the Consolidated statement of financial position) less cash and cash equivalents. The liquidity risk and cash management for the Group is managed centrally by the Group Treasury function. The Board receives projections on a monthly basis as well as information regarding cash balances. The Group's strategy is to preserve a strong cash base and secure access to finance at reasonable cost by maintaining a good credit rating.

26. Deferred Tax

Details of the deferred tax assets and liabilities, and amounts recognised in the Income statement are as follows:

	2019	2019	2019	2019
	€'000	€'000	€'000	€'000
	Assets	Liabilities	Net	(Credited) / charged to income statement
Accelerated capital allowances	-	-	-	**(1)**

Defined benefit termination payments	**50**	**-**	**50**	**16**
Available losses	**1,450**	**-**	**1,450**	**(575)**
Rent free period provisions	**11**	**-**	**11**	**19**
Fixed asset tax base versus accounting book value	**578**	**575**	**3**	**484**
Deferred tax related to tax credits	**474**	**3,637**	**(3,163)**	**695**
Deferred tax arising on items deductible on a paid basis	**2,497**	**1,507**	**990**	**469**
Deferred tax arising on intangibles	**-**	**3,803**	**(3,803)**	**(1,990)**
Net tax assets / (liabilities)	**5,060**	**9,522**	**(4,462)**	**(883)**
Impact of change in tax rates	**-**	**-**	**-**	**(80)**
Prior year (over) / under provision	**-**	**-**	**-**	**(95)**
Total (credited) / charged to income statement	**-**	**-**	**-**	**(1,058)**

	2018 €'000 Assets	2018 €'000 Liabilities	2018 €'000 Net	2018 €'000 (Credited) / charged to income statement
Accelerated capital allowances	-	1	(1)	1
Defined benefit termination payments	66	-	66	(3)
Available losses	875	-	875	40
Rent free period provisions	30	-	30	4
Fixed asset tax base versus accounting book value	558	71	487	(100)
Deferred tax related to tax credits	-	2,468	(2,468)	(112)
Deferred tax arising on items deductible on a paid basis	1,438	155	1,283	(415)
Deferred tax arising on intangibles	-	5,793	(5,793)	(1,448)
Net tax assets / (liabilities)	2,967	8,488	(5,521)	(2,033)
Impact of change in tax rates	-	-	-	(4)
Prior year (over) / under provision	-	-	-	(364)
Total (credited) / charged to income statement	-	-	-	(2,401)

The deferred tax asset not recognised on available losses at the period end is €3.1m (2018: €3.9m).

27. Investment in Associate

	2019 **€'000**	2018 €'000
Opening balance	**160**	-
Investment in AppSecTest Limited	**-**	226
Additional investment in AppSecTest Limited	**114**	-
Share of post tax profit / (loss) of equity accounted associate	**-**	(66)
Recognised as a business combination (note 28)	**(274)**	-
	-	**160**

In May 2018, the Group, through the newly established Keywords Ventures Limited, invested £100k (€114k) for 15% of the share capital of AppSecTest Limited. Incorporated in the UK, AppSecTest is creating a cloud based automatic testing solution for mobile apps, including games (principally for GDPR compliance). A further investment of £100K (€112K) was made in September 2018 bringing the total investment to 30% of the share capital of the company. Following an additional investment on 20 January 2019, the Group considers this to be a business combination, having acquired effective control over the entity.

28. Business Combinations / Acquisitions Completed in the Current Year

	Sunny Side Up	AppSecTest	GetSocial	Wizcorp	Descriptive Video Works	TV+SYNCHRON	Ichi	Syllabes	Kantan	Total
	€'000	€'000	€'000	€'000	€'000	€'000	€'000	€'000	€'000	€'000
Date of acquisition	04-Jan-19	22-Jan-19	21-Feb-19	18-Apr-19	11-Jun-19	01-Oct-19	26-Nov-19	04-Dec-19	12-Dec-19	
Acquisition company jurisdiction	Canada	UK	Netherlands	Japan	Canada	Germany	UK / USA	Canada	Ireland	
Book value of identifiable assets and liabilities										
Property, plant and equipment	44	219	10	37	86	193	18	107	8	722
Right of use assets	-	-	-	178	84	394	-	76	-	732
Intangible assets	-	-	125	-	-	-	-	-	-	125
Trade and other receivables - gross	84	2	-	377	165	161	205	81	484	1,559
Bad debt provision	-	-	-	-	-	-	-	-	-	-
Cash and cash equivalents	338	67	-	297	93	424	512	-	381	2,112
Trade and other payables	(218)	(18)	(19)	(847)	(83)	(530)	(347)	(105)	(1,128)	(3,295)
Lease liabilities	-	-	-	(178)	(84)	(394)	-	(76)	-	(732)
Loan	-	-	-	-	-	(402)	-	-	-	(402)
Net book value	248	270	116	(136)	261	(154)	388	83	(255)	821
Fair value adjustments										
Identifiable intangible assets - development costs	-	-	-	-	-	-	-	-	1,490	1,490
Identifiable tangible assets	-	-	-	-	-	-	-	41	-	41
Pension liability - adjustment	-	-	-	-	-	-	-	-	432	432
Deferred tax liabilities	-	-	-	-	-	-	-	-	-	-
Total fair value adjustments	-	-	-	-	-	-	-	41	1,922	1,963
Total identifiable assets	248	270	116	(136)	261	(154)	388	124	1,667	2,784
Non-controlling interest	-	(148)	-	-	-	-	-	-	-	(148)
Attributable to Keywords	248	122	116	(136)	261	(154)	388	124	1,667	2,636
Goodwill	3,845	152	54	1,088	1,864	3,660	3,598	199	2,490	16,950
Total consideration	4,093	274	170	952	2,125	3,506	3,986	323	4,157	19,586
% Share capital acquired	100%	48%	Asset purchase	100%	100%	100%	100%	Asset purchase	100%	
Satisfied by:										
Cash	3,342	274	170	952	1,373	2,606	2,866	197	3,543	15,323
Deferred cash	-	-	-	-	112	-	-	126	-	238
Deferred cash contingent on performance	-	-	-	-	-	-	-	-	-	-
Shares to be issued	751	-	-	-	640	900	1,120		614	4,025
Total consideration transferred	4,093	274	170	952	2,125	3,506	3,986	323	4,157	19,586
Number of shares										
Issued at the date of acquisition	-	-	-	-	-	-	-	-	-	-
Fixed amount agreed to be issued	60,179	-	-	-	35,560	68,608	70,246	-	41,382	275,975

Net cash outflow arising on acquisition	Sunny Side Up	AppSecTest	GetSocial	Wizcorp	Descriptive Video Works	TV+SYNCHRON	Ichi	Syllabes	Kantan	Total 2019
	€'000	€'000	€'000	€'000	€'000	€'000	€'000	€'000	€'000	€'000
Cash paid in 2019	3,342	114	170	952	1,373	2,606	2,866	197	3,543	15,163
Less: cash and cash equivalent balances transferred	(338)	(67)	-	(297)	(93)	(424)	(512)	-	(381)	(2,112)
Net cash outflow - acquisitions	3,004	47	170	655	1,280	2,182	2,354	197	3,162	13,051
Related acquisition costs charged through to the Consolidated Statement of Comprehensive Income	101	-	7	36	69	151	35	1	135	535
Pre-acquisition revenue in H1	-	-	25	656	558	1,285	1,859	217	309	4,909

Pre-acquisition revenue in H2	-	-	-	-	-	1,006	700	199	353	2,258
Pre-acquisition revenue with Keywords Group	-	-	-	-	-	(68)	-	-	-	(68)
Post-acquisition revenue	2.378	-	142	1,202	852	1,245	175	50	22	6,066
Pro forma revenue	**2,378**	**-**	**167**	**1,858**	**1,410**	**3,468**	**2,734**	**466**	**684**	**13,165**
Pre-acquisition profit / (loss) before tax	-	-	(23)	1	7	(146)	480	28	(196)	151
Post-acquisition profit / (loss) before tax	701	(202)	(755)	(563)	273	413	(28)	3	(12)	(170)
Pro forma profit / (loss) before tax	**701**	**(202)**	**(778)**	**(562)**	**280**	**267**	**452**	**31**	**(208)**	**(19)**

The acquisitions made in the year are in line with the Group's strategy to grow organically and by acquisition, as it selectively consolidates the highly fragmented market for video game services. The companies will bring additional talent, expertise and industry experience to Keywords' client base. Being able to offer the additional services to our clients will further enhance our reputation as the leading provider of services to the global video games industry.

The amounts recognised in respect of the identifiable assets acquired and liabilities assumed of acquisitions in the year are set out in the table above.

The main factors leading to the recognition of goodwill on the acquisitions are the presence of certain intangible assets in the acquired entities, which are not valued for separate recognition, such as the experience and expertise in:

- producing trailers for the marketing and support of video games in Sunny Side Up.
- social media technology for the games industry in GetSocial.
- engineering services in Wizcorp, in particular for the mobile development market in Japan.
- audio description services for broadcast and over the top streamed programming in Descriptive Video Works.
- dubbing and localising into German across a range of entertainment formats in TV+SYNCHRON.
- creative and marketing services to the video games, sports and entertainment sectors globally in Ichi.
- audio recording and casting services in French and English for the video games industry and media and entertainment customers in Syllabes.
- automated translation technology in Kantan.

The total amount of goodwill arising on business combinations completed in 2019, that is expected to be deductible for tax purposes was €nil.

29. Supplementary Information to the Consolidated Statement of Cash Flows

Group movement on Loans

	Current	Non-current	Total
	€'000	€'000	€'000
At 1 January 2018	18,943	337	19,280
Cash flows:			
Cash received via additional loans in the year	31,850	-	31,850
Repayment of loans	(10,835)	-	(10,835)
Non-cash flows:			
Amounts recognised on business combinations	6	-	6
Non-current transferred to current	107	(107)	-
At 31 December 2018	**40,071**	**230**	**40,301**
Re-designated from current to non-current	**(40,000)**	**40,000**	**-**
Cash flows:			
Cash received via additional loans in the year	**-**	**27,000**	**27,000**
Loans acquired on acquisition (note 28)	**-**	**402**	**402**
Repayment of loans	**(71)**	**(7,902)**	**(7,973)**
Non-cash flows:			
Foreign exchange difference on Canadian loans	**-**	**21**	**21**
Non-current transferred to current	**80**	**(80)**	**-**
At 31 December 2019	**80**	**59,671**	**59,751**

As explained in note 20, following the renegotiation of the RCF, the Group has re-designated these borrowings as non-current.

30. Events after the Reporting Date

Since the year end the Group's operations have been significantly impacted by the COVID 19 pandemic. This has resulted in restrictions being put in place requiring most of the Group's studios to be temporarily closed. The Group has been able to move over 5,500 employees to work from home arrangements and whilst this has resulted in some short term disruption it has allowed production to continue across most of the Group's operations.

In consultation with clients, the Group continues to make preparations to move more of the production staff to this model, particularly in the Testing business (Functional and Localisation Testing) with the aim of establishing a new model of testing from home, where testing had previously been conducted from secure facilities.

It is very difficult to predict how long the studio closures will be in place for, but demand for the Group's services remain robust, the broader video games industry has historically shown resilience in times of economic downturn and the Group has the ability to flex its cost base in response to a reduction in trading activity.

Alternative Performance Measures

The Group reports a number of alternative performance measures (APMs) to present the financial performance of the business, that are not GAAP measures as defined under IFRS. The Directors believe that these measures, in conjunction with the IFRS financial information, provide the users of the financial statements with additional information to provide a more meaningful understanding of the underlying financial and operating performance of the Group. The measures are also used in the Group's internal strategic planning and budgeting processes and for setting internal management targets. These measures can have limitations as analytical tools and therefore should not be considered in isolation, or as a substitute for IFRS measures.

The principal measures used by the Group are set out below:

Organic revenue growth – Acquisitions are a core part of the Group's growth strategy. Organic revenue growth measures are used to help understand the underlying trading performance of the Group excluding the impact of acquisitions. Organic revenue growth is calculated by adjusting the prior year revenues, adding pre-acquisition revenues for the corresponding period of ownership to provide a like for like comparison with the current year, and applying the prior year's (2018) foreign exchange rates to both years.

Constant exchange rates (CER) – Given the international nature of the Group's operations, foreign exchange movements can have an impact on the reported results of the Group when they are translated into the Group's reporting currency of Euros. In order to understand the underlying trading performance of the business, revenue is also presented using rates consistent with the prior year in order to provide year over year comparability.

Adjusted profit and earnings per share measures – Adjusted profit and earnings per share measures are used to provide management and other users of the accounts with a clear understanding of the underlying profitability of the business over time. Adjusted profit measures are calculated by adding the following items back to the equivalent GAAP profit measures:

- **Amortisation of intangible assets** – Customer relationships and music licence amortisation commences on acquisition, whereas intellectual property / development costs amortisation commences when the product is launched. These costs, by their nature, can vary by size and amount each year. As a result, amortisation of intangibles is added back to assist with the understanding of the underlying trading performance of the business and to allow comparability across regions and categories.
- **Costs of acquisition and integration** – The level of acquisition activity can vary each year and therefore the costs associated with acquiring and integrating businesses are added back to assist with the understanding of the underlying trading performance of the Group.
- **Share-based payments** – The Group uses share-based payments as part of remuneration to align the interests of senior management and employees with shareholders. These are non-cash charges and the charge is based on the Group's share price which can change. The costs are therefore added back to assist with the understanding of underlying trading performance.
- **Foreign exchange gains and losses** – The Group does not hedge foreign currency translation exposures. The effect on the Group's results of movements in exchange rates can vary each year and are therefore added back to assist with understanding the underlying trading performance of the business.

Free cash flow measure - The Group aims to generate sustainable cash flow (Free cash flow) in order to support its acquisition program and to fund dividend payments to shareholders. Free cash flow is measured as net cash provided by operating activities after deducting acquisition and integration cash outlay, capital expenditure, tax and interest payments.

IFRS 16 Leasing – The new leasing standard, IFRS 16 is effective from 1 January 2019 and has been adopted from that date with no restatement of prior year comparatives required. The new standard has not had a material impact on either adjusted profit before tax or the underlying net cash flows of the business but it has changed the presentation of the Consolidated statement of comprehensive income, the Consolidated statement of cash flows and the Consolidated statement of financial position. In order to aid the users of the accounts we have presented the current year APMs excluding the impact of IFRS 16 to aid comparability with the prior year comparatives.

The remainder of this section provides a reconciliation of the APMs with the relevant IFRS GAAP equivalent.

Service line analysis

The following table presents revenue growth by service line at both actual exchange rates (AER) and constant exchange rates (CER). Constant exchange rates are calculated by retranslating current year reported numbers at the full year average exchange rates for the prior year, in order to give management and other users of the accounts better visibility of underlying trading performance against the prior period.

	2019 Revenue	2019 Revenue	2018* Revenue	Change from FY 2018	Change from FY 2018
	AER	CER	AER	AER	CER
	€m	€m	€m	%	%
Art creation*	43.6	41.5	34.0	28.2%	22.1%
Game development (previously Engineering)*	66.3	64.4	35.2	88.4%	83.0%
Audio	40.5	39.8	34.2	18.4%	16.4%
Functional testing*	68.9	65.6	47.8	44.1%	37.2%
Localisation	48.5	47.3	44.0	10.2%	7.5%

Localisation testing	22.6	21.9	19.7	14.7%	11.2%
Player support	36.1	34.2	35.9	0.6%	(4.7%)
	326.5	314.7	250.8	30.2%	25.5%

*The prior year comparative has been re-classified to reflect the current year presentation as the Directors consider this to be more meaningful.

Pro forma revenue

Pro forma revenue is calculated by adding pre-acquisition revenues of current year acquisitions, excluding any pre-acquisition revenues with the Keywords Group, to the current year revenue numbers.

	2019 Revenue at AER	2019 Pre-acquisition revenue AER	2019 Pro forma Revenue AER
	€m	€m	€m
Art creation	43.6	2.5	46.1
Game development (previously Engineering)	66.3	0.7	67.0
Audio	40.5	3.2	43.7
Functional testing	68.9	-	68.9
Localisation	48.5	0.7	49.2
Localisation testing	22.6	-	22.6
Player support	36.1	-	36.1
	326.5	7.1	333.6

Organic revenue at constant exchange rates

Organic revenue at constant exchange rates is calculated by adjusting the prior year revenues, adding pre-acquisition revenues for the corresponding period of ownership, and applying the 2018 foreign exchange rates in both years.

	2018* Revenue at AER	2018 Pre-acquisition revenue	2018 Like for like revenue	Revenue growth	2019 Revenue at CER	2019 Organic revenue growth
	€m	€m	€m	€m	€m	%
Art creation*	34.0	4.9	38.9	2.6	41.5	6.7%
Game development (previously Engineering)*	35.2	12.0	47.2	17.2	64.4	36.4%
Audio	34.2	4.7	38.9	0.9	39.8	2.3%
Functional testing*	47.8	0.1	47.9	17.7	65.6	37.0%
Localisation	44.0	-	44.0	3.3	47.3	7.5%
Localisation testing	19.7	-	19.7	2.2	21.9	11.2%
Player support	35.9	-	35.9	(1.7)	34.2	(4.7%)
	250.8	21.7	272.5	42.2	314.7	15.5%

*The prior year comparative has been re-classified to reflect the current year presentation as the Directors consider this to be more meaningful.

Adjusted operating costs

This comprises Administrative expenses as reported on the Consolidated statement of comprehensive income adding back amortisation of intangible assets, share option expense, costs of acquisitions and integration, depreciation, non-controlling interest and deducting bank charges.

Calculation	Reference in Financial Statements	2019 Reported €'000	2019 IFRS 16 Adj €'000	2019 Pre IFRS 16 €'000	2018 €'000
Administrative expenses	Consolidated statement of comprehensive income	(98,687)	(265)	(98,952)	(73,123)
Share option expense	Consolidated statement of comprehensive income	9,775	-	9,775	4,129
Costs of acquisition and integration	Consolidated statement of comprehensive income	4,348	-	4,348	5,296
Amortisation of intangible assets	Consolidated statement of comprehensive income	7,318	-	7,318	6,872
Depreciation - property plant and equipment	Note 13	7,295	-	7,295	5,316
Depreciation - right of use assets	Note 24	7,849	(7,849)	-	-
Non-controlling interest	Consolidated statement of comprehensive income	113	-	113	-
Bank charges	Note 6	(629)	-	(629)	(503)
Adjusted operating costs		**(62,618)**	**(8,114)**	**(70,732)**	**(52,013)**
Revenue from contracts with customers	Consolidated statement of comprehensive income	326,463		326,463	250,805
Adjusted operating costs as a % of revenue		**19.2%**		**21.7%**	**20.7%**

Adjusted operating profit

The adjusted operating profit consists of the Operating profit adjusted for amortisation of intangible assets, share option expense and costs of acquisition and integration.

Calculation	Reference in Financial Statements	2019 Reported €'000	2019 IFRS 16 Adj €'000	2019 Pre IFRS 16 €'000	2018 €'000
Operating profit	Consolidated statement of comprehensive income	21,542	(265)	21,277	22,685
Share option expense	Consolidated statement of comprehensive income	9,775	-	9,775	4,129

Costs of acquisition and integration	Consolidated statement of comprehensive income	4,348	-	4,348	5,296
Amortisation of intangible assets	Consolidated statement of comprehensive income	7,318	-	7,318	6,872
Adjusted operating profit		**42,983**	**(265)**	**42,718**	**38,982**
Revenue from contracts with customers	Consolidated statement of comprehensive income	326,463		326,463	250,805
Adjusted operating profit as a % of revenue		**13.2%**		**13.1%**	**15.5%**

EBITDA

EBITDA comprises Operating profit, adjusted for amortisation of intangible assets, depreciation, while deducting the share of profit from associates and bank charges.

Calculation	Reference in Financial Statements	2019 Reported €'000	2019 IFRS 16 Adj €'000	2019 Pre IFRS 16 €'000	2018* €'000
Operating profit	Consolidated statement of comprehensive income	21,542	(265)	21,277	22,685
Amortisation of intangible assets	Consolidated statement of comprehensive income	7,318	-	7,318	6,872
Depreciation on property plant & equipment	Note 13	7,295	-	7,295	5,316
Depreciation on right of use assets	Note 24	7,849	(7,849)	-	-
Share of profit from associates	Consolidated statement of comprehensive income	-	-	-	(66)
Bank charges	Note 6	(629)	-	(629)	(503)
EBITDA		**43,375**	**(8,114)**	**35,261**	**34,304**

*The prior year comparative has been re-classified to reflect the current year presentation as the Directors consider this to be more meaningful.

Adjusted EBITDA

Adjusted EBITDA comprises EBITDA, adjusted for share option expense, costs of acquisition and integration and non-controlling interest.

Calculation	Reference in Financial Statements	2019 Reported €'000	2019 IFRS 16 Adj €'000	2019 Pre IFRS 16 €'000	2018* €'000
EBITDA	As above	43,375	(8,114)	35,261	34,304
Share option expense	Consolidated statement of comprehensive income	9,775	-	9,775	4,129
Costs of acquisition and integration	Consolidated statement of comprehensive income	4,348	-	4,348	5,296
Non-controlling interest	Consolidated statement of comprehensive income	113	-	113	-
Adjusted EBITDA		**57,611**	**(8,114)**	**49,497**	**43,729**
Revenue from contracts with customers	Consolidated statement of comprehensive income	326,463		326,463	250,805
Adjusted EBITDA as a % of revenue		**17.6%**		**15.2%**	**17.4%**

*The prior year comparative has been re-classified to reflect the current year presentation as the Directors consider this to be more meaningful.

Adjusted profit before tax

Adjusted profit before tax comprises Profit before taxation as reported on the Consolidated Statement of Comprehensive Income, adjusted for costs including amortisation of intangible assets, share option expense, costs of acquisitions and integration, foreign exchange gains and losses, non-controlling interest and unwinding of discounted liabilities.

Calculation	Reference in Financial Statements	2019 Reported €'000	2019 IFRS 16 Adj €'000	2019 Pre IFRS 16 €'000	2018* €'000
Profit before tax	Consolidated statement of comprehensive income	17,371	437	17,808	22,094
Amortisation of intangible assets	Consolidated statement of comprehensive income	7,318	-	7,318	6,872
Share option expense	Consolidated statement of comprehensive income	9,775	-	9,775	4,129
Costs of acquisition and integration	Consolidated statement of comprehensive income	4,348	-	4,348	5,296
Foreign exchange (gain) / loss	Note 6	1,658	(7)	1,651	(791)
Non-controlling Interest	Consolidated statement of comprehensive income	113	-	113	-
Unwinding of discounted liabilities - deferred consideration	Note 6	330	-	330	311
Adjusted profit before tax		**40,913**	**430**	**41,343**	**37,911**
Revenue from contracts with customers	Consolidated statement of comprehensive income	326,463		326,463	250,805
Adjusted profit before tax as a % of revenue		**12.5%**		**12.7%**	**15.1%**

*The prior year comparative has been re-classified to reflect the current year presentation as the Directors consider this to be more meaningful.

Adjusted effective tax rate

The adjusted effective tax rate is the tax expense as reported on the Consolidated Statement of Comprehensive Income, adjusted for the tax impact of the adjusting items in arriving at adjusted profit before tax, as a percentage of the adjusted profit before tax.

Calculation	Reference in Financial Statements	2019 Reported €'000	2019 IFRS 16 Adj €'000	2019 Pre IFRS 16 €'000	2018* Restated €'000
Adjusted profit before tax	As above	40,913	430	41,343	37,911
Tax expense	Consolidated statement of comprehensive income	7,462	-	7,462	7,191

Effective tax rate before tax on adjusting items	Calculation; Tax expense / Adjusted profit before tax	**18.2%**		**18.0%**	**19.0%**
Tax arising on bridging items to adjusted profit before tax **		1,703	-	1,703	1,448
Adjusted tax expense		9,165	-	9,165	8,639
Adjusted effective tax rate	Calculation; Adjusted tax expense / Adjusted profit before tax	**22.4%**		**22.2%**	**22.8%**

**The prior year comparative has been restated to reflect the tax impact of the bridging items to adjusted profit before tax as the Directors consider this to be more meaningful.*
***Being mainly amortisation of intangible assets €1,605k (2018: €1,448k)*

Adjusted earnings per share

The adjusted profit after tax comprises the adjusted profit before tax, less the tax expense as reported on the Consolidated Statement of Comprehensive Income, adjusted for the tax impact of the adjusting items in arriving at adjusted profit before tax.

The adjusted earnings per share comprises the adjusted profit after tax divided by the non-diluted weighted average number of shares as reported in note 8.

Calculation	Reference in Financial Statements	**2019 Reported €'000**	**2019 IFRS 16 Adj €'000**	**2019 Pre IFRS 16 €'000**	**2018* Restated €'000**
Adjusted profit before tax	As above	40,913	430	41,343	37,911
Tax expense	Consolidated statement of comprehensive income	(7,462)	-	(7,462)	(7,191)
Tax arising on bridging items to adjusted profit before tax **		(1,703)	-	(1,703)	(1,448)
Adjusted profit after tax		31,748	430	32,178	29,272
Denominator (weighted average number of equity shares)	Note 8	**65,081,403**	65,081,403	65,081,403	64,335,162
		2019 Reported € c per share	**2019 IFRS 16 Adj € c per share**	**2019 Pre IFRS 16 € c per share**	**2018* € c per share**
Adjusted earnings per share	Calculation; Adjusted profit after tax / weighted average number of shares	**48.78**	**0.66**	**49.44**	**45.50**
Adjusted earnings per share % growth		**7.2%**		**8.7%**	**45.9%**

**The prior year comparative has been restated to reflect the tax impact of the bridging items to adjusted profit before tax as the Directors consider this to be more meaningful.*
***Being mainly amortisation of intangible assets €1,605k (2018: €1,448k)*

Return on capital employed (ROCE)

ROCE represents the adjusted profit before tax expressed as a percentage of the average total capital employed. As the Group continues to make multiple acquisitions each year, the calculation adjusts the profit before tax and the capital employed as if all the acquisitions made during each year were made at the start of that year.

Total adjusted Profit before tax comprises adjusted Profit before tax, plus net interest costs, unwinding of discounted liabilities, bank charges, and pre-acquisition profits of current year acquisitions.

Capital employed represents equity as reported on the statement of financial position adding back retirement benefits, cumulative amortisation of intangible assets, acquisition related liabilities and net borrowings.

Calculation	Reference in Financial Statements	**2019 Reported €'000**	**2019 IFRS 16 Adj €'000**	**2019 Pre IFRS 16 €'000**	**2018 €'000**
Adjusted profit before tax	As above	40,913	430	41,343	37,911
Interest received	Note 6	(74)	-	(74)	-
Interest expense	Note 6	934	-	934	502
Unwinding of discounted liabilities - lease liabilities	Note 6	694	(694)	-	-
Bank charges	Note 6	629	-	629	503
Pre-acquisition profits of current year acquisitions	Note 28	151	-	151	4,896
Adjusted profit before tax including pre acquisition profit excluding interest		**43,247**	**(264)**	**42,983**	**43,812**
Total equity	Consolidated statement of financial position	222,958	2,435	225,393	192,375
Retirement benefits	Note 19	2,049	-	2,049	1,378
Cumulative amortisation of intangibles assets	Note 12	20,017	-	20,017	12,786
Acquisition related liabilities	Note 18	6,035	-	6,035	19,306
Loans and borrowings	Note 20	59,751	1	59,752	40,301
Cash and cash equivalents	Consolidated statement of financial position	(41,827)	-	(41,827)	(39,871)
Capital employed		**268,983**	**2,436**	**271,419**	**226,275**
Return on capital employed	Adjusted profit before tax including pre acquisition profit excluding interest expense / average capital employed	**16.1%**	**(0.3%)**	**15.8%**	**19.4%**

Free cash flow

Free cash flow represents net cash flow provided by operating activities adjusted for capital expenditure, acquisition and integration cash outlay and interest payments, and is presented both before and after tax.

Calculation	Reference in Financial Statements	2019 Reported €'000	2019 IFRS 16 Adj €'000	2019 Pre IFRS 16 €'000	2018* Restated €'000
Net cash provided by operating activities	Consolidated statement of cash flows	32,781	(8,049)	24,732	27,650
Acquisition and integration cash outlay:					
Costs of acquisition and integration	Consolidated statement of comprehensive income	4,348	-	4,348	5,296
Fair value adjustments to contingent consideration	Consolidated statement of cash flows	(493)	-	(493)	(766)
Acquisition of property, plant and equipment	Consolidated statement of cash flows	(13,145)	-	(13,145)	(9,440)
Investment in intangible assets	Consolidated statement of cash flows	(391)	-	(391)	(1,599)
Interest received	Consolidated statement of cash flows	74	-	74	-
Interest paid	Consolidated statement of cash flows	(2,130)	694	(1,436)	(502)
Free cash flow after tax		**21,044**	**(7,355)**	**13,689**	**20,639**
Income taxes paid	Consolidated statement of cash flows	13,288	-	13,288	6,304
Free cash flow before tax		**34,332**	**(7,355)**	**26,977**	**26,943**

*The prior year comparative has been restated to reflect the current year presentation as the Directors consider this to be more meaningful.

Adjusted free cash flow

Adjusted free cash flow is a measure of cash flow adjusting for capital expenditure that is supporting growth in future periods (as measured by capital expenditure in excess of maintenance capital expenditure). This is represented by free cash flow before tax, plus capital expenditure in excess of depreciation.

Calculation	Reference in Financial Statements	2019 Reported €'000	2019 IFRS 16 Adj €'000	2019 Pre IFRS 16 €'000	2018* Restated €'000
Free cash flow before tax	As above	34,332	(7,355)	26,977	26,943
Capital expenditure in excess of depreciation:					
Acquisition of property, plant and equipment	Consolidated statement of cash flows	13,145	-	13,145	9,440
Depreciation	Consolidated statement of cash flows	(15,144)	7,849	(7,295)	(5,316)
Capital expenditure in excess of depreciation		(1,999)	7,849	5,850	4,124
Adjusted free cash flow		**32,333**	**494**	**32,827**	**31,067**

*The prior year comparative has been restated to reflect the current year presentation as the Directors consider this to be more meaningful.

Adjusted cash conversion rate

Adjusted cash conversion rate is the adjusted free cash flow as a percentage of the adjusted profit before tax:

Calculation	Reference in Financial Statements	2019 Reported €'000	2019 IFRS 16 Adj €'000	2019 Pre IFRS 16 €'000	2018* Restated €'000
Adjusted free cash flow	As above	32,333	494	32,827	31,067
Adjusted profit before tax	As above	40,913	430	41,343	37,911
Adjusted cash conversion ratio	**Free cash flow before tax and capital expenditure adjusted as a % of adjusted profit before tax**	**79.0%**		**79.4%**	**81.9%**

*The prior year comparative has been restated to reflect the current year presentation as the Directors consider this to be more meaningful.

Annual report and accounts

The annual report and accounts will be posted to shareholders shortly and will be available to members of the public at the Company's registered office at 201 Temple Chambers, 3 – 7 Temple Avenue, London EC4Y 0DY and on the Company's website http://www.keywordsstudios.com/en/investors/investment-proposition.

Annual General Meeting

The Annual General Meeting of Keywords Studios plc will be held on 27 May 2020.