Keywords STUDIOS

Annual Report and Accounts 2019

Building our platform for growth

2019 Highlights

Our vision is to be the world's leading technical and creative services platform for the video games industry and beyond.

At Keywords Studios (Keywords), we are using our passion for games, technology and media to create a global services platform.

In 2019, we delivered strong growth as we invested in a strengthened and more diversified services platform.

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 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 see pages 135 to 143. Please note, to aid comparability, these explanations also present the current year APMs excluding the impact of IFRS 16, and also highlight where a number of APMs have been restated to reflect the current year presentation.

Governance

Financial statements

Supplementary information

Revenue
(€m)

2019 326.5
2018 250.8
2017 151.4

€326.5m ^ 30.2%

EBITDA*
(€m)

2019 43.4
2018 34.3
2017 21.9

€43.4m ^ 26.4%

Margin 13.3% (2018: 13.7%)

Profit before tax
(€m)

2019 17.4
2018 22.1
2017 12.0

€17.4m v 21.4%

Margin 5.3% (2018: 8.8%)

Organic Revenue growth*
(€m)

2019 314.7
2018 272.5m

^ **15.5%**

(2018: 10.1%)

Adjusted EBITDA (pre IFRS 16)*
(€m)

2019 49.5
2018 43.7
2017 26.3

€49.5m ^ 13.2%

Margin 15.2% (2018: 17.4%)

Adjusted profit before tax*
(€m)

2019 40.9
2018 37.9
2017 23.0

€40.9m ^ 7.9%

Margin 12.5% (2018: 15.1%)

Basic earnings per share
(c)

2019 15.23
2018 23.16
2017 12.37

15.23c v 34.2%

Adjusted earnings per share*
(c)

2019 48.78
2018 45.50
2017 31.18

48.78c ^ 7.2%

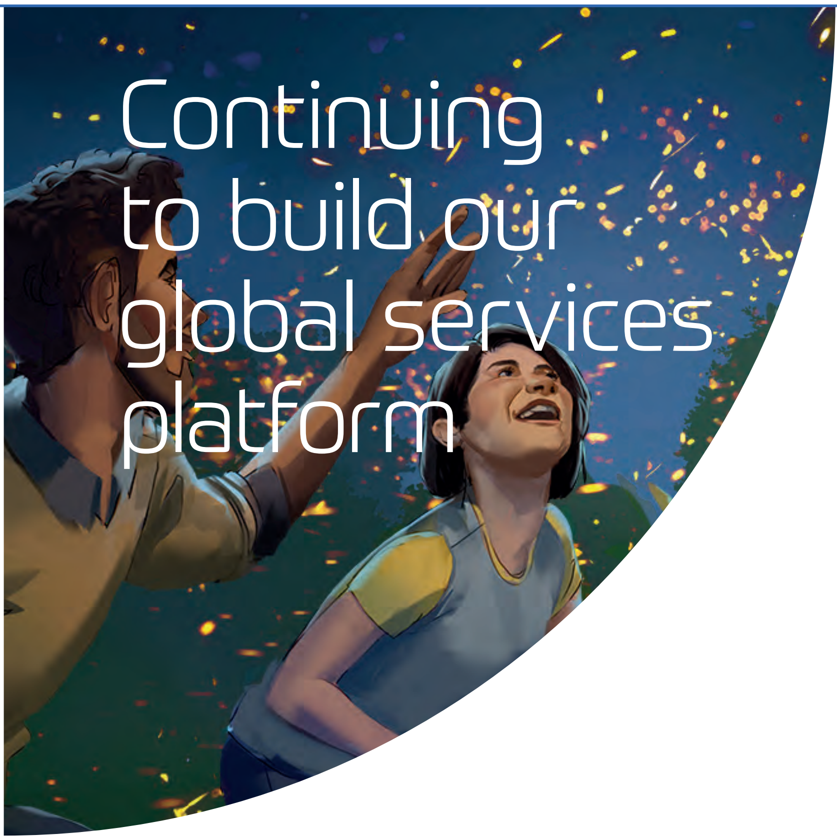
Total dividend per share
(p)

2019 0.58
2018 1.61
2017 1.46

0.58p v 64%

At a glance

23
out of the top 25 games companies are serviced by Keywords



Keywords Studios now has 59 studios, in over 40 cities, across 21 different countries worldwide. We provide a full set of integrated services, combining a presence that is local to our clients in key gaming clusters with good access to skilled talent pools across four continents.

Throughout 2019, we have continued to invest behind growing demand. We have expanded our existing facilities and created new operating bases, while also adding capabilities and capacity through acquisitions. We added over 1,400 workstations in the period and welcomed 8 new businesses to the Group. All of this targeted investment has increased our scale, extended our global footprint, brought us closer to our clients and prospective talent, while adding to the vision of becoming the 'go to' external development partner to the video games industry.

A full set of integrated services

Keywords Studios is building world-leading capabilities in services that video game and similar interactive content creators need. We stand shoulder-to-shoulder with our customers working as their external development partner to provide dedicated outsourced or embedded services, providing access to our teams of experts where and when needed. Today we have breadth and depth in seven service lines.

Revenue breakdown by service:

Art Creation

The creation of video game graphical art, including concept art, 2D and 3D art asset production and animation. Marketing services include game trailers, marketing art and materials, and full brand campaign strategies.

Revenue
2019 €43.6m
+28%
Year on year growth

Game Development

Game development services including full game development, co-development, porting of games from one platform to another including remastering, tool development and consulting services on a work-for-hire basis. This also includes our proprietary software solutions for analytics, social media integration, procedural generation of art assets and player behaviour research consulting services.

Revenue
2019 €66.3m
+88%
Year on year growth

Audio

Multi-language voiceover recording, original language voice production, music management, sound effects and related services.

Revenue
2019 €40.5m
+18%
Year on year growth

Functional Testing

Quality assurance, including discovery and documentation of game defects and testing to verify the game's compliance with hardware manufacturers' and distribution platforms' specifications, as well as crowd based and focus group testing solutions.

Revenue
2019 €68.9m
+44%
Year on year growth

Localization

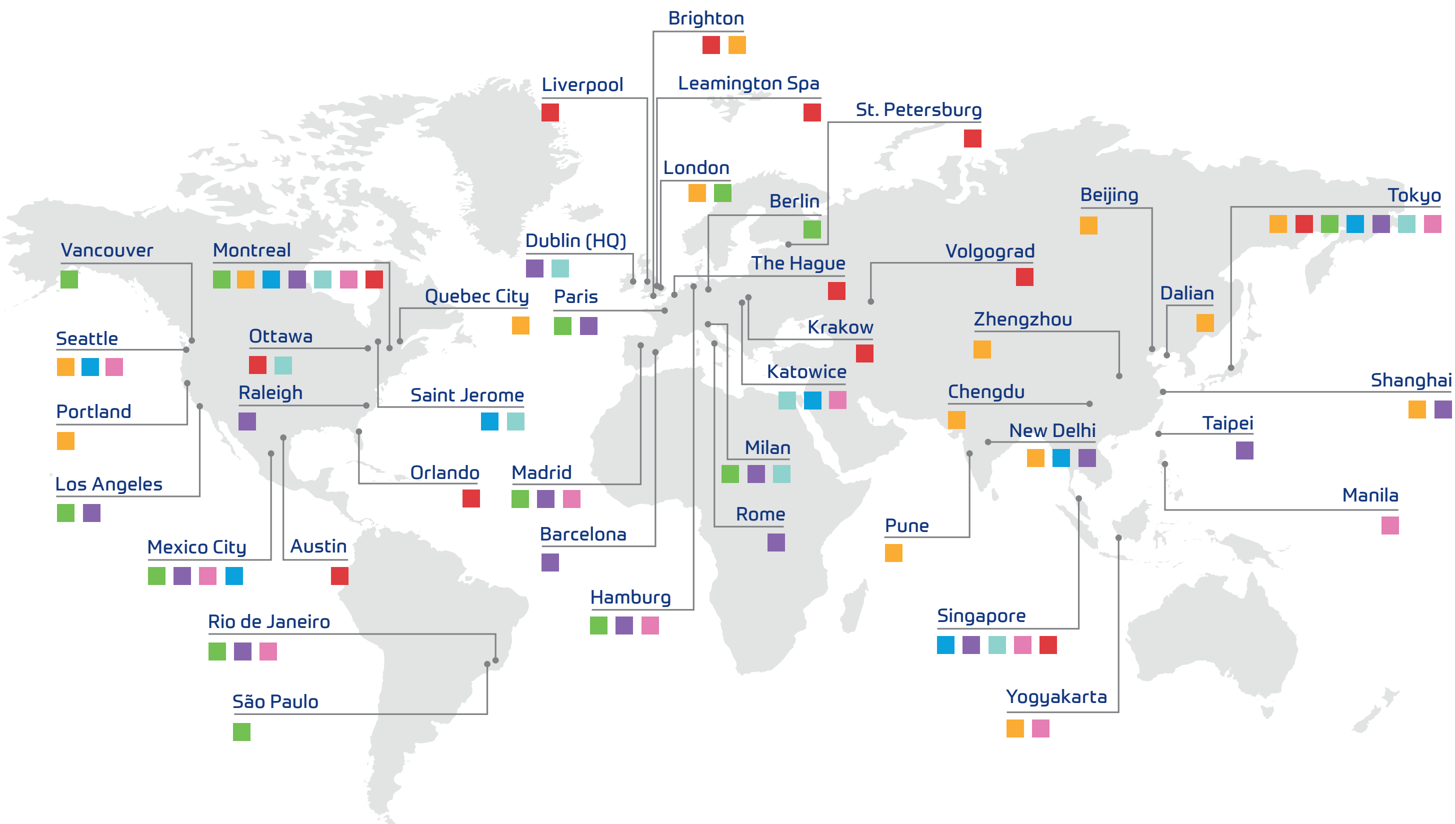
Translation of in-game text, audio scripts, cultural and local adaptation, accreditation, packaging and marketing materials in over 50 languages. Includes our proprietary technologies for content management, machine translation, and workflow management.

Revenue
2019 €48.5m
+10%
Year on year growth

50+
languages across our services

59
studios in 21 countries

7,424
average number of employees in 2019



Better balanced business higher up the value chain

Localization Testing

Testing for out of context translations, truncations, overlaps, spelling, grammar, age rating issues, geopolitical and cultural sensitivities and console manufacturer compliance requirements in over 30 languages using native speakers.

Revenue

2019 €22.6m

+15%
Year on year growth

Player Support

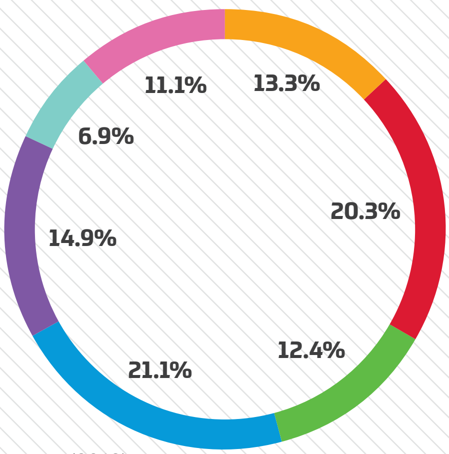
365/24/7, multilingual support for gamers when games are in live operation, forum monitoring and moderation services and social media engagement on behalf of the game brand.

Revenue

2019 €36.1m

+1%
Year on year growth

Business representation by each service:



Revenue (2019)
€326.5m

+30.2%
Year on year growth

Investment summary

Strengthened platform in a growth market

Access to a dynamic growth market

Keywords operates in a dynamic growth market but has minimal direct exposure to the successes or failures of individual game titles. Our focus on content means we are platform agnostic and well positioned to take advantage of the opportunities presented by mobile gaming, cloud streaming, next generation consoles and AR / VR. The increasing sophistication of games, and the development of new platforms all add to the complexity of the video games market which is driving demand for larger, professional, outsourced specialists, such as Keywords, in a highly fragmented supplier market. Outsourcing such work is attractive to developers and publishers because it converts their fixed costs into variable costs, helps remove bottle-necks in capacity by providing access to talent as required and enables them to focus on their core competencies.

Market leading position

Keywords has a market leading position as the only global provider of fully integrated outsourced creative and technical services to the global video games industry. With an industry reputation for quality, reliability and flexibility, our scale and reputation mean we are well placed to take advantage of the trend for customers to move to more collaborative partnerships with fewer, larger suppliers. Our market leading position creates substantial barriers to entry which we have described in more detail on page 20.

Strong growth record

We continue to deliver strong organic revenue growth as we benefit from both the growth in the video games industry and the trend towards greater outsourcing of our services. In addition, we have successfully acquired and integrated 44 acquisitions since IPO. The 8 acquisitions we completed in 2019 bolstered our capabilities, particularly in Game Development and Marketing services. In addition to extending our existing service lines to bring us even closer to our customers, we have continued to expand our geographical reach, with new facilities in Mexico City and Leamington Spa and expanded facilities in Katowice.

Keywords is better placed than ever to continue to capture an increasing share of our robustly growing market, by deepening our relationships with customers who already trust us with their high value IP, having significantly extended our services and geographical reach during the year.

We are a trusted partner to leading companies around the world, with a leading market position, providing services to 23 of the top 25 games companies and all 10 of the top 10 mobile games publishers by revenue, including:

Microsoft, WB Games, EA, T2, Ubisoft, Supercell, Nexon, King, Playtika, mixi, netmarble

978
customers, up from 846 in 2018

Opportunity to grow further

Having made strong progress in extending the Group's client base, market penetration, geographic footprint and service lines, we are now beginning to realise the significant potential for increased cross-pollination of our service lines and geographic locations, including taking advantage of our dual-shore capabilities which enable us to be close to our customers and provide services from lower cost studios, as we increasingly become a strategic partner to our customers.

A strong business model

Keywords' flexible resourcing and charging model, with charges levied for time or output, combined with relatively low working capital and capital expenditure requirements, support our ability to grow the business whilst also achieving strong underlying cash conversion.

Our business model also provides an opportunity to invest in the exciting video games market, without the risk of exposure to the successes or failures of individual game titles.

Adjacent market potential

Our expertise in providing outsourced solutions to the video games industry is already being sought after in adjacent markets such as film and television, and Keywords is well placed to deliver this.

Video games represent the pinnacle of interactive content. Our mastery of this highly interactive content positions us well as other forms of content continually seek ways to be more interactive and therefore more engaging.

Chairman's statement

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.

"We remain absolutely committed to the strategy embarked upon at the time of the IPO."

Ross K Graham
Chairman

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 EBITD 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 the 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

Ross K Graham
Chairman
16 April 2020

Q&A with Andrew Day

We are building a platform of scale

Q 2019 looks to have been a busy year – what are you most proud of?

A We've made some excellent progress through 2019 and there is plenty for us to be proud of. I've been particularly pleased with the acceleration in organic growth despite the slowdown effects of the end of the current generation of consoles. This was driven by the good progress in Functional Testing and continued strong growth in Game Development which led to us exceeding the market's revenue expectations. We've continued to expand, growing a global platform of scale to service the ever growing video game industry and its trend towards increased outsourcing. I remain confident that Keywords is the best placed provider to capitalise on this trend.

I have also been pleased with the performance of our most important asset – our people. As an organisation, we are particularly proud and protective of our culture, where Keywordians are empowered, relaxed, professional and humble,

44
acquisitions since IPO

8
acquisitions completed in 2019

> "As an organisation, we are particularly proud and protective of our culture, where Keywordians are empowered, relaxed, professional and humble with a focus on doing the very best we can for our customers."

Andrew Day
Group Chief Executive Officer

with a focus on doing the very best we can for our customers and each project they entrust us with. By investing in the development of our people, we are ensuring we deliver the highest standard of work for our customers, furthering our strategy to be the 'go to' technical and creative services platform for the global video games industry.

Q M&A activity appeared to slow down this year compared to previous years – are you at all concerned?

A I am not concerned. We had a slower start to the year, but we completed 8 high quality acquisitions for a total potential consideration of €20m, further strengthening the breadth of value-added services we're able to offer our customers. I'm happy with the progress we made in 2019, as we remain very disciplined in our approach to acquisitions, targeting specific areas to grow the platform and only acquiring businesses that we know will fit the Keywords model. Looking forward, we have a great pipeline of opportunities and I'm excited about what 2020 could hold for the Group.

Q Should the TV+SYNCHRON acquisition be seen as a signpost that you will be doing more in the TV and film spaces?

A Although we see some clear synergies in the TV and film market where demand for our expertise already exists, TV+SYNCHRON was an opportunistic acquisition which allows us to take advantage of some highly complementary opportunities in the European dubbing market. Whilst we will continue to consider opportunities in adjacent markets, the global video games market remains our core focus and there is still a lot to do in this area.

Q Was there anything in the year you were particularly disappointed with?

A Overall I am very happy with the way the business is continuing to come together. I think it's easy to forget how early we are in our journey of building our business in an addressable market of well over $6bn. Our margin in 2019 was lower than many were expecting but much of that can be explained by the investment we are making in the strong organic growth we are delivering to ensure it is sustainable, controlled and the backbone is built to support the ongoing organic and acquisitive growth. In addition, we did have an issue with a fixed price contract, which is not something we would typically enter into. I am pleased to say that this contract is now concluded, and we have still maintained a strong relationship with the customer.

Q What can we expect to see in 2020?

A More of the same! We are building a platform of scale which gives us excellent opportunities for growth, and the investment in our infrastructure, systems and management will bring further benefits in 2020 and beyond as we leverage these costs over a growing revenue base. With the launch of a new generation of games consoles and further development of new streaming platforms, we are expecting 2020 to be an exciting one for the video games industry and for Keywords!

Chief Executive's review

A strong performance

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

Andrew Day
Group Chief Executive Officer

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 on page 137 of 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

30.2%
Reported revenue growth

15.5%
Organic Revenue growth

Platform

We have used our passion for games, technology and media to build a services platform for the global games industry.

Responding to client needs

The games industry is continuously changing, and our customers rely increasingly on external development services to create new and engaging content. We need to match their global footprint with a depth and breadth of services and consistently high standards of service delivery, to ensure customers know what they are getting when they buy our services, regardless of location, timescale or service type.

Maintaining high standards

We ensure Keywords' reputation for quality is upheld across the platform by gathering the know-how and tools before spreading them geographically, achieved through both acquisitive and organic growth. An example of this could be acquiring a new service before seeding it in an established existing location, using our team's expert knowledge of the regional customer base. Another key aspect of the platform's success is Keywords' ability to gather and retain the industry's top talent. As Keywords increasingly becomes the place to work, renowned for its great culture, working on the best video games, with good facilities and benefits, so we attract the best talent and expertise.

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.

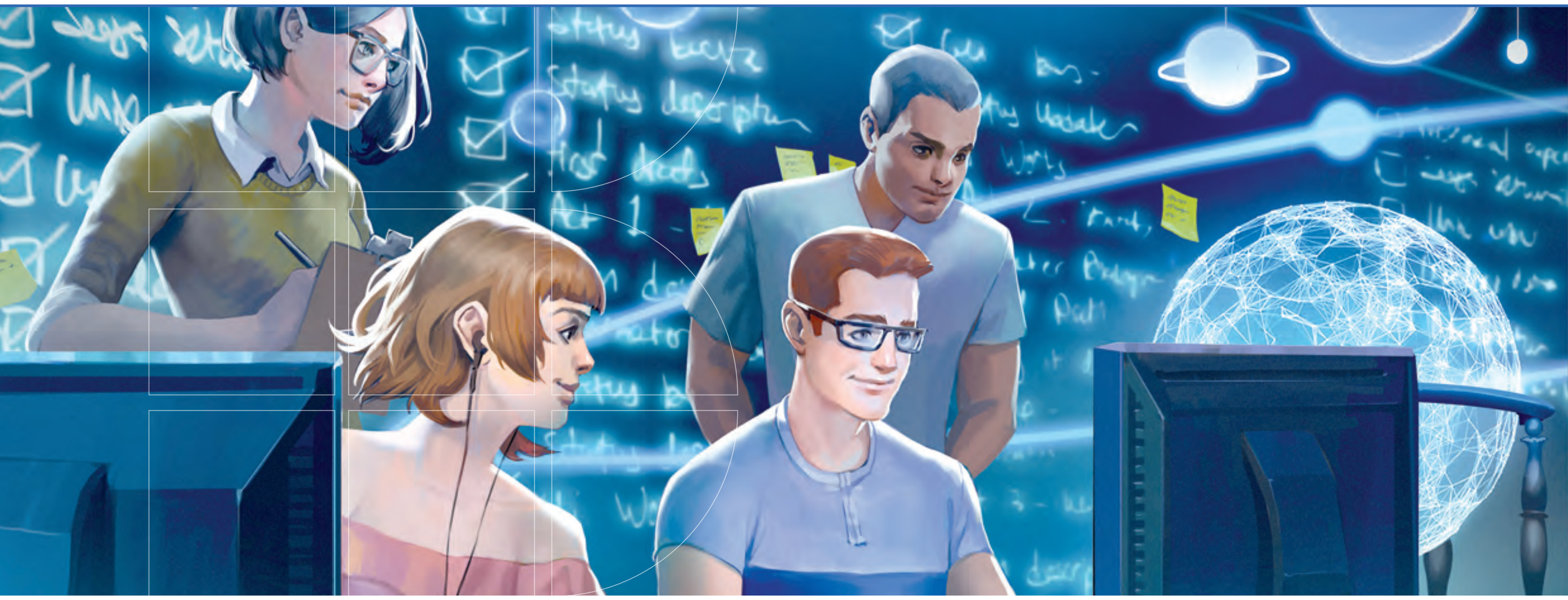
In October 2019, we agreed a new revolving credit facility for up to €140m which provides the Group with further flexibility and headroom to manage the short-term disruption of COVID-19 and invest in our business both organically and through acquisition.

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.

Chief Executive's review
continued



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.

2019 Acquisitions

ART CREATION
- Sunny Side Up
- Ichi Worldwide

GAME DEVELOPMENT
- GetSocial
- Wizcorp

AUDIO
- Descriptive Video Works
- TV+SYNCHRON
- Syllabes

LOCALIZATION
- Kantan

Integration

Even from the preliminary stages of due diligence we are constantly focused on integration.

When looking to make acquisitions, integration is always front of mind. We have a tried and tested integration process which we implement for each new acquisition, starting with a detailed integration plan tailored to the company in question, which is designed by the people who will ultimately lead the integration process after the acquisition has completed.

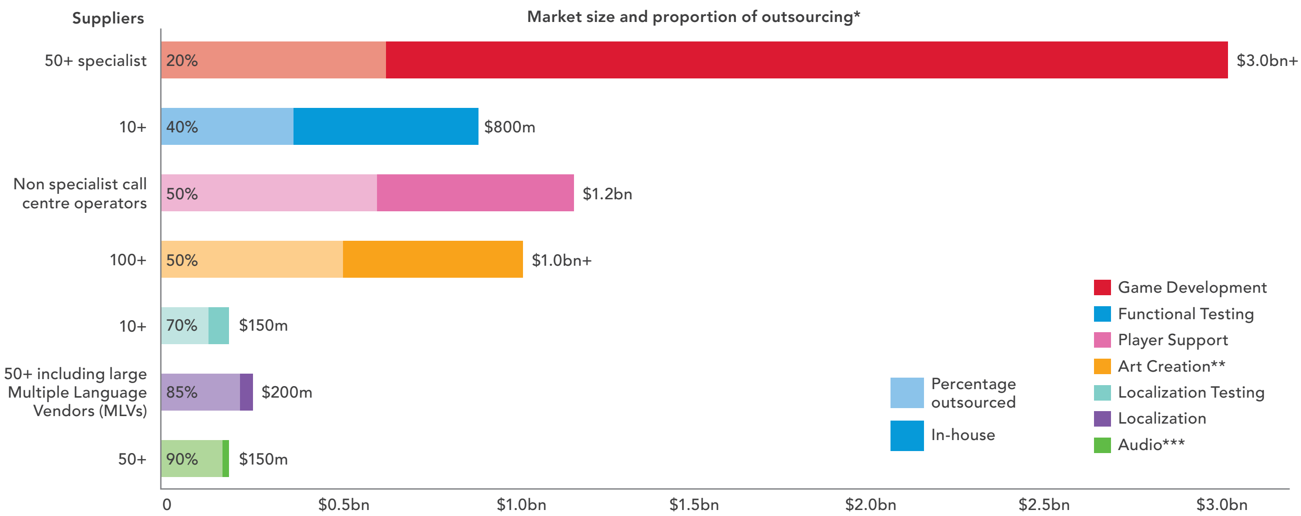
When we make an acquisition, we retain the brands for as long as it makes sense, adding "A Keywords Studio" to its logo to ensure it is seen as part of the Group. Acquired businesses immediately benefit from shared services through IT, security, HR, and finance – all of which have received significant investment this year, and a shared sales and marketing team allows businesses to focus on cross selling their services as part of a wider group, with local studios supported by regional hubs for key functions. In turn, the acquired studios quickly become ambassadors for the full range of services across Keywords.

Following the acquisitions made during the year, we exited the year with pro forma revenue (as defined on page 136 of 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.

Our market opportunity



* Based on management's estimates ** Art Services only, does not include Marketing Services *** Audio localization only

Chief Executive's review
continued

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.

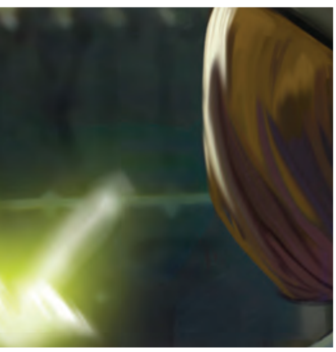
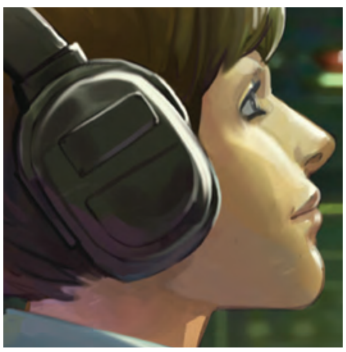
COVID-19

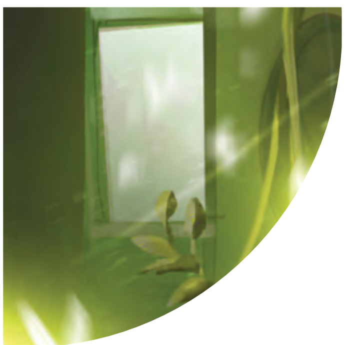
Trading in 2020 started in line with our expectations, with only minimal impact from COVID-19 due principally to the short-term disruption in China that affected our five studios there. These operations have now returned to near full production, following the return to work after the government mandated 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.

Scale

We are developing a platform of scale, enabling us to become the ‘go to’ provider of services to the video games market.

Our aim is to become the ‘go to’ provider

This means being the first company our customers think of when they think about their external outsourced game development needs. For this to happen, we need both size and scale and to be known as the industry experts. Scale brings not only efficiencies but also creates significant barriers to entry for would-be competitors, all of which contributes to becoming the provider of choice which in turn accelerates growth.

Another key element is the reputation we have earned across many parts of the industry for reliability, flexibility and trust. This is what will keep customers coming back and remove risk for others who are considering working with us.

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
16 April 2020

"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."

Market outlook

A large and growing industry

Momentum in the video games market shows no signs of slowing, remaining a core element of the entertainment industry. Content revenues in the global games market grew by 7.2% to reach $148.8bn in 2019 and are forecast to increase to $189.6bn in 2022, a CAGR of 8.1%. (Source: NewZoo Global Games Market, for the period 2018-22).

All indications are that game publishers will continue to make more games in the future, with ever more sophisticated content, published across more platforms and with an increasing need to continuously add content to the games post launch.

An appealing market opportunity

Much of the video games industry still remains vertically integrated. But as the market continues to grow and becomes ever more complex, games publishers and developers are increasingly seeking to avoid expanding their own teams for relatively short term projects. The video games publishing cycles are inherently lumpy, requiring significant resources to deliver complex projects on a tight timeline. This is resulting in a trend towards increasing outsourcing at a more strategic level which benefits Keywords as the market's only major provider of scale. This includes a growing demand for co-development and full game development services, and we are investing to match that demand and continue to increase our market share.

Segment breakdown of global game revenues toward 2022

$6bn+
addressable market for video games services

The video games service provider market remains highly fragmented, yet it is only when a service provider has sufficient scale that it is able to more efficiently utilise its resources, without significant downtime between projects and have the resourcing flexibility to meet the customers' needs on a timely basis. As the only service provider of scale, in this $6bn plus addressable market (see page 13), Keywords is uniquely placed to support our customers' needs. This is part of the attraction for acquisition targets, who want to be part of a larger group with access to a wider customer base and service offering. It also means we are increasingly benefitting from our scale relative to competitors, as we further consolidate our market, and can respond flexibly to increasingly large scale projects from our customers.

"Keywords is uniquely placed to support our customers' needs."

Key trends in 2020

Next generation consoles

2020 is set to be a landmark year for console gaming with both PlayStation (PS5) and Xbox (Series X) having announced their next generation consoles, scheduled for launch in Q4 2020. With backward compatibility a feature of both systems, this console transition is expected to be the smoothest yet. Unlike in the last transition seven years ago, in which the market was surprised at how quickly platform holders and publishers shifted from content for the previous platforms to new content for the current generation, this time, a lot of games are running as a service and are expected to continue to be supported on the existing consoles.

Games as a service

Part of the smoothness of the generation transition will be thanks to the trend to the 'games as a service' model. We anticipate game publishers will want to continue to support existing content that is commercially successful while simultaneously producing new content that takes advantage of the power and features of the new consoles. Outsourcing the live operations for both platforms, including the introduction of new features, new characters, producing marketing materials, plus further localization and testing will bring opportunities for Keywords, and we anticipate this doubling up will create added demand for our services.

Wider adoption of streaming and subscription platforms

In addition to traditional consoles due for release in late 2020, the launch of Google Stadia and Apple Arcade in late 2019 and the anticipated launch of Microsoft's xCloud in 2020 represent exciting steps to make gaming more readily available and accessible to a wide spectrum of gamers. Presently, gaming can be costly for the user, with the requirement for high end gaming PCs, expensive consoles and high end smartphones limiting the access to and uptake of some games. Streaming and subscription services have the potential to provide highly cost-effective distribution of content, making it available to more players, on more devices, in more countries, and in more languages.

More than ever, video game technologies are also being used in other markets including e-learning, film and TV, simulation and e-retail, as content providers continue to seek ways to make their content more interactive and thereby more impactful and engaging. Interactive content of whatever type requires the sorts of skills and knowhow that Keywords has mastered in the most interactive of all content markets – video games.

Business model

Creating value and growth through operational efficiency

The video games industry represents the pinnacle of interactive digital content. At Keywords, we are using our passion for games, technology and media to create a global, integrated services platform of scale for video games and beyond.

Key strengths

Global presence

Provides access to the best talent and enables us to deliver projects across studios in multiple time zones, allowing seamless 24-hour turnarounds whilst remaining close to our customers.

Flexible resource model

Particularly true of our testing business, this allows us to scale up or down to meet demand, mirroring the seasonality of games production.

Knowledge and expertise

Our talented people have deep games-specific knowledge and experience, enabling them to add value to our customers' games at all stages in the development lifecycle.

Reputation for quality

At the heart of our culture is our commitment to quality, reliability and integrating with our customers' processes, promoting long-term customer relationships.

Financial strength

Our strong financial performance and position gives our customers reassurance of resilience in their supply chain, and is part of our attraction to businesses we acquire.

Acquisition track record

We have a strong track record in identifying acquisitions with a good fit with Keywords in terms of culture, as well as expertise or geography and integrating them effectively to support their growth.

What we do

Keywords' presence in each stage of the games development cycle creates multiple opportunities for cross delivery and revenue growth.

1

Pre-production

Concept art
Level design
Game design

2

Early stage game development

Co-development
Programming
Art production
Cinematics/visual effects
Audio production
Original language voice production
Engineering
Development quality assurance
Game demo trailers
Music scoring
Sound design
Story writing
Motion capture

Our business model is supported by our strategic pillars:

Building our platform

Selective acquisitions and integration

Organic growth and cross selling

Services offered by Keywords
Services added by Keywords in 2018-2019
Services not currently offered by Keywords

3

Later stage game development

- Functional testing
- Text localization
- Audio localization
- Localization testing
- Player research
- Game porting
- Music branding and strategy

4

Launch

- Certification testing
- Official game trailers
- Soundtrack publishing
- Marketing services
- Customer acquisition
- Merchandising

5

Ongoing live operations support

- Customer support
- Community management
- Data analytics
- Payments processing
- Game analytics
- Social integration
- Customer retention
- Promotions management

6

New content for games

- Game extensions
- Level expansions
- Art
- Audio
- Testing
- Localization
- Marketing
- Issue patches

Business model
continued

How we are different

Acquisition track record
Strong and disciplined track record in identifying acquisitions with a good cultural fit

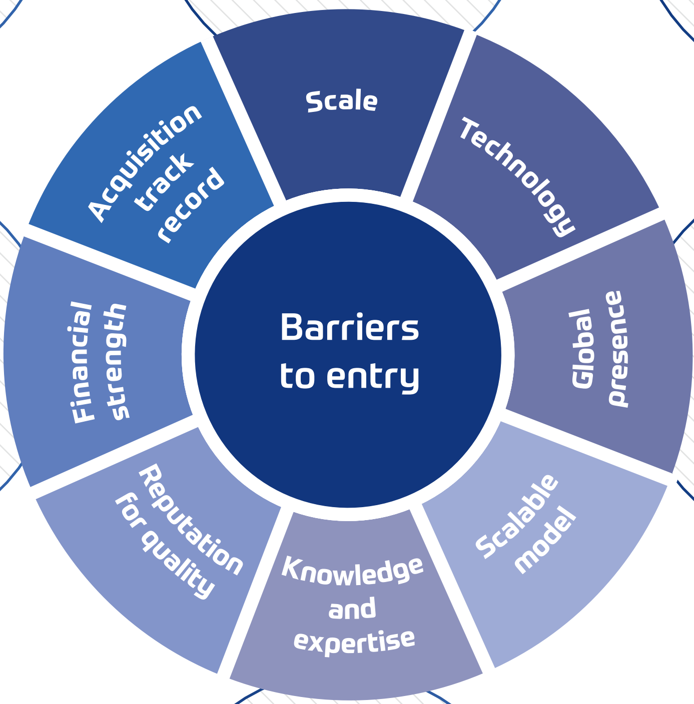
Established and effective integration processes

Organic growth demonstrates success

Scale
Large customers need large reliable suppliers

Technology
Necessity of regular investment in technology and security makes it difficult for smaller suppliers to compete

Importance of resilience and security through robust IT infrastructure



Financial strength
Strong performance reassures customers

Attractive stability for businesses we acquire

Global presence
Access to the best talent worldwide

Ability to deliver projects across studios in multiple time zones

Close proximity to our customers

Reputation for quality
Commitment to quality embedded in our culture

Reputation for delivery evidenced by long-term customer relationships

Knowledge and expertise
Talented and passionate people

Deep games-specific knowledge and experience

Value-adding expertise

Scalable model
Capable of scaling up or down to meet demands

Mirror seasonality of games production

Flexible resourcing to match client needs

Creating value for our stakeholders

By working as their external development partner, we enable leading content creators and publishers to leverage our expertise and capacity across the lifecycle of interactive content.

In so doing we enable our customers who are operating in complex and fast-moving environments to remain lean and agile, and to focus on creating and monetising the most engaging experiences.

We are trusted and relied upon by most of the world's leading video game companies to work alongside them during concept, development and live operations by leveraging the breadth and depth of our industry leading service lines every step of the way.

Keywords' presence in each stage of the games development cycle creates multiple opportunities for cross selling and revenue growth.

Investors

Consistent track record of delivering earnings and dividend growth.

Opportunity to invest in the exciting video games market, without the risk of exposure to the successes or failures of individual game titles.

Proven disciplined M&A track record to consolidate a fragmented global supplier base.

Access to a structural revenue growth opportunity driven by industry growth and a trend towards outsourcing.

Customers

Our involvement across the video games cycle means that we can be a “one-stop-shop” for our global customers, meeting their requirements with a combination of on-demand and dedicated services facilitated through a wide geographic reach to talent and a flexible resource model. This allows our customers to outsource most aspects of game development, enabling our customers to reduce the number of permanent staff that would otherwise be required to cater for peak activity, thereby converting fixed to variable costs and minimising their overall operating costs.

Employees

Keywords provides employees with an excellent and sustainable variety of work, good career advancement opportunities and, increasingly, opportunities to work in many different locations.

Our customers can access a world class talent base without incurring any of the usual fixed costs.

* Before acquisition and integration expenses, share option charges, amortisation of intangibles, and foreign currency effects.

Our strategy

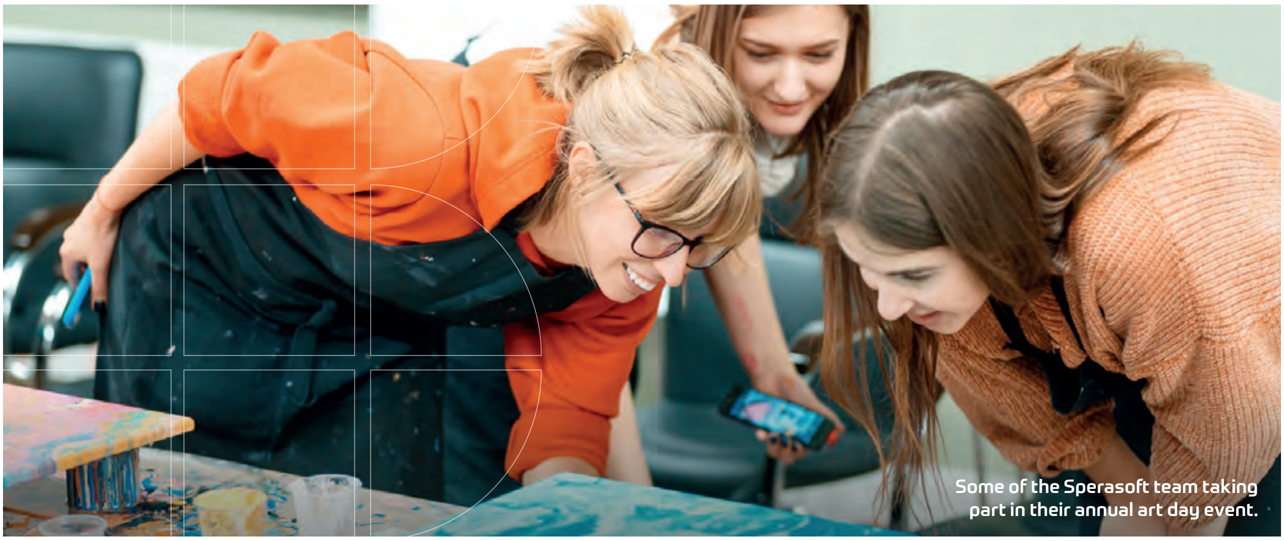
To become the 'go to' technical and creative services provider for the video games industry and beyond

The key pillars of our strategy are to grow organically and by acquisition to extend the Group's service capacity, capabilities and geographical reach in order to better serve our client base across all platforms, key geographies and languages, with a full range of services and solutions.

Positioning the Group as the provider of scale in an otherwise highly fragmented service provision market, despite the global scale and nature of the major video games publishers and developers, will enable us to continue to take advantage of the trend towards greater externalising of development and support services as customers seek to manage the demands for increasingly frequent and sophisticated content in a cost effective manner. By investing in expanding capacity and across our multi-service global platform, we are increasingly becoming a strategically important partner to our customers who require a service provider of our scale and flexibility.

As we develop positions of scale within our chosen markets, our focus moves to new areas where we see opportunities to expand through a mixture of organic and acquisitive growth.

Strategic pillars	Progress in 2019
Building our platform	• Continued to enhance our marketing services capabilities (first entered in 2018) with 2 acquisitions during the year; building on the first two we acquired in this space in 2018. • Extended our geographical footprint by acquiring our first studio in Berlin, another key hub that further builds out our global platform. • Added 1,400+ work stations to support the strong levels of organic growth and become the 'go to' service provider in each service line. • Enhanced and grew our capabilities in new and existing regions with facilities opened in Montreal, Mexico City, Katowice, Manila, Tokyo and Leamington Spa. • Renamed our Game Development service line (previously Engineering) to more accurately reflect the range of services from full game development to software engineering consultancy.
Selective acquisitions and integration	• Completed 8 acquisitions during the year which added to our existing scale and capabilities in audio, game development, marketing and localization services. • Kantan – acquired a leading machine translation business adding to our range of technology used across the Group. • Increased our presence in North America with selective acquisitions in Montreal and Vancouver. • These acquisitions are being integrated within the service lines as well as within the country and regional management structures and our global finance, accounting, HR and IT functions. • Made good progress with integrating prior period acquisitions, which are making good contributions to the Group.
Organic growth and cross selling	• Organic Revenue grew by 15.5% in 2019. • Organic growth in 2019 was a defining feature as we grew in all of our key regions and is reflective of our success in executing and integrating acquisitions. • Continued to expand our client relationships by making good progress with cross selling our services reflecting an increase in customers buying 3 or more services from 99 to 108.



Some of the Sperasoft team taking part in their annual art day event.

Priorities in 2020

- In 2020, we will continue to build our platform so we are increasingly a strategically important partner to our customers.
- Marketing services was first launched in 2018. There are further acquisition opportunities to widen the range of services we can offer and expand the geographies we can cover.
- Our fast growing Game Development business has benefitted from investments in acquisitions and organic openings of new studios, and we hope to be able to make further acquisitions in the space as we build our Game Development business into the provider of choice.
- As we extend our capacity, our investment in new workstations enables us to take advantage of higher levels of activity in a more cost-efficient manner. 2020 will also see continued investment as we develop our platform to service our clients' projects across our expanding multi-service global platform.

Measures of our success

7
service lines, up from two in 2009, four in 2013 and six in 2016.

4
continents in which we have operations. We now have 45% of our people in North America and South America, 23% in Europe and 32% in Asia.

1
of our service lines, Functional Testing, has become the supplier of choice in North America.

- The Group’s acquisition programme continues to be an important strategic pillar and we anticipate that 2020 will again contain a number of acquisitions.
- Our service lines are ever developing, and there are gaps in most of them. We will continue to make selective acquisitions that further enhance and extend each service's capabilities in 2020, particularly in Marketing services and Game Development.
- Keywords will continue to develop and invest in technologies that support the services we provide to game developers and game publishers.
- Following considerable success expanding in to the key global video games markets, geographical expansion remains a lower priority driver in 2020 as we continue our focus on enhancing our capabilities in regions where we already have a presence.

4–10
acquisitions per year. Between €30m to €80m invested.

8
acquisitions in 2019. All are successfully being integrated into our platform.

44
acquisitions since IPO.

- Organic growth remains our priority in 2020. Following the growth we saw in 2019 and our work on building out our platform, we will invest in this as a key priority.
- Cross-selling within our services is vital and we have continued to see noticeable growth in the number of customers that are benefiting from the use of three or more of our services, a key reflection of our “relevance” to customers.

16%
increase in overall customer numbers in 2019 to 978, up from 846 in 2018.

108
customers using three or more service lines. Up 9% from 2018.

1,400+
work stations added in 2019 to support our growth and growing need for scale.

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 pages 135 to 143.

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.

Service line review
continued

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.

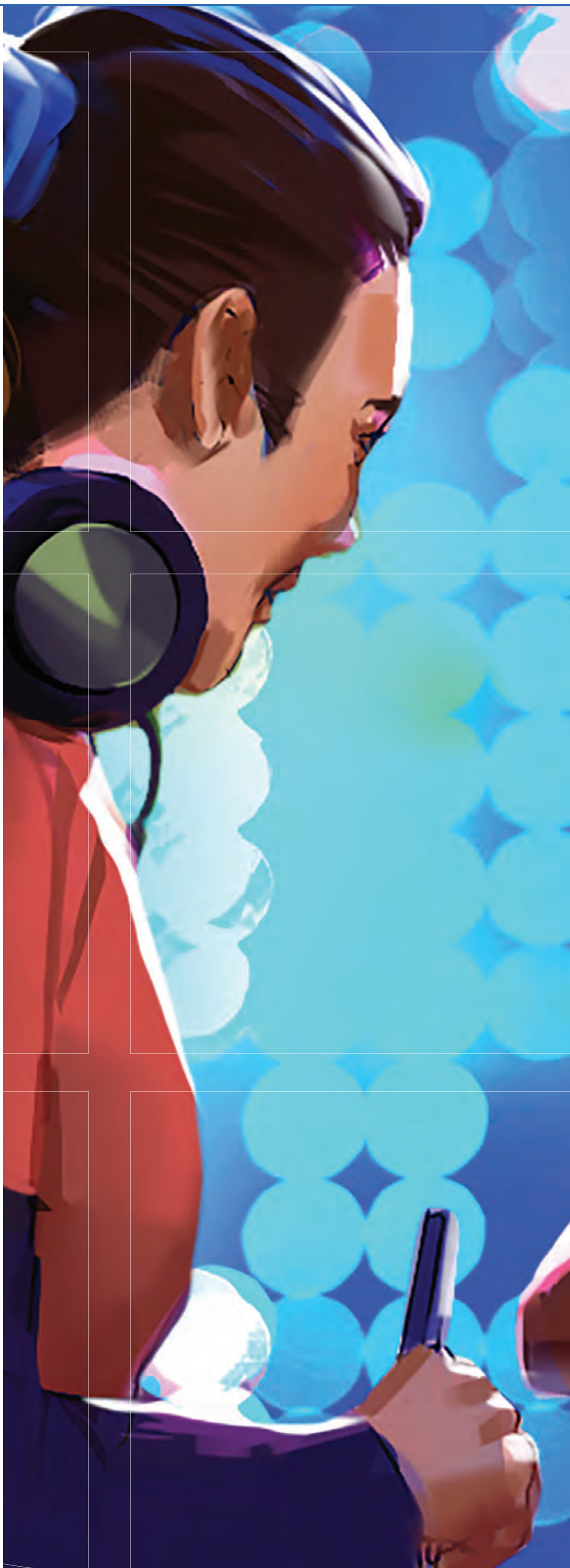
The market opportunity and medium term outlook

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.

Our people, our culture

Our people – at the core of what we do



Our culture acts as the glue that binds all Keywordians around the world together – relaxed, professional and humble with a focus on doing the very best we can for our clients through each and every project they entrust us with.

At Keywords, we encourage our people to engage with each other not only across our studios but across our regions and global network. Through knowledge sharing and open plan offices, we encourage our colleagues to be the very best at what they do. At the heart of our culture are our operating principles, the "Keywords Rule of 9".

Keywords Rule of 9

1. **Communication** – We communicate openly and in a timely fashion. We do not hide things from colleagues or clients and we avoid office politics.
2. **Project Focus** – We focus on projects, delivering the best we can for the benefit of each and every product we touch.
3. **Client Centricity** – We act as an extension of the client's organisation, moulding our processes and procedures to fit their requirements whilst sharing our knowledge of best practices.
4. **Empowerment** – We empower our people to perform to the best of their ability by providing them with the resources and environment to do their jobs and the tools to track and measure their performance.
5. **Passion for Games** – We are passionate about games and are proud of our role in helping to deploy them and we play an active role in the wider industry.
6. **Client Intimacy** – We love our clients (all of them) and want the best for them at all times.
7. **Positivity** – We have a "can do" attitude and rise to the challenge of solving our clients' problems.
8. **Flexibility** – We recognise the importance of flexibility and actively embrace it despite the obvious challenges. Flexibility is why we exist at all. Without it, clients would perform the tasks we do, themselves.
9. **Learning & Growing** – We learn at every opportunity and grow ourselves through experience, training and tackling new challenges.

Our people, our culture
continued

Our people

At Keywords, an average of 7,424 full time equivalent employees make up our international, highly diverse and multicultural team and we are well balanced across our three regions; 3,322 in North and South America, 1,733 in Europe and 2,369 in Asia. The number and diversity of people and skills in our workforce allows us to be well placed to deploy these skills across the industry to meet all of our customers' needs.

We are constantly striving to provide great working environments for all our colleagues around the world. This can be seen in the central locations of our studios. Rather than seek out low cost locations and facilities, we feel the benefits of being able to attract the best talent in the most scalable manner outweigh any savings from lower costs of occupation.

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 commitment of our talented and games-passionate employees and collaborators.

We are proud of the passion, commitment and professionalism of this invaluable resource of over 7,400 Keywordians which means there is a contribution from Keywords to most of the world's leading games – we would like to thank everyone involved for their valuable contribution to the continued success of the Group.

Joining the Keywords family

We are a highly acquisitive business and have some very strict criteria for our acquisition targets, by far the most important being cultural fit. Typically, if we think that there is a cultural misalignment then we won't even open the dialogue with the company. Once we set our sights on an acquisition there is a process that we follow during the due diligence phase and after closing the acquisition to ensure the seamless integration of the new studio and most importantly the new colleagues to ensure that, from day one, they feel like part of the Keywords family, while, at the same time, appreciating the history and richness that the new company brings. A mark of our integration success is that over half our senior executive team joined us through acquired companies.

Our people, with their drive and talent, make Keywords the global service provider that it is today, and it is essential for us that we continue to support our unique and diverse culture, which includes welcoming new faces and ensuring they feel just as supported and welcomed as their more established colleagues.

Supporting our communities

Together with our studios across 21 countries, we place the support of our local communities, including our employees, at the heart of what we do. Throughout 2019, Keywordians have raised funds of over €29,000 and supported various community and employee needs:

- Studios took part in the **Extra Life Gaming Marathon** – raising awareness and funds for Children's Miracle Network Hospitals in Canada.
- In support of **Montreal Children's Hospital**, we sponsored a booth at the Montreal 2019 Comic Con, featuring a gaming competition in exchange for a small donation to the hospital.

up to

€100,000

per year to match funds raised for community outreach and charitable initiatives so that we can continue to support our local communities.

Electric Square raised money for a local charity (Pedal People) by taking part in the 'Mud Monster' cross-country race.

Keywords employees in Manila organise a 'blood drive' as part of World Blood Donor Day 2019.

€100,000 per year pledged to match funds raised

€29,000 raised for charity in 2019

59 studios in 21 countries

Keywords Studios staff take part in the Montreal Pride Festival celebrations.

- Throughout the year, employees in Montreal donated games and books to the **Welcome Hall Mission**, allowing those less fortunate to enjoy these items.
- Our Montreal studio purchased 1,000 poppies from the **Royal Canadian Legion** so that employees could proudly wear these poppies and show their support for veterans on Remembrance Day.
- In India, we partnered with **Feeding India**, a non-profit organisation that works to eradicate hunger, malnutrition and food wastage in the country. Together, we organised a memorable day for 250 children from the Eklavya Trust, an NGO that provides education and welfare for the under-privileged in Gurgaon, New Delhi. The children were served lunch and enjoyed gifts and goodie bags throughout.
- Also in India, Keywordians took part in the **Be a Super Hero – Save a Life!** campaign with **Datri**, a non-profit organisation working towards saving lives by encouraging people to become stem cell donors. More than 250 employees attended the session and 50 enrolled for stem cell donation, becoming active partners of this life-saving initiative.
- Studios in Japan supported **Second Harvest**, an organisation dedicated to helping welfare agencies. We placed non-perishable food collection boxes across the studios to help support this cause through donations.
- In the UK, studios recently organised a **Wellbeing Week** for their teams. During the week, awareness around various aspects of health and welfare, including activities related to social, physical, emotional, financial, health and nutrition were promoted and conversations on these topics were encouraged. As part of this, external speakers delivered presentations, educational workshops were made available, and there were motivational talks too.

In 2020, we want to do more to support good causes across the communities that we are a part of. With this in mind, Keywords has pledged up to €100,000 per year to match funds raised for community outreach and charitable initiatives so that we can continue to support our local communities.

Sustainable studios

Sustainability is a core focus for Keywords; as it is for all of our studios across in all our territories. In 2019, we piloted a programme for one of our studios to become Carbon Balanced, with great success. Electric Square, a studio based in Brighton in the UK , achieved an official Carbon Balanced certification for 2019 after it offset its footprint through a local, Brighton based organisation, C-Level. Working with C-Level and its holistic approach, the studio supported projects that aim to bring businesses and forest people together on climate change. In working together with C-Level, Electric Square supported two projects to balance its carbon footprint:

- Plan Vivo's Communitree project in Nicaragua – one of the world's leading community reforestation projects and;
- The Hadza hunter gatherers in Tanzania – a project that won the UN's Equator Award in 2019.

Following this successful pilot, Keywordians at Electric Square now plan to work towards becoming 'Certified B', a certificate that celebrates a company for leading the way in building a sustainable and inclusive economy that works for everyone. B Corporations are classified as innovative, inspiring and changing the world.

Our people, our culture
continued

In parallel with Electric Square's work, we are delighted to announce that Keywords Studios Spain completed its first year as a green energy only organisation last year; a huge milestone for our team in Europe.

In Montreal, we formed a Green Committee for Keywordians to research the best practices for energy usage, cutlery options, and training and policy additions to make our studios more sustainable. As part of this, the Committee is looking at how best to recycle our surplus and redundant IT equipment in Canada and the United States.

In India, Lakshya celebrated its 15th anniversary by holding a tree planting drive. Employees chose and paid for more than 500 plants, with a focus on saplings, which were in turn planted in the local area. All the proceeds from this "Go Green Initiative" were donated to a charity that feeds the disadvantaged in the region.

Our studio in Florida, GameSim, is also focused on being more environmentally conscious. The studio provides its people with compostable and eco-friendly plates and utensils, as well as glass coffee mugs for easy re-use. They keep the lights turned off on one side of the office as a way to conserve energy as well as to offer varied lighting options for employees who prefer the dim light. When hardware becomes non-operational, they ensure it is recycled and when furniture is no longer needed, it is donated to Goodwill or The Salvation Army.

In Japan, employees across several studios placed a strong emphasis on recycling and the environment. To encourage this, descriptive posters were hung on the walls and containers were provided throughout the studio to make it easier to separate garbage from biodegradable material. On top of this, air conditioning has not been used wastefully and the lights have been turned off at night. To save on paper waste, the studios reuse the backs of un-needed printed paper. Studios have also teamed up to launch an environmental quiz for all Keywordians, testing their knowledge and offering insights on how to improve practices. The first 100 employees to score well in the quiz earned a reusable shopping bag.

Following these successful pilots and initiatives, we will look for other opportunities to help balance our emissions in 2020 and make Keywords a sustainable business.

Encouraging excellence

At Keywords, we encourage excellence in every aspect of what our Keywordians do. Every year, Lakshya Studios organises the Lakshya Art Challenge, a competition that encourages and develops game art talent within our business through 3D digital game and art and thus competition. For the first time, the entire Keywords Art service line was invited to take part, making the 2019 challenge bigger than ever before. Other studios that took part included Mindwalk and Red Hot CG. Congratulations must go to everyone that took part but especially to Wei Sheng, winner of the Character prize and Li Daiwei, this year's winner of the Props Award.

Working with our customers

We are fortunate to be able to count 23 of the top 25 global games developers and all of the top 10 mobile games publishers by revenue as our customers. These companies expect the highest level of service and our diverse capabilities allow us to satisfy our customers' needs every time. Increasingly, these customers prefer to outsource multiple services to one service provider, and this is where we are uniquely positioned to meet expectations.

We offer our clients flexible, scalable solutions that match their overall requirements. Through our Embedded Services team, we partner with our clients to provide in-house solutions managed by Keywords.

With content being produced across the 21 countries we operate in, Keywords is often tasked with the role of content moderation. Not all our regions want the same content and, as such, it is our people who tailor these different requirements across regions so that content is culturally appropriate for the end customer.

Celebrating cultures

70+
international holidays observed, including National Day, Diwali, International Women's Day, Chinese New Year, Revolution Day, Independence Day, Day of National Unity and many more

Honouring the backgrounds of our teams located across 21 countries and 4 continents

50+
studios supporting diversity and inclusion

Supporting worthy causes

Ten studios supporting social welfare programmes, assisting with homelessness, poverty, hunger and other difficult circumstances

9
studios supporting local schools and education needs

8
studios helping sick and injured kids

Supporting communities

Keywordians volunteered countless hours in an effort to help our neighbours

Uniting and inspiring, making communities stronger

Ensuring player safety and wellbeing, our Player Support Agents and Community Managers have reported hundreds of online threats

Raised funds for various community needs

Some of the team at Electric Square in Brighton pictured playing retro Nintendo 64 games.

KPIs

Financial KPIs

We monitor our financial performance against a number of different benchmarks and these are set in agreement with the Board.

	Revenue growth	Organic Revenue growth	Gross margin	Adjusted operating costs (pre IFRS 16) as a % of revenue
	30.2%	**15.5%**	**36.8%**	**21.7%**
2019	30.2%	15.5%	36.8%	21.7%
2018	65.6%	10.1%	38.2%	20.7%

Reasons for choice

Revenue growth	Organic Revenue growth	Gross margin	Adjusted operating costs (pre IFRS 16) as a % of revenue
Quantifies the growth in revenue from our operations on a reported basis.	Due to the number of acquisitions the Group makes and because it integrates them quickly, this provides the most meaningful measure of underlying revenue growth.	The Board believes this to be a consistent measure of trading performance.	The Board monitors overheads to ensure the operating costs of the Group are in line with the level of business being generated.

How we calculate

Revenue growth	Organic Revenue growth	Gross margin	Adjusted operating costs (pre IFRS 16) as a % of revenue
Increase year on year in reported revenue.	Calculated by adjusting the prior year revenues comparison, by adding pre-acquisition revenues for the corresponding period of ownership, as presented in the current year results, and applying consistent foreign exchange rates in both years.	Revenues from services supplied to customers less cost of sales, as a percentage of revenue.	Administration expenses, before non-operating costs including share option costs, costs of acquisitions and integration, amortisation, depreciation, and including bank charges, as a percentage of revenues.

Objectives

Revenue growth	Organic Revenue growth	Gross margin	Adjusted operating costs (pre IFRS 16) as a % of revenue
The Group aims for continued revenue growth and development.	The Group aims to achieve like for like growth materially ahead of market growth.	The Group aims for gross margins in line with historic norms.	The Group will continue to seek to control these costs closely and in line with the level of business being generated.

Adjusted EBITDA margin (pre IFRS 16)	Adjusted operating profit margin	Adjusted cash conversion rate	Growth in adjusted EPS
15.2%	**13.2%**	**79.0%**	**7.2%**
2019: 15.2%	2019: 13.2%	2019: 79.0%	2019: 7.2%
2018: 17.4%	2018: 15.5%	2018: 81.9%	2018: 45.9%
Provides an indication of how we are performing both internally and relative to our peers.	The Board believes this to be a consistent measure of trading performance, aligned with the interests of our shareholders.	Measures operating cash generation and our capacity to pay dividends, service debt and fund acquisitions.	Reports the underlying profit growth generated on a per share basis, demonstrating the value being created for shareholders. Also links to the Group's dividend policy and gives an indication of our ability to pay dividends from underlying profit.
Comprises of EBITDA (Operating profit, adjusted for amortisation of intangible assets, depreciation, while deducting the share of profit from associates and bank charges) adjusted for share option expense, costs of acquisition and integration and non-controlling interest, as a percentage of revenues.	Comprises Operating profit adjusted for amortisation of intangible assets, share option expense and costs of acquisition and integration, as a percentage of revenues.	Adjusted free cash flow before tax as a percentage of the adjusted profit before tax. The calculation is described in more detail on pages 139, 142 and 143.	The Adjusted profit after tax comprises the Adjusted profit before tax, less the Tax expense as reported on the Consolidated statement of comprehensive income, further adjusted for the tax arising on the bridging items to Adjusted profit before tax. The Adjusted earnings per share comprises the Adjusted profit after tax over the non-diluted weighted average number of shares as reported in note 8.
The Group aims to increase margins through operational efficiencies.	The Group aims for margins in line with historic norms.	Cash generation and working capital management will remain a key focus.	The Group aims for continued growth in Adjusted earnings per share.

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 €m	2018 €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 on pages 108 to 110) for the shares granted in May and September 2019 compared to previous years. The increase is largely due to an increase in the fair value charge (see note 17 on pages 108 to 110) 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 on pages 135 to 143.

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).

Financial and operating review
continued

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 on pages 106 to 108).

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

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).

Cashflow statement	2019 €m	2018 €m	Change €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)**	

* Alternative performance measures (for full definitions and explanations, please see pages 135 to 143).

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 a higher 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.

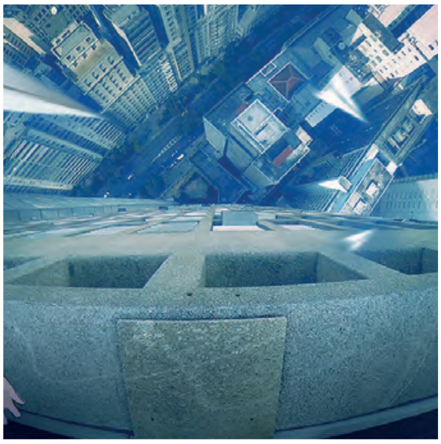
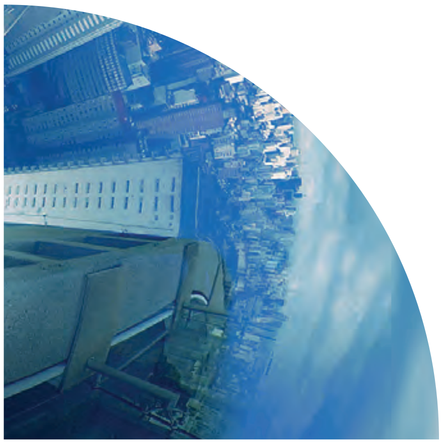
Dividend

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

16 April 2020

Responsible Business report

Dear shareholders

Keywords is committed to conducting our business responsibly, operating to the highest standards of honesty, integrity and ethical conduct. Driven by this, we take seriously our wider corporate responsibility, the role the business plays in society and our impact on the environment.

In 2019, we made a concerted effort to deliver on these responsibilities. As a first step, we have worked with an independent third party to carry out a materiality assessment on a range of ESG areas with our senior team. The process included a materiality workshop, as part of our strategy week, providing the Board and senior executives with the opportunity to identify and debate matters of material importance to them based on business impact. Some of the issues commonly identified included customer retention, successful integration, cyber security and data, culture, service delivery, employee engagement and employee retention. Other issues were debated such as health and safety, bribery and corruption and climate change, recognising their importance to our stakeholders. This approach has resulted in a first stage internal materiality matrix for Keywords to build on in 2020, as part of our plan to engage with our key stakeholders – shareholders, employees, customers, suppliers and community participants – gaining their views and learning what they expect from us.

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. This will ensure that our business strategy, set out by our Board and senior management, will become aligned with the Responsible Business goals and expectations of our key stakeholders.

Our Remuneration Committee is also considering the best ways to incorporate our Responsible Business approach into its remuneration structure as we develop these measurable commitments. We plan to set actions against these commitments, develop additional KPIs and set short/medium term targets.

I would like to thank all of our 7,400+ Keywordians, across all 21 countries for upholding the highest standards through the "Keywords Rule of 9" as we engage and grow with our work colleagues, our customers and our communities. I am delighted to see so many Keywordians giving of their time and energies in support of the numerous initiatives so many of us feel strongly about, be they focused on our work environments, our wellbeing, gaming industry, not for profit programmes, educational initiatives or community outreach. We recognise that we can always do more and thus will continually seek to improve on our commitments to our environmental and social agenda.

Continuing to create the right culture is core to Keywords' future sustainability. At the heart of our culture are our operating principles, the "Keywords Rule of 9". I encourage all Keywordians to embrace these principles as we do the very best we can for our customers and those with whom we interact.

Andrew Day
Group Chief Executive Officer
16 April 2020

Keywords' approach to responsible business is framed by a continuous drive to conduct our business with the highest standards of honesty, integrity and ethical conduct.

In 2020, we started the process to develop a materiality matrix and build on our plan to engage with our key stakeholders; the results of which will form the basis of our responsible business goals to be reported next year. By embedding these goals in our business strategy, we believe Keywords can build a more robust and sustainable model for all our stakeholders (shareholders, employees, customers, suppliers and community participants).

People and development

We value our people; we trust them and work to support their passion to provide the best service for each project and each customer. However, there is always more that can be done to invest in our people and we continue to focus on making improvements with training, benefit schemes and career planning. Across Keywords, we provide training and development programmes appropriate to the service line. Examples of this in the Art Creation service line include our Lakshya Academy in India that teaches classically trained artists to work on video games, while in Localization we are developing a Master's programme in partnership with a university in Milan. Our Localization and Localization Testing service lines continue to spearhead the 'level up' development programme that provides a path from tester to project manager and above.

Customers

We are fortunate to be able to count most of the top global games developers as our clients. These companies expect the highest levels of service and confidentiality. At the heart of our culture is our commitment to quality, reliability and integrating with our customers' processes that combined promotes long-term relationships.

Health, safety and wellbeing

Keywords is committed to providing a safe and healthy workplace for all of our employees. We fully comply with national legislation on Health and Safety requirements and provide information, education and training. For wellness, we provide access to Employee Assistance Programmes in our larger locations and other locations arrange programmes locally, ranging from yoga classes to healthy eating to stress management. We welcome employee input into programmes and share initiatives across the organisation as we seek to meet the changing needs of our people.

Diversity and inclusion

Human talent is our most valuable resource and as a business we thrive on diversity, celebrate uniqueness and work as teams whether we are physically together in one of our 50+ studios around the world or working together virtually. We continually monitor ourselves in line with our policies to ensure we provide a working environment that treats people with dignity and respect, is free from discrimination and promotes fairness and equal opportunities. We recognise that the video games industry traditionally attracts more male than female employees, and at the end of December 2019, the Group was composed of approximately 25% women and 75% men. This distribution is mainly due to the higher proportion of males in many parts of game development. Keywords' Board of Directors includes one woman out of seven Directors, i.e. 14%.

Ethics

The Group is committed to the highest levels of integrity and accountability and the prevention of bribery and corruption. We have also engaged with an external compliance software vendor to help with the rollout, training and awareness of our anti-bribery and corruption policy, in addition to other policies and eLearning activities. In 2018, we adopted a whistleblowing policy that has been rolled out globally. This policy allows employees wherever they are to raise any concerns about possible financial or other irregularities confidentially. During 2019, 3 whistleblowing disclosures were reported, with all of these investigated and satisfactorily resolved.

Human rights

The Board has adopted a Modern Slavery Policy since 2017 and our annual Modern Slavery statement is published on the Company website. We operate to international standards and principles including the International Bill of Human Rights, the UN's Guiding Principles on Business and Human Rights, the International Labour Organization's Declaration on Fundamental Principles and Rights at Work and the Children's Rights and Business Principles. The Group continues to make reasonable endeavours to ensure all employees and agents within our supply chains are not subject to any form of forced, compulsory/bonded labour or human trafficking through our Modern Slavery Policy and the accompanying Supplier Code of Conduct.

Responsible Business report
continued

Employee engagement

Our annual engagement survey took place in November with around 4,200 of our employees responding, a 54% response rate. In addition to the insights into how our people feel about working at Keywords, we sought input on improvements and feedback on community matters that are important to employees. The survey highlighted three areas of strength (Keywords provide the tools and resources needed for employees to be productive, high sense of teamwork and pride within the teams, and Line Managers are engaged with their team and give regular feedback) and three areas for improvement in 2020 (more opportunities to give back to the community, career development and growth within Keywords, and increased recognition for performance). As changes are implemented and progress demonstrated, we would expect to improve our response rates. We have set up focus groups for 2020 which will look at both messages and next steps from the survey, as well as initiatives to increase engagement.

Communities

In 2020, we want to do more to support good causes across the communities that we are a part of. With this in mind, Keywords has set aside a central fund of €100,000. This can be applied to match funds raised for community outreach and charitable initiatives by our local teams around the world. In this one way, we hope to encourage even more support for our local communities. Some of the many proud examples of our community efforts in 2019 include activities in Canada, India, UK and Japan, with more detail set out on pages 30 and 31.

Environment

Keywords is committed to minimising its impact on the environment. As a business, we are responding to the demands of our people to build a sustainable model which today impacts the environment mainly through our studio configuration and business travel. We accept that in a global organisation our people need to travel but we will try to limit this through the use of collaborative tools such as video conferencing wherever possible and when we do fly our policy is for everybody to travel in economy/coach class. Most of our studios have local initiatives to recycle and limit the use of plastics. In 2019, we supported two programmes that focused on carbon balance and green energy (more detail set out on pages 31 and 32. In 2020, Keywords is committed to reviewing its global operations, with a focus on identifying, assessing and measuring our energy and greenhouse gas emissions. We are also committed to a group-wide wide environmental policy that will align our business strategy to measurable environmental goals.

Non-financial information statement

Reporting requirement	Policies and standards which govern our approach	Page reference
Environmental matters	• Environmental statement • Business travel policy	Page 40 Responsible Business
Social and employee matters	• Recruitment policy • Employee handbook • Diversity and equal opportunity • Grievance policy • Employee assistance programme • Health and safety policy • Data protection	Page 22 Our strategy Page 28 Our people, our culture Page 40 Responsible Business
Respect for human rights	• Supplier Code of Conduct • Modern Slavery Policy	Page 40 Responsible Business
Anti-bribery and corruption	• Anti-bribery and corruption policy • Whistleblowing	Page 40 Responsible Business Page 54 Audit Committee
Business model		Page 18 Business model
Description of principal risks and impact of business activity		Page 40 Responsible Business Page 45 Principal risks and uncertainties
Non-financial key performance indicators		Page 22 Our strategy Page 40 Responsible Business

Board engagement with our stakeholders

We believe that proactively engaging with and acting on the needs of our key stakeholders is critical to a culture and strategy that achieves long-term sustainable success.

Section 172(1) statement

The Directors have acted in a way that they consider, in good faith, would be most likely to promote the success of the company for the benefit of its members as a whole, in line with Section 172 of the Companies Act 2006.

This section of the Strategic Report describes how the Directors continue to have regard for:

- the likely consequences of any decision in the long term;
- the interests of the company's employees;
- the need to foster the company's business relationships with suppliers, customers and others;
- the impact of the company's operations on the community and the environment;
- the desirability of the company maintaining a reputation for high standards of business conduct; and
- the need to act fairly as between members of the company.

The Directors are fully aware of these duties and responsibilities, and have set out below how they are fulfilling those duties in respect of each of their key stakeholders. In line with our Responsible Business report (more detail on pages 40 to 42), the Board identifies the Group's key stakeholders as shareholders, employees, customers, suppliers and community participants, and it is committed to effective engagement with these stakeholders.

Shareholders

Our Annual General Meeting (AGM) is an important part of effective shareholder communication, with all shareholders having the opportunity to hear from the Company and ask questions. The Board welcomes the opportunity to engage with our shareholders, typically providing a brief update presentation at each AGM and with all Directors available to answer questions. It would, however, welcome greater participation from shareholders and, as some are unable to physically attend the AGM, the Company is looking at other ways to broaden the participation of all shareholders. The Company also intends to increase the audience of the Capital Markets Day by broadcasting these events to selected stakeholders in order to encourage greater engagement.

Throughout the year the CEO and CFO meet with shareholders, with the Board receiving regular updates from both the CEO and CFO on these engagements. Additionally, both the Senior Independent Director and the Chairman have met and will continue to meet, with institutional shareholders to discuss updates on the Group including strategy, remuneration and other key issues that are vital to these stakeholders in the future. An example would be the emerging importance to some stakeholders of ESG.

Employees

The Board receives regular updates in relation to employees, in addition to the results from the Group's global employee survey (further details on page 42). During 2019, the Board engaged with the Group's employees through a number of Board visits to key locations. The Group holds a series of annual strategy days and, as the Board is in attendance, it is able to get both formal and informal instant feedback from the Senior Management team.

Customers

During the year, the Board receives updates from senior management on key customer issues via the business reviews. The CEO and selected members of the Board also meet existing and potential clients at the key video games events (e.g. E3, GDC, Gamescom, Tokyo Games Show) to seek their input and gauge their current and future requirements. The CEO independently also regularly meets with the top echelon of key customers to strengthen relationships.

Suppliers

The Board recognises the important role that our suppliers play in helping us deliver our services, as this group comprises individual contractors in addition to a range of support service suppliers. In respect of our broader base of suppliers, the Board has developed a Supplier Code of Conduct, complemented by the adoption of a Modern Slavery Policy since 2017.

Community participants

The Board recognises the need to increase our community engagement and to support the good causes that we are part of. With this in mind, Keywords has pledged up to €100,000 per year to match funds raised for community outreach and charitable initiatives so that we can continue to support our local communities (further details on pages 30 and 31).

Board engagement with our stakeholders
continued

Decision making

We set out below the Group's remuneration policy and two examples, CEO pay ratio and Executive Director shareholding guidelines, of how the Directors have had regard to the matters set out in section 172(1)(a)-(f) when discharging their duties under section 172 and the effect of that on certain decisions taken by them.

Remuneration policy

The Group's Remuneration Committee, on behalf of the Board, is responsible for the determination and implementation of the Directors' remuneration policy, applicable to Executive and Non-Executive Directors.

The Remuneration Committee Chair and other members of the Remuneration Committee engaged with a number of our large shareholders and institutional shareholder bodies during 2018 and 2019 in relation to the review of the Directors' remuneration policy. Engagement with shareholders directly or through selective 'Remuneration Policy Issues' seminars plus regular dialogue and input from our advisers, Mercer Kepler, continued during 2019 in respect of the implementation and operation of the policy.

The Board believes regular dialogue with our shareholders is critical to ensure our remuneration policy aligns with their expectations wherever possible, and we found this engagement meaningful and useful in achieving that aim. It was clear from the dialogue with shareholders that there was a considerable desire for companies to simplify remuneration structures and for the total remuneration outcome to be transparent and aligned to shareholder experience.

The Chair also regularly meets with our primary regulators to understand their expectations, and to discuss our remuneration framework and practices and demonstrate how they promote sound and effective risk management.

CEO pay ratio

Whilst not required under AIM disclosure regulations, both shareholder and other advisory bodies recommended that companies do disclose on an annual basis the CEO pay ratio in a form that is both transparent and understandable. In addition, it was considered important to ensure that the CEO pay ratio was in fact well within Keywords Studios accepted guidelines compared to all employees of the Group. A decision was taken by the Remuneration Committee and ratified by Keywords' Board to include such disclosure in the 2019 Annual Report. More detail on the Keywords' CEO pay ratio can be found on page 67.

Executive Director shareholding guidelines

Also not required under AIM disclosure regulations is a guideline for shareholdings by the Keywords' Executive Directors. After consultation with shareholders and advisers, it was decided by the Remuneration Committee to introduce such a policy in 2020 and this was ratified by Keywords' Board. This is detailed in the Remuneration Section of this report on page 60.

Principal risks and uncertainties

The principal risks to which the Group is exposed are set out below, together with details of their potential impact; the likelihood of occurrence (on a scale of 1 to 3, with 1 being the most likely); an indication of whether the trend in the risk exposure is increasing, decreasing or broadly unchanged; and the actions taken to mitigate the risk.

The principal risks associated with the Group's strategy are divided into:

- **Those specific to the Keywords Group and its strategy;**
- **Industry-related risks; and**
- **General business risks for any international company.**

Group and strategy risks

	Likelihood	Actions	Trend
Acquisitions and Integration risks	3	Keywords has an active acquisition agenda to support its strategy of becoming the 'go to' global provider of services to the video games industry. Managing such acquisitions successfully and embedding the Keywords culture is a crucial ingredient of success. Failure to do so could result in the business not achieving the expected financial and operational benefits and adversely impact growth, profitability and cash flow. Since IPO, the Company has involved a broader number of senior managers in the acquisition and integration process, building on the considerable experience that exists at Board and senior management level, thus providing further bandwidth to identify, execute and integrate acquisitions effectively.	No change
Failure to deliver services	3	Most of Keywords' services are of a time-critical nature with delays or service delivery failures potentially impacting the development or launch plans for games. Timely delivery and the resourcing flexibility to enable delivery to tight deadlines has been an integral part of the Company's modus operandi, and Keywords' approach to project management is applied across the Group.	Increase
Cross contamination risk	2	As the Group succeeds in delivering multiple services to the same customers, so the risk of failure in one service line contaminating the relationship with the customer across the other service lines increases. Whilst the introduction of co-development adds to this risk in some respects, it also helps to mitigate it. Adhering to Keywords' strong standards of delivery and efficient communication across service lines is key to managing this risk.	Increase
Client concentration risk	3	The Company's client base principally comprises global game companies whose revenues are in the billions and hundreds of millions of dollars. Our top five customers account for 28.1% (2018: 25.6%) of the Company's revenues. These companies have exacting standards and demand a high quality of service. Any failure in this regard or breakdown in the relationships at the top level could cause considerable damage to the business. The potential impact is partially mitigated through the Company's highly flexible resource base and its expansion continues to reduce its exposure to any single large client, with no single customer accounting for more than 6.2% of revenues.	No change

Links to Strategic Pillars: Building our platform; Selective acquisitions; Organic growth and cross selling

Trend: No change; Increase; Decrease

Principal risks and uncertainties
continued

Group and strategy risks continued

	Likelihood	Actions	Trend
Financial performance – failure to meet expectations	2	Keywords floated on AIM in July 2013 with an expressed set of objectives of growing the business organically and by acquisition. Should the Company lose the confidence of investors, this will affect its ability to raise money for or place shares to pay for acquisitions. The Company makes every effort to communicate regularly with investors via announcements and face-to-face contact. This effective communication of the continued opportunities for growth in the sector, how the Group continues to execute on its stated strategy and successfully integrate the businesses it acquires, should continue to maintain the confidence of its investors. In addition, having extended the size and term of our revolving credit facility, the Group has a good mix of equity and debt funding which gives it the flexibility and headroom to invest in the business.	–
Inadequate financial and operational controls	3	Keywords has grown rapidly and it is important that global financial controls are in place to ensure smooth, timely and accurate reporting of financial results to satisfy our external reporting obligations as well as the Board. Failure to accurately report or forecast financial results through error or fraud would damage the Group's reputation. Therefore, the Group has invested and continues to invest in its financial reporting function to facilitate strong reporting and management control as it grows. In 2019, the Group appointed a new Head of Internal Audit to further drive improvements.	–
Failure to manage human resources / talent effectively	2	Keywords' management structure has been fundamental to the Group's success, enabled by embedding a Group culture that binds the teams together, with a common purpose and set of standards. We constantly work to develop and incentivise our people and to support their passion to perform the best service for each project and client, with regular staff surveys undertaken too. In addition, special emphasis is placed on workplace harmony and the prevention of any forms of discrimination, harassment, or malpractice in the workplace, recognising that any sense of dissatisfaction can be very disruptive. As a separate dimension, failure to attract, retain or develop high quality entrepreneurial management across the business could impact on the attainment of strategic objectives. The Group is focused on these areas with the implementation of globally managed service lines, management development and remuneration programmes, incorporating long and short-term incentives. But with an ever increasing workforce this becomes more demanding.	–
Non-compliance with legal and ethical standards	2	A material failure to comply with applicable legal and ethical standards could result in penalties, costs, reputational harm and damage to relationships with suppliers and customers. The Group promotes a culture of "Doing the right thing" in all activities. Business conduct guidelines are in place and are supported by more detailed policies and procedures where needed.	–

Links to Strategic Pillars:

Building our platform | Selective acquisitions | Organic growth and cross selling

Trend:

No change | Increase | Decrease

Industry-related risks

	Likelihood	Actions	Trend
Breaches to Technology and information security	2	The Company uses various third party and proprietary tools and technologies for process control and productivity purposes. Continued investment in these tools is important to ensure the Group's effectiveness. New technologies for automated testing, machine translation and crowd sourcing could pose a threat to the Group in the long-term. The Company participates directly with customers in various pilot programmes for new technologies to keep abreast of the state of the art. This is further underpinned through the formation of Keywords Ventures which is focused on new, emerging technologies that may impact the Group in the future. The industry requires the highest standards of security within a company offering services such as Keywords. Cyber security breaches may lead to piracy, disruption of customers' marketing plans, loss of competitive edge and could result in compensation claims. Keywords maintains physical and data security policies and procedures which are regularly audited by its larger customers.	↑
Regulation on video games	2	Changes in regulation on video games, such as those seen in the Chinese market which imposed curfews on minors, could result in the delay or cancellation of video games by our customers. In relation to the Chinese market, Keywords has limited revenue exposure to games destined solely for the Chinese market. In addition, any potential impact is partially mitigated through the Company's diverse revenue base (no single client larger than 6.2% (2018: 5.7%)).	↑
Tax credits risk	3	The Company receives multimedia tax credits (MMTC) in Canada and video games tax relief (VGTR) in the UK relating to qualifying costs in those markets. These tax credit regimes are designed to promote growth and investment in the relevant regions. Any reduction or cancellation of these tax credits would increase the cost base of the business and make the business less competitive. The Group works closely with regulators and governments in relation to these tax credits and has been given no indication that these tax credits will be removed in the medium term. The Group also retains the ability to move to other operating centres if material changes were made.	−

General business risks

	Likelihood	Actions	Trend
Sudden business interruption	1	Keywords is a global business and needs to minimise business interruptions and be able to continue servicing customers. This threat could be internal such as a major failure in its IT systems but also external such as the Group experienced and managed during the 2011 Tokyo earthquake and tsunami or currently with COVID-19 (see below). The Group's multiple, full-service, delivery hubs provide for a good level of contingency and, supported by business continuity plans, the effects of such disasters can be managed. 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 Localization 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. Further details on how the Group is responding to the challenge faced by COVID-19 is provided in the Chief Executive's review section on pages 14 and 15 and in the Service line review of pages 24 to 27.	↑
Global political risk and uncertainty	3	We operate and own assets in a large number of geographic regions and countries, and, as a result, we are exposed to a wide range of political, economic, regulatory, social and tax environments. Policies or laws in the countries in which we do business may change in a manner that may be adverse for us, even those with stable political environments. However the diversification and spread of activities geographically mitigates the risk of disruption in any one location. **Brexit** The UK accounts for 15.9% of Group revenue, with 380 employees of the Group's 7,424 based in the UK. The Board has assessed the risk of Brexit on Keywords and concluded that for now, this does not constitute a significant risk.	−
Currency risk	2	The Group transacts in multiple currencies, given our customers are located globally. Keywords is therefore exposed to short-term currency risks, in addition to longer-term risk that could develop between our functional currency (Euro) and our multiple billing currencies. The Group's largest exposure is to the US Dollar followed by the Canadian Dollar and Sterling. The Group does not hedge its currency risk because Keyword's main movements in exchange related gains or losses relate to the effect of translating net current assets held in foreign currencies.	↑

Board of Directors

Ross Graham (72)

Independent Non-Executive Director and Chairman

A N R D

Length of service with the Group (as at 16 April 2020):

7 years

Relevant skills and experience:

Ross has extensive Executive and Non-Executive experience in the technology sector. From being a partner in Arthur Young from 1981 to 1987, he joined Misys plc, a global software business as Finance Director upon its flotation, latterly becoming Corporate Development Director; throughout he played a key role in developing and implementing the very successful Misys acquisition strategy. Since retiring from Misys, Ross has held a number of Non-Executive directorships including those at Psion PLC from 2005 until 2012 (when it was successfully sold to Motorola Solutions Inc.), at Wolfson Microelectronics PLC from 2004 to 2013 (prior to its sale to Cirrus Logic Inc.), and several others. His experience in these companies has included being Senior Independent Director, Chairman of the Audit Committee and Chairman of the Remuneration Committee. Ross was appointed Director and Chairman of Keywords shortly prior to its flotation in July 2013. With his wealth of experience and chairing skills, Ross creates the necessary environment for dynamic Board discussion. He has helped elevate the governance processes without destroying the entrepreneurial essence of Keywords.

Andrew Day (56)

Group Chief Executive Officer

N D

Length of service with the Group (as at 16 April 2020):

11 years

Relevant skills and experience:

Andrew has a background in technology, manufacturing and business services through corporate development and general management roles within both publicly quoted and private companies. Andrew started his career in 1983 at Rothmans International PLC in production management. From 1986 to 1993 he had responsibility for corporate development activities at Britannia Security Group PLC, TIP Europe PLC and Brent International PLC before holding the position of Divisional Managing Director at Brent International PLC for six years. Andrew was Chief Executive Officer of interactive retail software developer, Unipower Solutions and Head of Retail and CPG for EMEA, a NYSE-listed advanced analytics business, FICO, before joining Keywords as its Chief Executive Officer in April 2009.

Jon Hauck (47)

Chief Financial Officer

D

Length of service with the Group (as at 16 April 2020):

6 months

Relevant skills and experience:

Jon has a wealth of finance, change management and M&A experience, having held the role of Group Financial Controller and Treasurer at Rentokil Initial plc since 2015. He joined Rentokil Initial in 2008 and prior to taking up his current position, held several roles including Programme Director in North America where he was responsible for leading a substantial integration programme. He subsequently became Chief Financial Officer of the North America operations. Prior to Rentokil Initial, he worked in PriceWaterhouseCoopers' Assurance practice. Jon is a Fellow of the Institute of Chartered Accountants of England and Wales.

David Reeves (73)

Senior Independent Non-Executive Director

A N R D

Length of service with the Group (as at 16 April 2020):

7 years

Relevant skills and experience:

David has over 30 years' global experience in management roles within multinational companies. He began his career with ICI in the UK and then moved to RJ Reynolds Nabisco where he worked from 1979 to 1991, becoming the worldwide Marketing Director in the USA in 1989. In 1991, David served as the General Manager and Vice President of Marketing in Tokyo for Mitsubishi Shoji JV Technology Company before moving into the computer game industry, opening and setting up the PlayStation Company in Germany, Switzerland and Austria. He was appointed Executive Vice President in 1999 and President and CEO of Sony Computer Entertainment (Europe) in 2003 where he remained until 2009. David now runs his own Management Consultancy practice as well as being on the Board of three major Charities in the UK. He brings to Keywords a global knowledge of growing multinational companies, experience of the video game industry, Corporate Governance and an understanding of working with companies to develop global strategies in Europe, Asia, North America and LATAM. He was appointed to the Board of Keywords Studios on 29 May 2013.

Giorgio Guastalla (51)

Non-Executive Director

(–)

Length of service with the Group (as at 16 April 2020):

21 years

Relevant skills and experience:

Giorgio Guastalla is co-founder of Keywords. Prior to establishing Keywords in Ireland in 1998, Giorgio held various positions in marketing and IT at Brent International PLC based in the US, Spain, the UK and France. In 2002 Giorgio founded Italicatessen Limited, a company operating in the food sector. Giorgio was CEO of Keywords until 2009 before concentrating on his other business interests and moving to a Non-Executive Director role at Keywords Studios. With over twenty years' experience in the industry, Giorgio brings a wealth of understanding and knowledge to Keywords.

Georges Fornay (63)

Independent Non-Executive Director

A

Length of service with the Group (as at 16 April 2020):

3 years

Relevant skills and experience:

Georges has over 30 years' experience in the technology and video games sectors and currently sits on the Board of France's second largest independent games publisher, Focus Home Interactive, which is listed on the Alternext. Georges worked in senior management at Sony Computer Entertainment from 1995 to 2011, including as CEO of the French and Swiss divisions and culminating as the Senior Vice President from 2004 to 2011. During this time he oversaw the launch of the PlayStation Portable and PlayStation 3. Prior to this, Georges spent nine years at Commodore, the last five years of which were as CEO of Commodore France PC Manufacturing and Distribution. Georges has also held significant industry-wide roles including four years as President of SELL, France's Union of Entertainment Software Publishers, where he was responsible for representing and advocating the industry's and its 31 members' interests to the French Government. Georges was appointed a Director of Keywords in September 2017.

Charlotta Ginman (54)

Independent Non-Executive Director and Chairman of the Audit Committee

A N R D

Length of service with the Group (as at 16 April 2020):

3 years

Relevant skills and experience:

A Fellow of the Institute of Chartered Accountants in England and Wales, Charlotta is Chair of the Audit Committee. She is a Non-Executive Director and Chair of the Audit Committee of Polar Capital Technology Trust PLC and Pacific Asset Trust PLC. She is also a Non-Executive Director of Unicorn AIM VCT PLC. Charlotta has held senior positions in the investment banking and technology / telecom sectors. She was appointed a Director of Keywords in September 2017.

Committee Membership

- A Audit Committee
- N Nomination Committee
- R Remuneration Committee
- D Disclosure Committee
- – None

Chairman's introduction

The Board is committed to the highest standards of corporate governance

Dear shareholders

As Chairman of the Board of Directors of Keywords Group plc (Keywords, or the Company/Group as the context requires), I am pleased to introduce the Group's corporate governance report. The corporate governance statement provides an insight into how the Board operated during the year and the key issues considered. The Board is committed to the highest standards of corporate governance. Our approach to governance is set by the Board and our Executive Directors ensure that the approach is effectively implemented across the business. Effective and robust governance remains central to the ongoing success of the Group.

It is my responsibility to ensure that the Group has both sound corporate governance and an effective Board. As Chairman of the Company, my responsibilities include leading the Board effectively, overseeing the Group's corporate governance model, communicating with shareholders and ensuring that good information flows freely between the Executive and Non-Executive Directors in a timely manner.

The Directors of the Company recognise the value of good corporate governance in every part of its business. The Company has adopted the Quoted Companies Alliance Corporate Governance Code (QCA Code), which we believe is the most appropriate for a company with the size and stage of development as Keywords.

The Board provides annual updates on our compliance with the QCA Code. During the year, the following changes were made to the Group's key corporate governance arrangements:

- Appointment of Jon Hauck as CFO in October 2019; and
- Appointment of Aisling Hanley as Head of Internal Audit in August 2019.

The Board considers that the Group complies with the QCA Code in all applicable respects. An explanatory statement of how we have applied the QCA Code guidance, and disclosures of any areas of non-compliance, can be found on our website at: www.keywordsstudios.com. The Board understands that the application of the QCA Code supports the Group's medium to long-term success whilst simultaneously managing risks and provides an underlying framework of commitment and transparent communications with stakeholders.

The main Group-wide governance documents are our Core Values and the Code of Conduct, which set out the values and standards that we expect of our employees. These documents, together with our policies, govern how we conduct our business and set the standards that drive performance. Compliance training helps to enforce this. Board oversight, reviews and audits form part of the monitoring and supervision process.

Risk processes are embedded and reviewed on an ongoing basis across the business. The important governance developments at Keywords over the last year are outlined below.

My ambitions for the composition of the Board are to maintain, and where applicable, broaden the range of expertise, experience and diversity. The Board continues to ensure that effective succession plans are in place.

Given the COVID-19 restrictions, it is no longer possible to hold the AGM in the way that the Board had planned and therefore regrettably we cannot allow shareholders to attend in person and the Company's Articles of Association do not currently permit hybrid or virtual meetings. The meeting will instead be convened at the offices of Keywords Studios, 39 Earlham Street, London, WC2H 9LT, United Kingdom on 27 May 2020, with the minimum necessary quorum of two shareholders (Chairman and CEO) present in order to conduct the business of the meeting. The Board of Directors strongly encourages shareholders to vote by proxy in lieu of attending in person. A video link of a presentation by the CEO of the Company will be made available for shareholders to view on the day of the Annual General Meeting on the Company's website at: www.keywordsstudios.com and the Board will look at opportunities to meet with shareholders later in the year where possible and only if and when it is deemed safe to do so.

Ross Graham

Ross K Graham
Chairman

16 April 2020

Corporate governance

Strategy

A description of the Company's strategy, business model and supporting strategic pillars, along with key strengths can be found in the strategic report on pages 18 to 23.

Internal controls and risk management

The Board recognises the need for an effective and well-defined risk management process and it oversees and regularly reviews the current risk management and internal control mechanisms. The Company's principal risks, along with key challenges in the execution of the Company's strategy and controls implemented to mitigate them, can be found in the strategic report on pages 45 to 47.

The Audit Committee has been delegated responsibility for the oversight of the Company's risk management and internal controls and procedures, as well as determining the adequacy and efficiency of internal control and risk management systems. The Board continuously monitors and upgrades its internal control procedures and risk management mechanisms and conducts regular reviews, when it assesses both for effectiveness. This process enables the Board to determine whether the risk exposure has changed during the year and these disclosures are included in the Annual Report. In setting and implementing the Company's strategies, the Board, having identified the risks, seeks to limit the extent of the Company's exposure to them having regard to both its risk tolerance and risk appetite.

The Directors believe that the Group has internal control systems in place appropriate to the size and nature of the business. The key elements are:

- Group Board Meetings, at a minimum of eight times per year, with reports from and discussions with senior Executives on performance and key risk areas in the business;
- Monthly financial reporting, for the Group and for each service line, of actual performance compared to budget and the prior year;
- Visits to key locations;
- Annual budget setting;
- Annual strategy conference with top management team; and
- A defined organisational structure with appropriate delegation of authority.

The Board is now further supported with the oversight of its internal control systems and risk management through the appointment of a Head of Internal Audit in August 2019.

Further information on the Company's approach to risk management and internal controls can be also found in the Audit Committee report on page 54.

The Board

The Board, as a whole, is responsible for the overall management of the Group and for its strategic direction, including approval of the Group's strategy, its annual business plans and budgets, the interim and full year financial statements and reports, any dividend proposals, the accounting policies, major capital projects, any investments or disposals, its succession plans and the monitoring of financial performance against budget and the formulation of the Group's risk appetite including the identification, assessment and monitoring of Keywords' principal risks.

Director biographies and committee memberships are set out on pages 48 and 49.

The Board comprises Andrew Day CEO, Jon Hauck CFO, one non-independent Non-Executive Director, Giorgio Guastalla, and four independent Non-Executive Directors, Georges Fornay, Charlotta Ginman, Ross Graham and David Reeves. David Reeves is the Company's Senior Independent Director (SID), and Ross Graham is the Company's Chairman. Letters of appointment of all Directors are available for inspection at the Company's registered office during normal business hours. The Executive Directors work full time for the Company. All the Non-Executive Directors are expected to dedicate at least 30 days per annum to the Company, rising to 40 days if they also chair a Committee, and the Chair is expected to dedicate 60 days per annum. The Company has adopted a policy whereby all members of the Board are subject to re-election at each AGM.

The Board is satisfied that it has a suitable balance between independence, on the one hand, and knowledge of the Company, on the other, and that no individual or group may dominate the Board's decisions. The Non-Executive Directors have both a breadth and depth of skills and experience to fulfil their roles. The Company believes that the current balance of skills in the Board as a whole reflects a very broad range of personal, commercial and professional experience, and notes the range of financial and managerial skills. All Directors are encouraged to use their independent judgement and to challenge all matters, whether strategic or operational, enabling the Board to discharge its duties and responsibilities effectively.

Corporate governance
continued

The Board continued

The Board meets a minimum of eight times a year and a calendar of meetings and principal matters to be discussed are agreed at the beginning of each year. In order to be efficient, the Directors meet formally and informally both in person and by telephone. Board and Committee document authors are made aware of proposed monthly deadlines through the calendar of meetings assembled at the beginning of the year. Board papers are collated by the relevant personnel (Chair, Company Secretary, CFO, Committee Chair), compiled into a Board/Committee Pack, and circulated at least three working days before meetings, allowing time for full consideration and necessary clarifications before the meetings. The Board also utilises a fully-functioning Board Portal, which ensures the provision of timely and efficient distribution of Board and Committee papers as well as an effective means of communication for the Board.

Management supply the Board with appropriate and timely information and the Directors are free to seek any further information they consider necessary.

Senior Independent Director

David Reeves acts as the Senior Independent Director (SID) of the Company, serving as a sounding board for the Chairman and acting as an intermediary for the other Directors. The SID is also available to shareholders and other Non-Executive Directors to address any concerns or issues they feel have not been adequately dealt with through the usual channels of communication.

Audit Committee

The Audit Committee is chaired by Charlotta Ginman, and its other members are Ross Graham, David Reeves and Georges Fornay. The Audit Committee is responsible for assisting the Board in fulfilling its financial and risk responsibilities. The Audit Committee oversees the financial reporting, risk management and internal control procedures of the Company. The Audit Committee also advises the Board on the appointment and removal of the external auditor and discusses the nature, scope and results of the audit with the auditors. The Audit Committee reviews the extent of non-audit services provided by the auditors and reviews with them their independence and objectivity. Further information on the Audit Committee can be found in the Audit Committee report on page 54.

Remuneration Committee

The Remuneration Committee is chaired by David Reeves, and its other members are Charlotta Ginman and Ross Graham. The Remuneration Committee is responsible for determining the remuneration of the Chairman, Executive Directors, the Company Secretary and senior Executives of Keywords. The Remuneration Committee is responsible for making recommendations to the Board of Directors' and senior Executives' remuneration. Non-Executive Directors' remuneration and conditions are considered and agreed by the Board. Financial packages for Executive Directors are established by reference to those prevailing in the employment market for Executives of equivalent status both in terms of level of responsibility of the position and their achievement of recognised job qualifications and skills. The Committee will also have regard to the terms, which may be required to attract an equivalent experienced Executive to join the Board from another company. Further information on the Remuneration Committee can be found in the Remuneration Committee report on page 57 to 69.

Nomination Committee

The Nomination Committee is chaired by Ross Graham. Charlotta Ginman, David Reeves and Andrew Day are the other members. Further information on the Nomination Committee, including its role and responsibilities, can be found in the Report of the Nomination Committee on page 70.

Disclosure Committee

The Disclosure Committee is responsible for assisting in the design, implementation and evaluation of the Company's disclosure controls and procedures. The Disclosure Committee is chaired by Andrew Day and its other members are Charlotta Ginman, David Reeves, Ross Graham and Jon Hauck.

Terms of reference of all Keywords' Committees are available to view on the Company's website at: www.keywordsstudios.com

The table below sets out attendance statistics for each Director at scheduled Board, and where relevant, Committee meetings held during the financial year.

Director	Board 11 meetings held	Audit Committe 5 meetings held	Remuneration Committee 8 meetings held	Nomination Committee 2 meetings held	Disclosure Committee 2 meetings held
Ross Graham	11	5	8	2	2
Andrew Day	11	–	–	2	2
David Broderick*	8	–	–	–	1
Jon Hauck**	3	–	–	–	1
David Reeves	11	5	8	2	2
Giorgio Guastalla	11	–	–	–	–
Georges Fornay	11	5	–	–	–
Charlotta Ginman	11	5	8	2	2

* Resigned 14 October 2019.

** Appointed 14 October 2019.

The Non-Executive Directors meet without the presence of the Executive Directors during the year, and also maintain ongoing communications with Executives between formal Board meetings.

Meetings are open and constructive, with every Director participating fully. Senior management can also be invited to meetings, providing the Board with a thorough overview of the Company.

In addition to their general Board responsibilities, Non-Executive Directors are encouraged to be involved in specific workshops or meetings, in line with their individual areas of expertise. The Board is kept abreast of developments on governance and AIM regulations. ONE Advisory Limited, Keywords' Company Secretary, provides updates on governance issues, and the Company's Nominated Adviser (Nomad) provides annual Board AIM Rules refresher training as well as the initial training as part of a new Director's on-boarding.

The Board shall review annually the appropriateness and opportunity for continuing professional development, whether formal or informal.

Advisors

The Board has regular contact with its advisors to ensure that it is aware of changes in corporate governance procedures and requirements and that the Group is, at all times, compliant with applicable rules and regulations. The Company has Director and Officers' liability insurance cover in place throughout the year and it is intended for the policy to continue for the year ending 31 December 2020 and subsequent years. Additionally, the Company provides an indemnity in respect of all the Company's Directors or other officers of the Company against all costs, charges, losses, expenses and liabilities incurred by them in the execution and discharge of their duties. The Company's Nomad supports the Board's development, specifically providing guidance on corporate governance and other regulatory matters, as required.

Liam O'Donoghue of ONE Advisory Limited is Keywords' Company Secretary. ONE Advisory Limited is responsible for ensuring that Board procedures are followed and that the Company complies with all applicable rules, regulations and obligations governing its operation, as well as helping the Chairman to maintain excellent standards of corporate governance. ONE Advisory Limited also provides Board support through assistance with shareholder meetings and Market Abuse Regulation (MAR) compliance.

The Company has also enlisted the support of Mercer Kepler, who provides advice in relation to remuneration. Additional information can be found in the Remuneration report on pages 57 to 69.

All Directors may receive independent professional advice at Keywords' expense, if necessary, for the performance of their duties.

Board and Committees performance evaluations

Details of the Company's Performance Evaluations for the year can be found in the Report of the Nomination Committee on page 70.

Culture

The Board recognises that its decisions regarding strategy and risk may impact the corporate culture of the Company as a whole and that this will impact the performance of the Company. The Board is also aware that the tone and culture set by the Board can have an impact on the Company as a whole and on the way that employees behave. The corporate governance arrangements that the Board has adopted are designed to ensure that the Company delivers long term value to its shareholders and that shareholders are able to express their views and expectations for the Company in a manner that encourages open dialogue with the Board.

A large part of the Company's activities are centred upon an open and respectful dialogue with employees, customers and other stakeholders. Therefore, the importance of sound ethical values and behaviours is crucial to the ability of the Company to successfully achieve its corporate objectives. The Board places great importance on this aspect of corporate life and seeks to ensure that this flows through all that the Company does. The Directors consider that the Company has an open culture facilitating comprehensive dialogue and feedback, which enables positive and constructive challenge.

Further information on the Company's culture can be found in the strategic report pages 28 to 33.

Audit Committee report

Introduction from the Chair

As Chair, I am pleased to present the Audit Committee report for the year ended 31 December 2019. This report details the work of the Committee over the past year, fulfilling our responsibilities to provide effective governance over the Group's financial activities.

Last year I outlined our intention to introduce an Internal Audit function to the business and I am pleased to report that a Head of Internal Audit was recruited during the year and an Internal Audit Charter has been approved by the Committee together with the Internal Audit plan for 2020. As part of the establishment of the Internal Audit function, management has conducted an exercise to confirm the key financial controls that are expected to be in place across the business which will form the core basis of the Internal Audit testing process going forward.

Audit Committee

Composition and attendance in 2019

The Committee members, apart from myself, continue to be Ross Graham, David Reeves and Georges Fornay. The Audit Committee, as a whole, has competence relevant to the video games industry, both Ross Graham and I are Chartered Accountants and I also chair the Audit Committee for other public companies. More information about the Committee members can be found on pages 48 and 49. The Committee met five times during the financial year with all members in attendance.

Committee role and responsibilities

The role of the Audit Committee is to assist the Board in its oversight and monitoring of the internal control environment and risk management of the Group and the Group's financial reporting. The Audit Committee's focus is to review and challenge these areas with both management and the external auditor, in particular the Audit Committee:

- Monitors the integrity of the Group's financial reporting including key accounting policies and judgement areas (eg revenue recognition, goodwill impairment reviews and acquisition accounting), the use of Alternative performance measures and the going concern review;
- Reviews the internal control and risk management framework including key operating risks, financial systems roll out, treasury, taxation and cyber risk, data protection and disaster recovery plans;
- Monitors the Internal Audit function including the approval of the Internal Audit Charter and the annual Internal Audit plan;
- Establishes and oversees the engagement and review of performance of the external Auditor including monitoring its independence and reviewing audit and non-audit services; and
- Reviews key policies such as whistleblowing, anti-tax evasion, anti-bribery / corruption and Modern Slavery Policies.

Terms of reference

The Committee has written Terms of Reference which clearly define the Committee's responsibilities and duties. The Terms of Reference were reviewed by the Board during 2019 and are available to view on the website, www.keywordsstudios.com. In addition to the Terms of Reference, the Committee has developed an annual agenda which corresponds with the meeting schedule, to ensure all key responsibilities are completed and managed.

Activities of the Audit Committee during the year

Internal Audit

The Committee has worked closely with management to establish an Internal Audit function with the recruitment of a Head of Internal Audit in the second half of 2019. The Head of Internal Audit reports into the Audit Committee Chair with a dotted reporting line into the Group CFO. The activities of the Internal Audit function are governed by an Internal Audit Charter that was signed off by the Audit Committee during the year.

In December 2019, the Audit Committee approved the Internal Audit plan for 2020 which will focus on:

- Roll-out of and adherence to Group policies;
- Review of key processes in financial reporting and sales;
- Review of the integration of a selection of acquisitions; and,
- Review of key finance controls at significant studios.

This plan aims to address some of the internal and financial risks and uncertainties identified on pages 45 to 47 such as:

- Acquisition risk – how new entities are integrated into the Keywords business;
- Adequacy of and compliance with financial and operating controls to ensure smooth timely and accurate reporting; and
- Compliance with legal and ethical standards to promote the culture of "Doing the right thing".

Internal control and risk assurance framework

As part of the establishment of the Internal Audit function, management has conducted an exercise to confirm the set of key financial controls expected to be in place and operational in all of the businesses across the Group. This will be used as the framework for the Internal Audit testing in the future. As part of this exercise, each Regional Finance Director conducted a self-assessment of the adherence to the key financial controls within their region. It was pleasing to see that this did not reveal any major control weaknesses but it did identify a number of areas where controls can be improved as well as opportunities to standardise and automate some of the finance processes across the business.

The Audit Committee has continued to review and challenge the upgrades that have taken place during the year to the Company's internal control and risk assurance framework to ensure that following its rapid expansion, the Company operates within a fit for purpose framework. The Committee is pleased to see continued progress made in the global automated financial systems roll-out, eventually allowing a fully integrated automated reporting system to operate seamlessly across the Group, replacing the current manual consolidation processes that are both labour intensive and potentially prone to human error. During 2019 the focus has been on North America, which is now all migrated to the new system, and recent acquisitions. The work on our cash pooling platform continues, providing us with better control of Group cash and the optimisation of cash management.

The industry requires the highest standards of security within a company offering services such as Keywords. During 2019 the Committee received regular cyber security updates from the IT function to review both the physical and data security policies and procedures.

During the year the Audit Committee has continued its regular review of the Company's main risks on behalf of the Board, ensuring key risks are top of mind and relevant, and mitigation plans are in place where possible. For 2019 the risk assessment framework was cascaded to the senior leadership team.

Going concern

The Audit Committee reviewed the Going Concern assessment including the downside sensitivities to the Group's cash flow projections to evaluate the Group's ability to withstand a prolonged period of studio closures as a result of the COVID-19 pandemic, leading to a reduction in production capability.

Key accounting issues

During the year and as part of the year end procedures, the Committee considered the following key financial and internal control matters in relation to the Group's financial statements and disclosures with input from both management and the external Auditor:

- Revenue recognition
- Functional reference currency
- Business combinations
- The valuation of Goodwill and Intangible Assets
- Financial instruments
- Alternative performance measures and KPIs
- Segmental reporting
- Application and impact of new standard IFRS 16 (Leases)
- Taxation
- Going concern

For further detail on these, see notes 2 and 3 of the financial statements.

Annual Report and financial statements

The Board has asked the Committee to confirm that in its opinion the Annual Report as a whole can be taken as fair, balanced and understandable and provides the information necessary for shareholders to assess the Group's financial position, performance, business model and strategy. In doing so the Committee has given consideration to:

- The way the strategic reports (including the Chairman's statement and reports of the CEO and CFO) present the Group – its business, financial and business model and the metrics management uses to measure performance;
- Whether suitable accounting policies have been adopted and have challenged the robustness of significant management judgements and estimates reflected in the financial results;
- The comprehensive control framework around the production of the Annual Report, including the verification processes in place to deal with the factual content;
- The extensive levels of review that are undertaken in the production process, by both management and advisers; and
- The Group's internal control environment.

The Group has adopted IFRS 16 Leases from 1 January 2019. Throughout the year the Committee received updates from both management and the external Auditor on the planning and processes being put in place and the subsequent impact of the new reporting standard. More detail regarding this standard can be found in notes 2, 3 and 24 of the financial statements.

The Group uses certain APMs to present its results. These are non-GAAP measures but are designed to provide the users of the financial statements with a better understanding of the underlying trading performance of the business. An explanation of the APMs and a reconciliation to the nearest statutory equivalent measure is provided on pages 135 to 143. During the year management has reviewed the disclosure of APMs and has made a number of changes to make the reconciliations to the nearest GAAP measures more meaningful.

As a result of the work performed, the Committee has concluded that the Annual Report for the year ended 31 December 2019, taken as a whole, is fair, balanced and understandable and provides the information necessary for shareholders to assess the Group's performance, business model and strategy, and it has reported on these findings to the Board.

Whistleblowing

During the year, the Audit Committee reviewed and re-approved the whistleblowing policy and accompanying process the Company has rolled out globally. The policy allows employees wherever they are to raise any concerns they may have about possible financial or other irregularities confidentially. During 2019, 3 whistleblowing disclosures were reported, none of which related to financial matters, with all of these investigated and satisfactorily resolved.

The Group is committed to the highest levels of integrity and accountability and the prevention of bribery and corruption.

Audit Committee report
continued

External audit

Audit services

The Auditor is appointed by the shareholders to provide an opinion on financial statements prepared by the Directors. BDO, the Company's current Auditor, was first appointed on 29 May 2013.

The scope of the current annual audit was agreed in advance with the Committee with a focus on areas of audit risk and the appropriate level of audit materiality. The Committee also had discussions with the auditor on fees, internal controls, accounting policies and areas of critical accounting estimates and judgements. The auditor attends all meetings of the Audit Committee and reported to the Audit Committee on the results of the audit work and highlighted any issue which the audit work had discovered, or the Committee had previously identified as significant or material in the context of the financial statements.

There were no adverse matters brought to the Audit Committee's attention in respect of the 2019 audit, which were material or significant or which should be brought to shareholders' attention.

Effectiveness

The Audit Committee monitored and evaluated the effectiveness of the Auditor under the current terms of appointment based on an assessment of the Auditor's performance, qualification, knowledge, expertise and resources. The Auditor's effectiveness was also considered along with other factors such as audit planning and interpretations of accounting standards and separate discussions with Management (without the Auditor present) and with the Auditor (without Management present). The Chair of the Audit Committee also had discussions with the Audit partner outside the formal meetings throughout the year.

The Committee was satisfied that the audit was effective and that BDO continues to demonstrate the skills and experience needed to fulfil its duties effectively.

Independence and non-audit fees

A non-audit services policy was established in 2018, in line with the FRC ethical standards. Any non-audit services are required to be pre-approved by the Audit Committee. During the year BDO provided non-audit services to the Company of €12,000 (2018: €23,000).

During 2019, the policy regarding the recruitment of former external audit staff was reviewed and approved. In order to fulfil the Committee's responsibility regarding independence of the Auditor, the Committee reviewed the senior staffing of the audit, the Auditor's arrangements concerning any conflicts of interest, the extent of any non-audit services and the Auditor's independence statement. The Committee was satisfied that the Auditor remains independent.

Charlotta Ginman, FCA
Chair of the Audit Committee
16 April 2020

Directors' remuneration report

Dear Fellow shareholders

As Chairman of the Remuneration Committee, it is my pleasure to present the Directors' remuneration report for the period ended 31 December 2019.

Keywords Studios plc has chosen to apply the Corporate Governance Code for Small and Mid-size Quoted Companies published by the Quoted Companies Alliance. The Company is currently AIM quoted and the Board recognises the importance of shareholder transparency and standards of governance. Therefore, this report contains all the information required to be disclosed as an AIM quoted Company and also contains some additional information that would be applicable were the Company listed on the London Stock Exchange main market, and includes:

- The Directors' Remuneration Policy; and
- Our Annual Report on remuneration, detailing Director remuneration in 2019 and that set for 2020.

We operate a simple Executive Director remuneration structure made up of base salary and pension, a bonus plan and a Long Term Incentive Plan ("LTIP") which provides a clear link between pay and our key strategic priorities. We recognise that there is currently a general focus on companies where Executive pensions are not aligned with the rest of their workforce; the Committee would like to highlight that Keywords does not provide a significant pension above that of local legal requirements as detailed in our remuneration policy, and the pensions offered to Executive Directors is the same as that offered to the local workforce.

In October 2019, Jon Hauck joined the Board as Group Chief Financial Officer. His remuneration structure is consistent with our Remuneration Policy whereby his salary has been set below market median, and his bonus potential is in line with that of the CEO, Andrew Day. Jon was also granted a one-off award of LTIP shares to compensate for those awards he forfeited on his departure from his prior employment.

The Remuneration Committee intends to keep its approach to remuneration under regular review for continued appropriateness taking account of regulatory requirements and corporate governance best practices as applicable to the Company over time. To this end, it is relevant to note our decision to introduce a shareholding guideline from 2020 and to adopt the CEO pay ratio disclosure in this report. No other changes are intended in relation to the implementation of our Remuneration Policy in 2020.

It is my hope that you find this a clear and comprehensive report and I look forward to hearing the views of our investors on the information presented here over the coming months. We will carefully monitor emerging practice in this area as well as guidance from investor representative groups.

David A Reeves.

Dr David Reeves
Chair of the Remuneration Committee

16 April 2020

Directors' remuneration report
continued

Executive Directors' remuneration at a glance

The following is a summary of the key components of Keywords' Executive Director remuneration, including changes and implementation in the financial year.

Element	Implementation in 2019	Implementation in 2020
Salary	With effect from 1 March 2019: • Andrew Day, CEO: £240,000 • David Broderick, Former CFO: €168,695 (until 14 October 2019) • Jon Hauck, CFO: £200,000	With effect from 1 March 2020: • Andrew Day, CEO: £244,800 (2% increase) • Jon Hauck, CFO: £204,000 (2% increase)
Pension	Executive Directors have access to pension schemes based on local legal requirements or where expected by local labour markets. Contributions (up to the salary cap of £50,000) meet the minimum requirements and amount to: • Andrew Day, CEO: 3% of salary (capped at £50K salary) • David Broderick, Former CFO: 5% of salary • Jon Hauck, CFO: 5% of salary	Andrew Day's pension to align with the majority of UK staff with a contribution of 3% of salary with no salary cap No change for Jon Hauck
Annual bonus	Maximum opportunity of 30% of salary based on: • Financial targets including turnover and profitability (weighted 80%) • Discretionary individual performance (weighted 20%) Payouts for 2019 were £nil for Andrew Day (as bonus was waived) and £5,631 for Jon Hauck. As a leaver during 2019, David Broderick was not eligible to earn a bonus for 2019	No change to opportunity or measures
LTIP	50,000 and 25,000 LTIPs granted to Andrew Day and David Broderick respectively. Jon Hauck was granted a regular 2019 award of 25,000 LTIPs on his appointment, and an additional 43,936 LTIPs in compensation for awards he forfeited on his departure from his previous employment 3-year performance period Vesting based on Total Shareholder Return performance against FTSE Small Cap Index Upon his departure, the 2019 LTIPs granted to David Broderick were forfeited	The Remuneration Committee intends to make LTIP awards in line with previous years to the CEO and CFO respectively
Other		Introduced shareholding guidelines for Executive Directors at 100% of salary

Section 1: Directors' remuneration policy

Policy and principles

The Remuneration Committee determines the Company's policy on the structure of the remuneration for Executive Directors and the Senior Management Team ("SMT") and is responsible for governing the remuneration policy for the broader employee population.

The objectives of this policy are to:

- Reward Executive Directors and the SMT in a manner that ensures they are properly incentivised and motivated to perform in the best interests of shareholders.
- Provide a level of remuneration required to attract and motivate high-calibre Executive Directors and SMT members.
- Encourage value creation through consistent and transparent alignment of incentive arrangements with the agreed Company strategy over the long term.
- Ensure the total remuneration packages awarded to Executive Directors and SMT members, comprising both performance-related and non-performance-related remuneration, are designed to motivate the individual, align interests with shareholders and comply with corporate governance best practices.

The Board and the Remuneration Committee believe the foregoing objectives are best achieved by a remuneration structure whereby:

- Basic pay is set at a below-median level albeit sufficient for the challenges and pressures of the role;
- Annual bonuses are set at modest levels with a maximum of 30% of salary on the premise that an annual bonus does not influence the behaviour or commitment of a senior Executive (this does not apply to sales Executives); and
- Long-term incentives are the means by which Executives can earn significant rewards if, but only if, shareholders likewise have obtained a good return.

Remuneration components for Executive Directors and SMT (the 'Executives')

Various remuneration components are combined to ensure an appropriate and balanced remuneration package which reflects the size and complexity of the Group, the Executive's experience, responsibility and position, as well as market practice. For this, the Remuneration Committee takes into account the performance of the individual, comparisons with peer companies and, where considered appropriate, reports from external independent consultants.

The remuneration package comprises the following elements:

- Fixed remuneration (basic salary and, for some Executives, pension);
- Performance-based remuneration (annual bonus and LTIP):

Purpose and link to Strategy	Operation	Opportunity	Performance measures
Base salary			
To attract and retain talented Executives to deliver the Group's strategy, by ensuring base salaries and the implied total package are competitive in relevant talent markets, while not overpaying.	Base salaries are reviewed by the Committee annually, and benchmarked periodically against comparable roles at comparable companies of similar size and complexity.	Salaries are set on a case-by-case basis to reflect the role, the experience and qualifications of the individual, and are targeted at below market median. Base salary increases for the Executives take into account personal performance, Group performance, significant changes in responsibilities, the average increase awarded to the wider workforce, and competitive market practice.	n/a
Pension and benefits			
To provide an appropriate structure and level of post-retirement benefit for Executives in a cost-efficient manner that reflects local market norms in the relevant jurisdiction.	At the discretion of the Remuneration Committee, the Executives may participate in a pension scheme facilitated by the Company. The Company also provides access to Group Benefit schemes where appropriate by Region which may include moderate contribution towards private health insurance, death in service cover and other Group based benefits.	The Company provides access to pension schemes based on local legal requirements or where expected by local labour markets. Contributions meet the minimum requirements or are of a modest level. Basic additional benefits may also be provided where available and where considered the norm for managerial positions in similar businesses.	n/a

Directors' remuneration report
continued

Remuneration components for Executive Directors and SMT (the 'Executives') continued

Purpose and link to Strategy	Operation	Opportunity	Performance measures
Annual bonus			
To provide a modest award where individual and Company performance have been at or above expected levels.	Executives are eligible to participate in an annual bonus scheme. The Remuneration Committee reviews targets and the weighting of performance measures each year. The Company also offers commission arrangements for Executives in sales roles.	Up to a maximum of 30% of salary (excluding sales plans where the maxima may vary).	The portion of bonus earned in any one year depends on the Remuneration Committee's assessment of each individual's performance and the overall performance of the Company against predetermined turnover and profitability targets for the year. Performance targets are typically weighted 80% on the Company's financial performance and 20% on personal performance (however, if the Company's financial performance is considered to be unsatisfactory, the element based on personal performance is likely to be foregone or reduced).
LTIP			
To incentivise delivery against total shareholder return targets and align the interests of Executives and shareholders in growing the value of the Group over the long-term.	LTIP grants are made annually in the form of conditional awards of shares or nil-cost share options which vest subject to performance conditions measured over three years. Once vested, awards may be exercised for a period of up to 7 years from grant. Malus provisions apply in certain circumstances.	LTIP awards are granted as a number of shares.	Vesting of the LTIP is subject to continued employment during the performance period and the achievement of performance conditions based on Total Shareholder Return ("TSR"). The Committee has the power of discretion to adjust the outcome in exceptional circumstances so that it is a fair reflection of the underlying performance of the Group. Further details, including the performance targets attached to the LTIP in respect of each year will be disclosed in the relevant implementation report on Remuneration (subject to these being considered not to be commercially sensitive).

Executive Director shareholding guidelines

With effect from February 2020, a new guideline was introduced which encourages Executive Directors to build and maintain over time a shareholding in the Company with a value equivalent to at least 100% of their base salary to be met through the retention of vested LTIP shares. Andrew Day has a significant shareholding and therefore has already met the guideline. Jon Hauck will be expected to build his shareholding in line with the guideline. Details of the Executive Directors' current shareholdings are provided on page 68.

Malus policy

For any awards granted since 2016, malus may be applied to LTIP awards in cases of fraud, dishonesty or deceit, gross misconduct or material financial misstatement in the audited financial results of the Group. The Remuneration Committee may determine that an award is cancelled in its entirety or be reduced to the extent they see fit.

Use of discretion

The Remuneration Committee may apply its discretion when agreeing remuneration outcomes, to help ensure that the implementation of our remuneration policy is consistent with underlying Company performance and is equitable to all parties.

Executive Director service contracts

In accordance with general market practice, each of the Executive Directors has a rolling service contract. The following table shows the date of the service contract for each Executive Director in post at the end of the year:

Executive Director	Position	Date of appointment	Date of service agreement	Notice period
Andrew Day	CEO	1 Apr 2009	21 Jun 2013	6 months
Jon Hauck	CFO	14 Oct 2019	30 Sep 2019	6 months

Remuneration for the wider workforce

The remuneration policy for other employees is based on principles consistent with those that are applied to Executive remuneration, with the common objective of driving financial performance and the achievement of strategic objectives and contributing to the long-term success of the Group. Remuneration supports our ability to attract, motivate and retain skilled and dedicated individuals whose contribution continues to be a key factor in the Group's success.

Annual salary reviews take into account Company performance, local pay and market conditions plus salary levels for similar roles in comparable companies. Some employees below Executive level are eligible to participate in annual bonus schemes; opportunities and performance measures may vary by organisational level, geographical region and an individual's role. An annual survey is conducted to ensure gender equality as it relates to employee compensation.

The Company performs equal pay and gender pay gap analyses across all its locations. In particular, the Board of Directors discussed the results of the latest analyses in December 2019 and are satisfied that there is equal pay, given location and role.

ESOP (LTIPs and Stock Options) programmes are used for senior permanent members of staff, in which approximately 10% of the workforce (3.3% in the LTIP and 6.7% in Stock Options) participate. The focus of the LTIPs is to retain talent and create long-term shareholder value consistent with fulfilment of the Company's long-term strategic goals.

External appointments held by Executives

Executives may not accept any external appointment without the consent of the Board.

Consideration of shareholder views

The Remuneration Committee will take into consideration all shareholder views during the year and at the AGM each year as well as guidance from shareholder representative bodies more broadly, in shaping the Company's implementation of its Remuneration Policy as well as future changes to the Policy.

Leaver treatment

Fair treatment will be extended to departing Executives. The Group's policy on termination payments is to consider the circumstances on a case-by-case basis, taking into account the relevant contractual terms in the Executive's service contract and the circumstances of termination.

Executives who resign or are dismissed for cause are, by default, not eligible for an annual bonus if they have left or are under notice at date of payment and forfeit all unvested LTIP shares.

At the Remuneration Committee's discretion good leavers (normally including such circumstances as retirement, death, disability and redundancy) may be allowed to exercise a proportion of unvested LTIPs post-termination when, or to the extent that, the underlying LTIPs meet the performance criteria for vesting.

On a change of control, unvested LTIP awards may be exercised at the time of the event subject to achievement of any performance conditions.

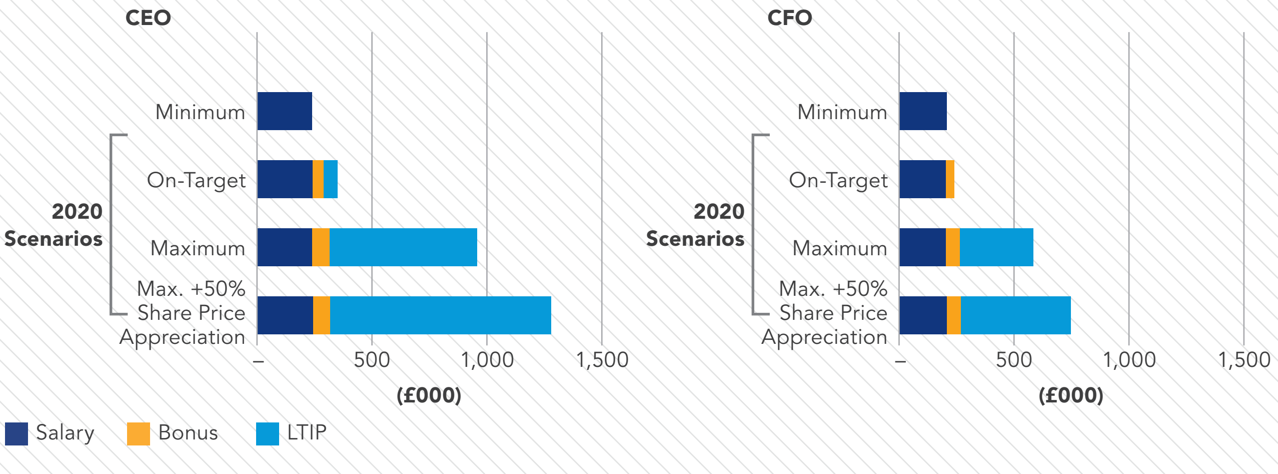
Directors' remuneration report
continued

Pay for performance scenario analysis

The charts that follow provide an estimate of the potential future reward opportunities for the Executive Directors, and the potential split between the different elements of remuneration under three different performance scenarios: 'Maximum', 'On target' and 'Minimum'. These charts illustrate how performance-orientated and long-term the Company's remuneration arrangements are, with the majority of the remuneration opportunity being delivered only under a 'Maximum' scenario. We have also included a bar showing the value of the actual package in 2019.

Potential reward opportunities are based on the Remuneration Policy, applied to 2020 base salaries and incentive opportunities. Note that the LTIP awards granted in a year will not normally vest until the third anniversary of the date of grant, and the projected value excludes the impact of share price movement.

Potential future reward opportunities for CEO and CFO



Assumptions:

'Actual 2019': Fixed remuneration (2019 base salary, pension), bonus granted in 2019 and LTIP vesting in 2019.

'Minimum': Fixed remuneration only (2020 base salary, pension), being the only element of Executive Directors' remuneration not linked to performance.

'On Target': Fixed remuneration as above, plus target bonus (18% of base salary) and threshold LTIP vesting (10% of maximum) at the 3-month average share. price to 31 December 2019.

'Maximum': Fixed remuneration, plus maximum bonus (30% of salary) and full vesting of proposed 2020 LTIP awards at 3-month average share price to 31 December 2019.

'Maximum+50%': As per Maximum scenario but with an assumption of share price growth of 50% over the 3-year performance period for LTIP awards.

Non-Executive Director fee policy

Non-Executive Directors receive fees for attendance at board meetings and its sub-committees. The Company does not operate any pension scheme for Non-Executive Directors nor do they participate in any variable pay plan. Any reasonable business expenses (including tax thereon) may be reimbursed.

Section 2: Implementation of the remuneration policy in 2019

The Remuneration Committee

The members of the Remuneration Committee in 2019 were David Reeves (Committee Chairman), Charlotta Ginman and Ross Graham. The members are all Independent Non-Executive Directors. In the year ended 31 December 2019, the Remuneration Committee met on eight occasions. All three members of the Committee attended the committee meetings throughout the year together with, on occasion, the CEO, the CFO, the COO and the Global HR Director, all at the request of the Committee Chairman.

The Company Chairman and the Chairman of the Remuneration Committee also met with key investors on several occasions in 2019 to obtain input and feedback on Executive and Company-wide remuneration.

The remit of the Committee is to determine and agree with the Board the framework for the remuneration of the Company Chairman (Ross Graham is not involved in related discussions), Executive Directors, Company Secretary and other members of the Senior Management of the Group, and also oversee the remuneration policy for the wider workforce. No Director is involved in any discussion or decision about his or her own remuneration.

Mercer Kepler supports the Remuneration Committee on remuneration related matters and is a member of the Remuneration Consultants' Group and, as such, voluntarily operates under the Code of Conduct in relation to Executive remuneration consulting in the UK. Mercer Kepler does not have any other association with the Company and is considered independent by the Committee.

Directors' emoluments

The remuneration for the Directors of the Company for the period year ended 31 December 2019 is detailed in the table below:

	2019					2018				
	Salary or fees £000	**Bonus £000**	**Pension £000**	**LTIP £000**	**Total £000**	Salary or fees £000	Bonus £000	Pension £000	LTIP £000	Total[7] £000
Andrew Day	**234**	**–**	**2**	**962[1]**	**1,198**	204	19	1	596[3]	820
Jon Hauck[4]	**50**	**6**	**3**	**-**	**59**	–	–	–	–	–
David Broderick[5]	**201**	**–**	**7**	**347[2]**	**555**	135	12	7	–	154
Ross Graham	**92**	**–**	**–**	**–**	**92**	70	–	–	–	70
David Reeves	**68**	**–**	**–**	**–**	**68**	58	–	–	–	58
Giorgio Guastalla	**48**	**–**	**–**	**–**	**48**	45	–	–	–	45
Georges Fornay	**51**	**–**	**–**	**–**	**51**	49	–	–	–	49
Charlotta Ginman	**63**	**–**	**–**	**–**	**63**	58	–	–	–	58
Total (£000)	**807**	**6**	**12**	**1,309**	**2,134**	619	31	8	596	1,254
Total (€000)[6]	**949**	**7**	**14**	**1,539**	**2,508**	728	36	9	701	1,474

1. Based on share price at vesting date of 10th May 2019 @£16.04.
2. Based on share price at vesting date of 3rd Oct 2019 @£11.57.
3 Based on share price at vesting date of 1st Jun 2018 @£17.04.
4. Jon Hauck's salary and pension are calculated from his start date of 30th September 2019.
5. David Broderick's salary and pension are calculated to his departure date of 30th November 2019.
6. FX Eur/Stg = 0.8508.
7. Individual remuneration has been rounded to the nearest £000 and the rounding differences have not been reflected in the total.

Annual bonus outcome for 2019

During 2019, the Executive Directors participated in the annual bonus scheme, and were eligible to earn awards of up to 30% of salary, subject to the attainment of specific targets set for each individual. The portion of bonus earned in the year was dependent on Company performance (weighted 80%) against turnover and profitability targets for the year in line with our financial KPIs (see pages 34 and 35) and on the Remuneration Committee's discretionary assessment of each individual's performance (weighted 20%). The discretionary element takes into account the Director's performance for the year against non-financial targets, such as mergers and acquisitions, key employee retention and delivery of major projects. The Remuneration Committee also retains a discretionary override to adjust the final bonus up or down to take into account all aspects of the Company's performance.

As a result, the CEO would have achieved an annual bonus of 11.3% of salary (but, with agreement of the Remuneration Committee this was subsequently waived by Andrew Day) and the CFO a bonus of 11.3% of salary, pro-rated for Jon Hauck to reflect his employment not covering the full financial year. As a leaver during 2019, David Broderick was not eligible to earn a bonus for 2019.

The table below summarises the bonus earned by the Executive Directors for the year:

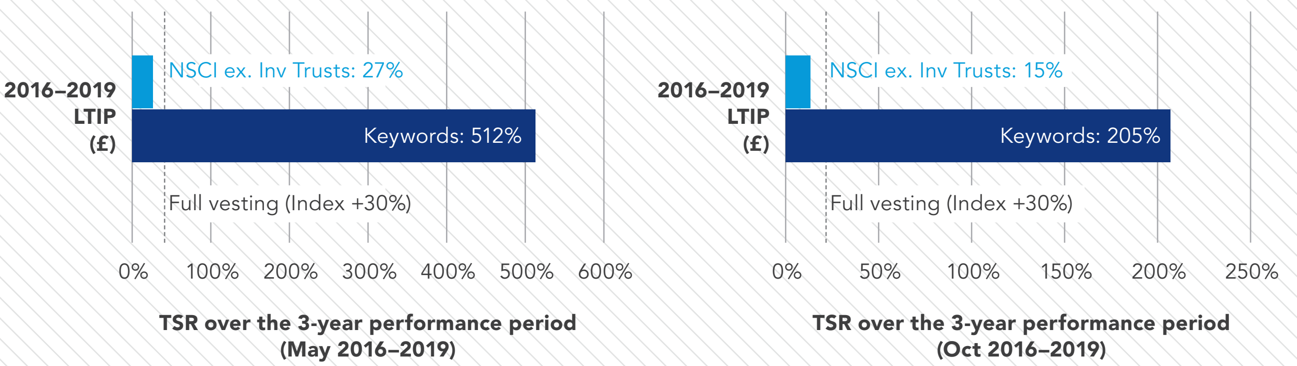
Director	Outcome	Bonus for 2019
Andrew Day	0% of salary	£nil (waived)
Jon Hauck	11.3% of salary	£5,631 (pro rata with length of tenure)

Directors’ remuneration report
continued

Long-term incentives vesting in 2019

In May 2016, Andrew Day was granted an award of 60,000 LTIPs and in October 2016 (his starting date) David Broderick was granted 30,000 LTIPs, the vesting of which was based on the Company’s TSR performance versus the Numis Smaller Companies (excluding Investment Trusts) Index over the 3-year period ending on 10 May 2019 and 3 October 2019 respectively. One-third of the award vests for achieving Index TSR+10%, two-thirds vests at Index TSR+20%, with full vesting for Index TSR+30% over three years. The Company’s TSR performance over this period significantly outperformed that of the Index (by c. 205-512%) resulting in full vesting of these awards in 2019.

TSR over the 3-year performance period



Other long-term incentives outstanding during 2019

LTIP awards granted to the Executive Directors in May 2017 and May 2018 remained outstanding during 2019. The full vesting of the 2017 awards requires Keywords TSR to outperform the Numis Smaller Companies (excluding Investment Trusts) Index over the 3-year period by 45%. Based on performance up to 31 December 2019 when the share price was £14.98, these awards would fully vest. For the 2018 awards threshold vesting (10% of the award) will vest for TSR in line with the Index and full vesting will be earned for exceeding the Index TSR by 20% over the performance period. Based on performance up to 31 December 2019 when the share price was £14.98, these awards would not vest (see TSR Performance chart below).

Long-term incentives granted during 2019

In 2019, the Executive Directors were awarded LTIPs, the vesting of which is based on the Company’s TSR performance versus the FTSE Small Cap Index over a 3-year performance period. Threshold vesting (10% of the award) will vest for TSR in line with the Index and full vesting will be earned for exceeding the Index TSR by 20% over the performance period.

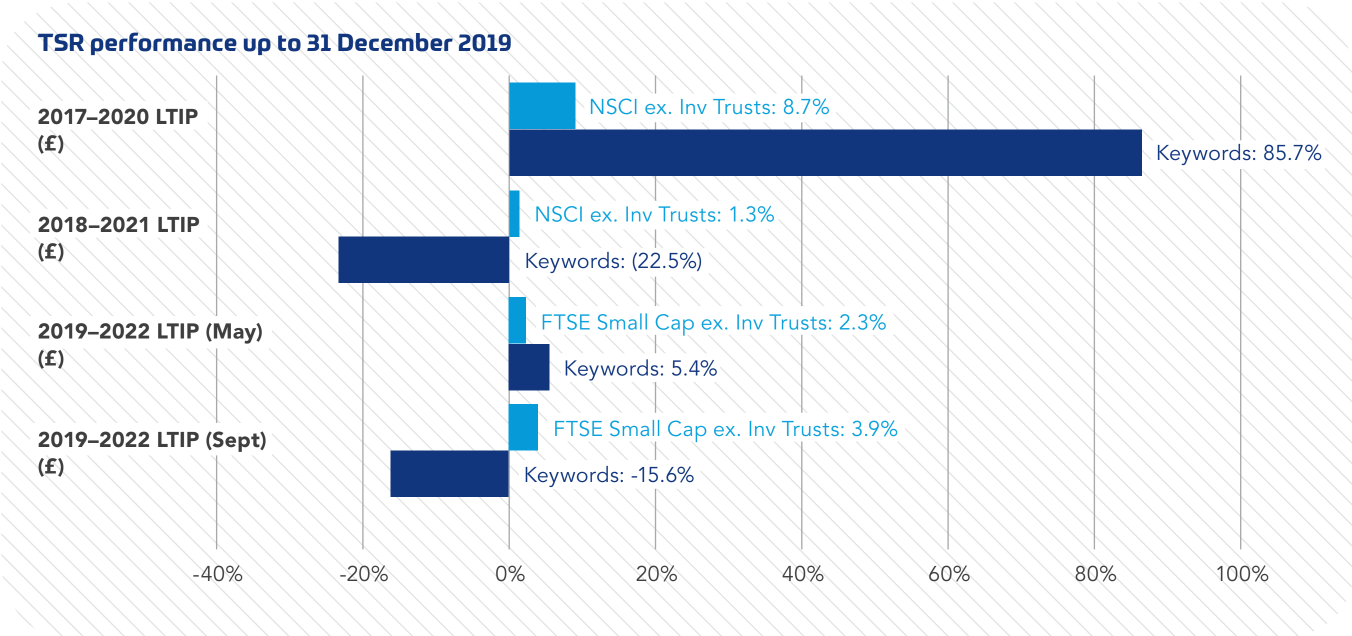
The number of shares granted to the Executive Directors is summarised in the table below.

Director	Number of shares	Value as % of salary	Performance period	Vest date
Andrew Day	50,000	331%	3 May 2019 – 2 May 2022	3 May 2022
David Broderick	25,000	274%	3 May 2019 – 2 May 2022	3 May 2022[1]
Jon Hauck (regular award)	25,000	142%	30 Sept 2019 – 29 Sept 2022	30 Sept 2022
Jon Hauck (buy-out award)	43,936	250%	30 Sept 2019 – 29 Sept 2022	30 Sept 2022

1 On his departure in October 2019, David Broderick forfeited the LTIP granted in 2019.

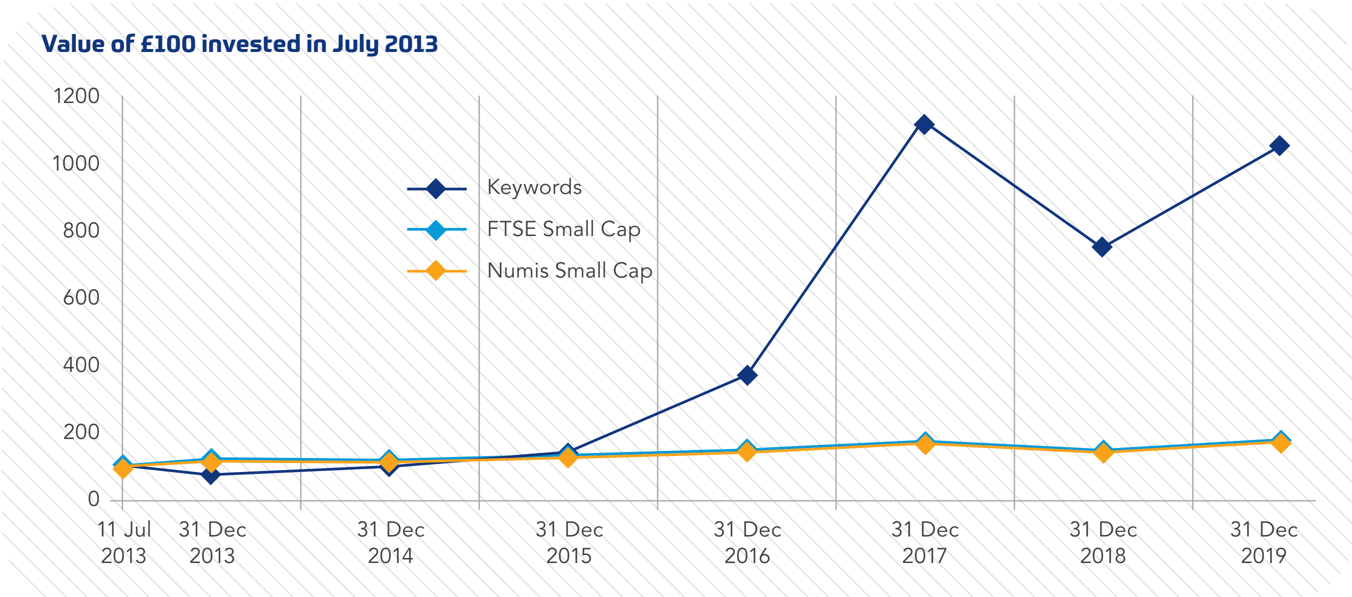
Jon Hauck was granted a second tranche of 43,936 shares to compensate for those awards he forfeited on his departure from his prior employment.

Based on performance up to 31 December 2019 when the share price was £14.98, these awards would not vest (see chart below).



TSR performance

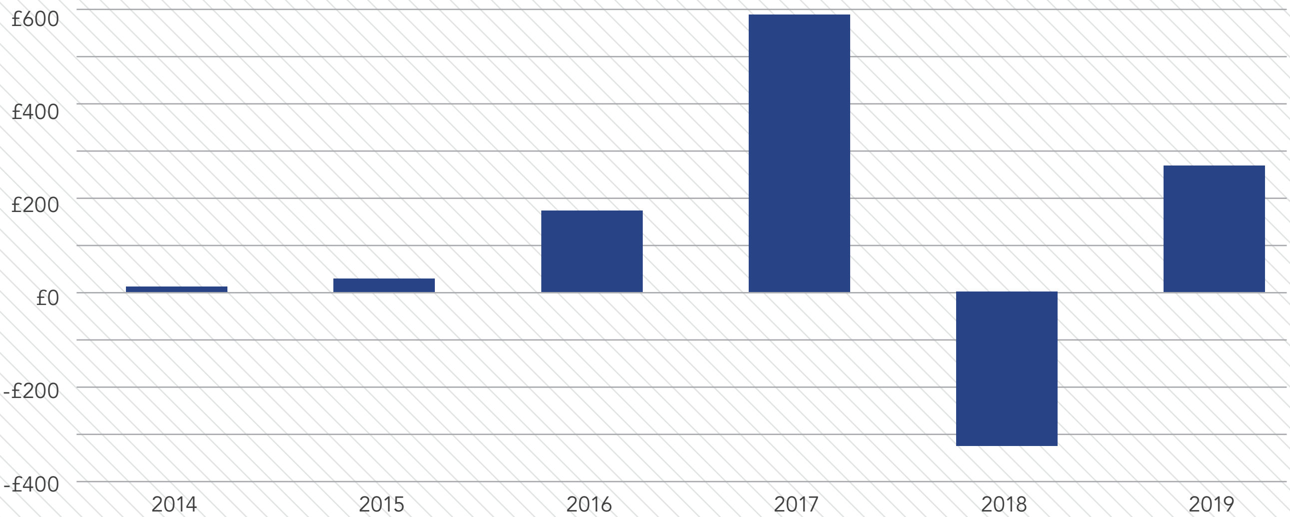
The charts below show (i) the Company's TSR since listing versus the FTSE Small Cap and Numis Smaller Companies indices, and (ii) the shareholder value created each financial year based on share price growth and dividends paid.



Directors' remuneration report
continued

TSR performance continued

Shareholder value created each year £m



Shareholder value created each year is based on the change in share price plus dividends paid over each financial year multiplied by the shares outstanding at the start of each year.

The table below illustrates the CEO's single figure of total remuneration over the same period as the charts above.

	FY13	FY14	FY15	FY16	FY17	FY18	FY19
Single figure (£000)	52	146	213	449	397	820	1,198
Annual bonus outcome (% of max)	N/A	100%	100%	100%	100%	30%	0%
LTIP vesting (% of max)	N/A	N/A	N/A	100%	N/A*	100%	100%
SOP vesting (% of max)	N/A	N/A	100%	100%	100%	N/A	N/A

* No LTIPs were issued in 2014 and therefore no vesting occurred in 2017.

Change of Chief Financial Officer

David Broderick resigned from the Company and ceased to be an Executive Director effective 14 October 2019. He was entitled to receive salary, pension and benefits for the period up to the termination date. He has forfeited all outstanding incentive awards, except the 2017 LTIP award (x2) due to vest May 2020, subject to performance measures being met, as the Committee approved the continued vesting of this LTIP award.

Jon Hauck was appointed as Chief Financial Officer effective 14 October 2019. Jon's salary (£200,000) has been set below the market median in line with the remuneration policy. He is entitled to a maximum bonus of 30% of salary and an uncapped pension contribution of 5% of salary. Upon hiring, he was granted an LTIP award of 68,936 shares (25,000 as part of the regular 2019 cycle and 43,936 shares as compensation for forfeited awards) vesting over 3 years based on TSR performance against the FTSE Small Cap Index.

Chief Executive Officer pay ratio

Although the new amendments to the Companies (Miscellaneous Reporting) Regulations 2018 do not apply to Keywords as an AIM-quoted company, we have chosen to adopt the disclosure on CEO pay ratio to align with best practice. The table below provides disclosure of the ratio between the CEO's salary and total remuneration and that of the lower quartile, median and upper quartile of our 380 UK-based employees.

Financial year	Calculation methodology		P25 (lower quartile)	P50 (median)	P75 (upper quartile)	CEO
2019	Companies (Miscellaneous Reporting) Regulations 2018 (Option A)	Salary ratio	9:1	7:1	5:1	
		Salary (£000)	26.4	35	50	240
		Total remuneration ratio	38:1	30:1	21:1	
		Total remuneration (£000)	31.6	40.6	56.8	1,198

The lower, median and upper quartile employees were determined using calculation methodology A which involved calculating the actual full-time equivalent remuneration for all UK employees for the year ended 31 December 2019. From this analysis, three employees were then identified as representing the 25th, 50th and 75th percentile of the UK employee population. Keywords chose this method as it is the preferred approach of the Government and that of shareholders, and the Company had the systems in place to undertake this method. As the drafting of this report was earlier than the final determination of bonuses for the wider population, the bonus outcomes have been based on the financial forecasts in December 2019.

As this is the first year of reporting the CEO pay ratio using the above methodology, there is no comparative data against which to compare the pay ratios above. The Committee will consider the median pay ratio of 30:1 in the context of the ratio reported in future years.

The CEO pay ratio is based on comparing the CEO's pay to that of Keywords' UK-based workforce, a large proportion of whom are engineers, artists, and support staff. The Committee expects that the ratios will be largely driven by the CEO's incentive pay outcomes, which will likely lead to greater variability in his pay than that observed at lower levels who, consistent with market practices, have a greater proportion of their pay linked to fixed components. The Committee takes into account these ratios when making decisions around the Executive Director pay packages, and Keywords takes seriously the need to ensure competitive pay packages across the organisation.

Implementation of the remuneration policy in 2020

Salary

With effect from 1 March 2020, salary increases of 2% have been awarded to the CEO and CFO, such that their 2020 salaries will be £244,800 and £204,000 respectively.

Pension

The Committee agreed that Andrew Day's pension would be enhanced to be consistent with that of the majority of the UK workforce by removal of the salary cap (£50,000 at 3%). Jon Hauck's pension remains unchanged from 2019 at 5% of salary.

Annual bonus

The Executive Directors will be eligible to earn an annual bonus of up to 30% of salary in line with previous years. The outcome will be determined with reference to targets set at the start of 2020 around financial performance (revenue and profit, weighted 80%) and personal performance (weighted 20%).

LTIP

The Remuneration Committee intends to make awards under the LTIP to the Executive Directors in line with previous years, with vesting based on the Company's TSR performance versus the FTSE Small Cap Index over a 3-year period, consistent with the performance condition for awards granted in 2019.

Directors' remuneration report
continued

Non-Executive Directors' remuneration

Non-Executive Director fees are based on the roles and responsibilities of the Directors (see table below). There are no fee increases for Non-Executive Directors in 2020.

Role	Ross Graham*	David Reeves	Giorgio Guastalla	Charlotta Ginman	Georges Fornay
Board Chairman	£90,000				
Senior Independent Director fee		£5,000			
Non-Executive Director basic fee		£48,000	£48,000	£48,000	£48,000
Additional fees:					
Chairman of the Audit Committee				£12,000	
Chairman of the Remuneration Committee		£12,000			
Member of:					
Audit Committee		£3,000			£3,000
Remuneration Committee				£3,000	
Total	**£90,000**	**£68,000**	**£48,000**	**£63,000**	**£51,000**

* Ross Graham receives no additional fees on top of his Board Chairman fee for his membership of the sub-committees.

Directors' interest in shares

The interests of each person who was a Director of the Company (together with interests held by his or her connected persons) were:

	At 31 Dec 19	At 31 Dec 18
Andrew Day	3,296,573	3,296,573
Giorgio Guastalla[1]	3,150,662	3,600,662
Ross Graham	58,440	58,440
David Reeves	32,400	32,400
Georges Fornay	5,142	5,142
Charlotta Ginman	1,733	1,733
Jon Hauck	–	–
	6,544,950	**6,994,950**

1 Giorgio Guastalla's indirect shareholding arises out of his 90% holding in P.E.Q. Holdings Limited.

The outstanding LTIP and Option awards held by each Executive Director of the Company are as follows.

LTIP

	Number at 31 Dec 18	Number granted during the year	Number vesting during the year	Number lapsed / forfeited during the year	Number at 31 Dec 19	Vesting date	Current vesting expectation**
Andrew Day	86,593	–	–	–	**86,593**	12 Jul 2016*	
	35,000	–	–	–	**35,000**	01 Jun 2018*	
	60,000	–	60,000	–	**60,000**	10 May 2019*	
	52,000	–	–	–	**52,000**	15 May 2020	100%
	50,000	–	–	–	**50,000**	18 May 2021	0%
	–	50,000	–	–	**50,000**	3 May 2022	25%
Jon Hauck	–	25,000	–	–	**25,000**	30 Sept 2022	0%
	–	43,936	–	–	**43,936**	30 Sept 2022	0%
David Broderick (former CFO)	30,000	–	30,000	–	**–**	3 Oct 2019*	
	30,000	–	–	–	**30,000**	15 May 2020	100%
	25,000	–	–	25,000	**–**	18 May 2021	
	–	25,000	–	25,000	**–**	3 May 2022	
	368,593	143,936	90,000	50,000	**432,529**		

* Awards have vested.

** Vesting expectation (% of award) is based on the achievement of the TSR performance condition up to 31 December 2019.

The awards in the table above vesting in 2020 were granted subject to the Company's TSR performance versus the Numis Smaller Companies (excluding Investment Trusts) Index over a 3-year period with a 4-year exercise window and continuous employment; threshold vesting (10% of the award) will vest for TSR in line with the Index and full vesting will be earned for exceeding the Index TSR by 45% over the performance period. The awards in the table above vesting in 2021 and 2022 were granted subject to the TSR condition as described in the Section above "Long-term incentives outstanding during 2019" and "Long-term incentives granted during 2019" respectively, having the same criteria save that full vesting applies for exceeding the Numis Smaller Companies (excluding Investment Trusts) Index by 20% (previously 45%) in 2021 and the FTSE Small Cap Index in 2022.

Share Option Scheme

	Number at 31 Dec 18	Number granted during the year	Number exercised during the year	Number lapsed / forfeited during the year	Number at 31 Dec 19	Vesting date
Andrew Day	21,167	–	–	–	21,167	12 Jul 2015
	21,167	–	–	–	21,167	12 Jul 2016
	21,168	–	–	–	21,168	12 Jul 2017
	63,502	–	–	–	63,502	

Executive Directors no longer receive awards under the Share Option Scheme. Awards of options in the table above have all vested and shall lapse the day before the seventh anniversary of the Date of Grant (12 July 2013), assuming it is not exercised before then and no event occurs to cause it to lapse earlier under the Rules.

Dr David Reeves
Chair of the Remuneration Committee
16 April 2020

Report of the Nomination Committee

Roles and responsibilities

The role of the Committee is to develop and maintain a formal, rigorous and transparent procedure for making recommendations on appointments and re-appointments to the Board. In addition, it is responsible for reviewing the succession plans for the Executive Directors and the Non-Executive Directors. This involves:

- Reviewing the structure, size and composition of the Board and making recommendations to the Board with regard to any changes.
- Assessing the effectiveness and performance of the Board and each of its Committees including consideration of the balance of skills, experience, independence and knowledge of the Company on the Board, its diversity, including gender, how the Board works together as a unit, and other factors relevant to its effectiveness.
- Considering succession planning for Directors and members of the Executive Management Team.
- Identifying and nominating new members to the Board.
- Reviewing the results of the Board performance evaluation process that relate to the composition of the Board and the performance of individual Directors.
- Reviewing annually the time input required from Non-Executive Directors.

Diversity

The Committee reviews the Board Diversity Policy regularly, with the last review in March 2020. The policy acknowledges that an effective Board will include and make good use of differences in the skills, regional and industry experience, background, race, gender and other distinctions between Directors and emphasises that in identifying suitable candidates for appointment to the Board, the Committee will consider candidates on merit against objective criteria, with due regard for the benefits of diversity on the Board.

Governance processes

The Committee meets at least twice a year and at such other times as the Committee Chair or any member of the Committee may request. In 2019, the Committee met twice. The Committee has formal terms of reference which can be viewed on the Company's website, www.keywordsstudios.com.

Main activities

Succession

The Board is committed to effectively managing leadership succession and proactively engages with the Senior Management Team to assess the Executive talent pool. The Committee and the Board receive regular contributions from individuals in the wider Executive Group at meetings of the Board and Committees throughout the year. These contributions are valuable for our decision making and have helped the Non-Executive Directors to develop a clear understanding of the strength of the management team.

Succession planning is designed to consider the planned process of transition to new leadership over time and also the potential for unforeseen change over a shorter timeframe. The Board and the Committee keep in touch with the talent development process throughout the organisation, conscious of the strategic importance of promoting from within as far as possible to support the Company's growth plans as set out in the strategic report.

Senior management succession planning will continue to be a focus for 2020.

Board and Committee Composition

The Committee also reviewed the size, composition and skill set of the Board during the year and concluded that there was an appropriate mix of experience, skills and knowledge to provide strong and effective leadership.

Role of the Company Secretary

The Directors have access to the services of a Company Secretary through Liam O'Donoghue of ONE Advisory Limited, who provides advice on company secretarial and corporate governance matters.

Annual evaluation of the Board and Committees' performance

This year's annual internal Board and Committee evaluation exercise was designed and led by the Company Secretary, working closely with the Chairman of the Board in order to provide objectivity. The areas covered were: structure and skills, operating effectiveness, operating efficiency, quality of information and ongoing development. The findings from this evaluation, based on an in-depth questionnaire issued to each Director, identified a number of positive areas including site visits to the Company's studio locations and the appointment of an Internal Audit Manager, signalling progress from the previous evaluation exercise. Although the Board and sub-committees are working well, areas highlighted for improvement include the need to spend more time discussing the quality and effectiveness of the senior management structure below the CEO, the effectiveness of the Company's strategy from a day-to-day standpoint, and to continue to undertake more site visits to the Company's studio locations. These matters will be addressed during the 2020 financial year. In addition, individual reviews of Non-Executive Director's performances were carried out by the Chairman, and the performance of the Chairman was reviewed by the rest of the Directors. This concluded that overall the Chairman devotes adequate time of the Company's business, stays abreast of developments affecting the Company, and shows a strong understanding of the business.

Ross Graham

Ross K Graham
Chairman of the Nomination Committee
16 April 2020

Directors' report

The Directors present the Annual Report together with both the audited consolidated financial statements and the parent company (Keywords Studios plc) financial statements for the year ended 31 December 2019.

Disclaimer

The purpose of this Annual Report and financial statements are to provide information to the members of the Company. The Annual Report and financial statements have been prepared for, and only for, the members of the Company, as a body, and no other persons. The Company, its Directors and employees, agents or advisers do not accept or assume responsibility to any other person to whom this document is shown or into whose hands it may come and any such responsibility or liability is expressly disclaimed.

The Annual Report and financial statements contain certain forward-looking statements with respect to the operations, performance and financial condition of the Group. By their nature, these statements involve uncertainty since future events and circumstances can cause results and developments to differ materially from those anticipated. The forward-looking statements reflect knowledge and information available at the date of preparation of this Annual Report and financial statements and the Company undertakes no obligation to update these forward-looking statements. Nothing in this Annual Report and financial statements should be construed as a profit forecast.

Dividends

The results for the year are set out on page 79. Dividends paid are set out on page 101. The Board is not proposing a final dividend following the payment of an interim dividend of 0.58p per share in October 2019.

Directors and changes to the Board

The Directors of the Company during the year were Ross Graham, Andrew Day, David Reeves, Giorgio Guastalla, Georges Fornay, Charlotta Ginman, Jon Hauck (appointed 14 October 2019), and David Broderick (resigned 14 October 2019). Details of members of the Board at 31 December 2019 are set out on pages 48 and 49.

Going concern

The Directors have performed an assessment, including a review of the Group's budget for the 2020 financial year and its longer term plans. In doing so the Directors have considered the uncertain nature of the current COVID-19 pandemic but have noted the strong continued demand for the Group's services, the ability to operate most of its services in a work from home model whilst studios are temporarily closed, the historical resilience of the broader video games industry in times of economic downturn and the ability of the Group to flex its cost base in response to a reduction in trading activity.

The Directors have also considered the Group's strong liquidity position, with access to cash and committed undrawn facilities under the Revolving Credit Facility (RCF) of €82m at 31 December 2019 and the uncommitted accordion feature under the RCF agreement providing access to up to €40m of additional funds subject to lender agreement.

The Directors have applied downside sensitivities to the Group's cash flow projections to evaluate the Group's ability to withstand a prolonged period of studio closures as a result of the COVID-19 pandemic, leading to a reduction in production capability. Under this severe case the Group would have sufficient liquidity and remain within its banking covenants. The Directors are satisfied that the Company and the Group have adequate resources to continue to operate and meet its liabilities as they fall due for the foreseeable future, a period considered to be at least 12 months from the date of signing these financial statements. For this reason they continue to adopt the going concern basis for preparing the financial statements.

Financial risk management

The Group's approach to capital management is shown in note 25 of the financial statements. The Group's exposure and approach to liquidity, credit, interest rate and foreign currency risk is shown in note 23 of the financial statements. Our approach to risk management generally and our principal risks can be found in the strategic report on pages 22 and 23.

Political donations

No political donations were made in the year.

Directors and their interests

A list of Directors, their interests in the ordinary share capital of the Company, their interests in its long-term performance share plan and details of their options over the ordinary share capital of the Company are given in the Directors' Remuneration report on pages 57 to 69. No Director had a material interest in any significant contract, other than a service contract or contract for services, with the Company or any of its operating companies at any time during the year.

Directors' report continued

Significant shareholdings

At 31 December 2019, the Company had been notified, in accordance with the Disclosure Guidance and Transparency Rules, of the following interests in its ordinary share capital*:

Name	Shares	%
Franklin Templeton	6,020,414	9.2
Octopus Investments	4,030,666	6.2
P.E.Q Holdings*	3,500,736	5.4
Andrew Day	3,296,573	5.1
Liontrust Asset Management	3,255,696	5.0
T Rowe Price Global Investments	3,220,657	4.9
TimesSquare Capital Management	2,283,856	3.5

* As recorded on the Company's share register.

Future developments

Important events since the financial year end related to the COVID-19 pandemic are described in note 30 of the financial statements, the Chief Executive's review section on pages 14 and 15 and in the Service line review on pages 24 to 27. Future developments are described in the strategy section of the strategic report on pages 22 and 23.

People and organisation

Keywords is, and always has been, dependent on the quality and commitment of its entire staff to provide and maintain the high levels of services expected by the Groups' customers.

Keywords average number of employees was 7,424 during 2019. This permanent headcount is supplemented with employees on short-term contracts as activity changes throughout the year.

Employment policy

Keywords has a range of employment policies covering such issues as diversity, employee wellbeing and equal opportunities. The Group continues to give full and fair consideration to applications for employment made by disabled persons, having regard to their particular skills and experience. Appropriate arrangements are made for the continued employment and training, career development and promotion of disabled persons employed by the Group including making reasonable adjustments where required. In the event of any colleague becoming disabled during their career at Keywords, every effort is made by the Group to ensure their continued employment and engagement with the business.

Employee involvement

The Group provides employees with information on matters of concern to them so that their views can be taken into account when making decisions that are likely to affect their interests. A summary of the methods we use to engage with our employees are provided in Our People, our culture section of the Annual Report on pages 28 to 33, Responsible Business report on pages 40 to 42 and Section 172(1) statement on page 43. Approximately 10% of the workforce participate in the Employee Share Option Plan (see page 61). We continue to review options to expand participation in employee share schemes.

Corporate responsibility

Keywords seeks to be a socially responsible Group which has a positive impact on the communities in which it operates. By the nature of the business, we employ a diverse workforce, with many nationalities. No discrimination is tolerated and we endeavour to give all employees the opportunity to develop their capabilities. We provide an excellent working environment, the latest technology and appropriate training.

Website publication

The Directors are responsible for ensuring the Annual Report and financial statements are made available on a website. Financial statements are published on the Group's website in accordance with legislation in the United Kingdom governing the preparation and dissemination of financial statements, which may vary from legislation in other jurisdictions. The maintenance and integrity of the Group's website is the responsibility of the Directors. The Directors' responsibility also extends to the ongoing integrity of the financial statements contained therein.

By order of the Board

Jon Hauck
Chief Financial Officer
16 April 2020

Statement of Directors’ responsibilities

The Directors are responsible for preparing the Annual Report and financial statements.

Company law requires the Directors to prepare financial statements for each financial year. Under that law the Directors have prepared the Group and Company financial statements in accordance with International Financial Reporting Standards (IFRS) as adopted by the European Union (EU).

Under company law the Directors must not approve the financial statements unless they are satisfied that they give a true and fair view of the state of affairs of the Company and the Group and of the profit or loss of the Group for that period. The Directors are also required to prepare financial statements in accordance with the rules of the London Stock Exchange for companies trading securities on the Alternative Investment Market.

In preparing these financial statements the Directors are required to:

- Select suitable accounting policies and then apply them consistently;
- Make judgements and estimates that are reasonable and prudent;
- State whether IFRS as adopted by the EU have been followed, subject to any material departures disclosed and explained in the Group and Company financial statements respectively; and
- Prepare the financial statements on a going concern basis, unless it is inappropriate to presume that the Company will continue in business.

The Directors are responsible for keeping adequate accounting records that are sufficient to show and explain the Company’s transactions and disclose with reasonable accuracy at any time the financial position of the Company and the Group and to enable them to ensure that the financial statements and the Directors’ remuneration report comply with the Companies Act 2006. They are also responsible for safeguarding the assets of the Company and the Group and hence for taking reasonable steps for the prevention and detection of fraud and other irregularities.

The Directors as at the date of this report, whose names and functions are listed in the Board of Directors on pages 48 and 49, confirm that:

- So far as the Director is aware, there is no relevant audit information of which the Company’s auditors are unaware; and
- The Director has taken all the steps that he or she ought to have taken as a Director in order to make himself / herself aware of any relevant audit information and to establish that the Company’s auditors are aware of that information.

This confirmation is given and should be interpreted in accordance with the provisions of section 418 of the Companies Act 2006.

Website publication

The Directors are responsible for ensuring the Annual Report and financial statements are made available on a website. Financial statements are published on the Group’s website in accordance with legislation in the United Kingdom governing the preparation and dissemination of financial statements, which may vary from legislation in other jurisdictions. The maintenance and integrity of the Group’s website is the responsibility of the Directors. The Directors’ responsibility also extends to the ongoing integrity of the financial statements contained therein.

By order of the Board

Liam O’Donoghue
Company Secretary
16 April 2020

Independent Auditor's report to the members of Keywords Studios plc

Opinion

We have audited the financial statements of Keywords Studios plc (the 'parent company') and its subsidiaries (the 'group') for the year ended 31 December 2019 which comprise the Group and Parent Company Statements of Financial Position, the Group Statement of Comprehensive Income, the Group and Parent Company Statements of Cash Flows, the Group and Parent Company Statements of Changes in Equity, and the notes to the financial statements, including a summary of significant accounting policies.

The financial reporting framework that has been applied in the preparation of the financial statements is applicable law and International Financial Reporting Standards (IFRSs) as adopted by the European Union and, as regards the parent company financial statements, as applied in accordance with the provisions of the Companies Act 2006.

In our opinion:

- the financial statements give a true and fair view of the state of the group's and of the parent company's affairs as at 31 December 2019 and of the group's profit for the year then ended;
- the group financial statements have been properly prepared in accordance with IFRSs as adopted by the European Union;
- the parent company financial statements have been properly prepared in accordance with IFRSs as adopted by the European Union and as applied in accordance with the provisions of the Companies Act 2006; and
- the financial statements have been prepared in accordance with the requirements of the Companies Act 2006.

Basis for opinion

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

Conclusions relating to going concern

We have nothing to report in respect of the following matters in relation to which the ISAs (UK) require us to report to you where:

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

Key audit matters

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

1 Revenue Recognition – cut off

Key Audit Matter

Although the majority of the Groups revenue contracts are non complex in nature, there is a material accrued revenue balance as at 31 December 2019 of €7.0m (2018: €6.3m). We focused on this area due to the risk of management manipulation of the timing of revenue recognition and the cut off relating to accrued revenue at the year end.

Related Disclosures

Refer to note 2 of the accompanying consolidated financial statements for the accounting policies of the Group in relation to Revenue Recognition.

Audit Response

We have performed audit procedures to understand the application of the revenue recognition accounting policies and to assess whether for each material revenue stream, that revenue has been recognised correctly in accordance with the Group Revenue Recognition policy. We have completed a substantive based audit approach across all full scope locations and completed specific audit procedures on a sample basis on less significant components of the group.

Our audit work included, but was not restricted to, reviewing a sample of transactions both throughout the year and around the year end, to assess that the stage of completion and therefore accrued revenue is reflective of the underlying project status. We have tested these transactions to supporting documentation such as sales orders and contracts from customers, project status evidence, and subsequent billing. When examining samples of transactions around the year end we have assessed whether the revenue has been recognised in the correct period.

2 Business Combinations

Key Audit Matter

The Group has entered into a significant number of acquisitions and business combinations throughout the year, which have had a material and extensive impact on the group's financial performance and position.

Following the purchase price allocations (in which identifiable assets and liabilities assumed were recognised at fair value), €176m (2018: €154m) of goodwill has been recognised cumulatively to date. The fair value of certain identifiable assets acquired and liabilities assumed in a business combination is different from their carrying amounts in the acquired statements of financial position which can give rise to fair value adjustments as part of the purchase price allocations of these business combinations. Accordingly, the cumulative acquisitions are material and significant judgement is required in relation to the purchase price allocations including the resulting goodwill.

Management determined the fair value of the identifiable assets and liabilities and notably the value of the customer relationships. The valuation of these assets was primarily based upon the expected future cash flows related to these acquisitions.

A number of these acquisitions have also included deferred consideration in the form of shares and cash payments at future dates, which add further complexity with regard to the acquisition-date fair value of such consideration as part of the consideration transferred in exchange for the acquisitions and business combinations.

Related Disclosures

Refer to note 2 of the accompanying consolidated financial statements for the accounting policy in relation to business combinations. In addition, detailed disclosures have been made in relation to each business combination in note 28 to the financial statements.

Audit Response

We have reviewed the underlying contracts and share purchase agreements relating to each acquisition to assess whether the basis for treatment of the acquisitions is in accordance with the accounting policy and International Financial Reporting Standard 3 – Business Combinations.

We have assessed the carrying value of each material balance at the date of acquisition, and have reviewed management's assessments of the fair value of the assets and liabilities acquired, and in particular, the methodology applied in the valuation of intangible assets and goodwill.

Our procedures included;

- We reviewed the methodology applied to identify the categories of intangible assets,
- We evaluated whether the cash flow forecasts used in the valuation are consistent with information approved by the Board and have reviewed the historical accuracy of management's forecasts in order to assess the reliance which can be placed upon managements forecasting,
- We have challenged the key assumptions such as the growth factors and discount rates by comparing them to relevant market rates and historic acquisitions to evaluate whether management had been consistent in its approach to valuations, and
- We assessed the adequacy of the acquisition disclosures in the Group's financial statements.

Independent Auditor’s report to the members of Keywords Studios plc continued

2 Business Combinations continued

In addition, we have examined the terms of all business combinations to assess whether the fair value of any deferred / contingent consideration is treated appropriately in accordance with the group accounting policy and IFRS 3.

We also examined the key post combination employment contracts of former shareholders of the acquired entities, reviewing the substance of the transactions and considered whether they have been appropriately accounted for in line with the group accounting policy and the requirements of IFRS 3.

3 Valuation of goodwill and intangible assets

Key Audit Matter

As a result of both the current year and prior year acquisitions, the group has amassed significant intangible assets and goodwill balances. These balances are material to the financial statements, with goodwill carrying value of €176m (2018: €154m), and intangibles carrying value of €21.1m (2018: €25.9).

The valuation of goodwill and other intangible assets is significant to our audit due to the fact that the impairment test calculations are based on several key assumptions which are estimated by management, and are by nature judgemental. Key assumptions include the expected future cash flows for the forecasting period, the discount rates and perpetual growth rate.

The Directors have concluded that there is one cash generating unit (“CGU”) in the group, for the purposes of impairment assessment.

Related Disclosures

Refer to note 2 of the accompanying consolidated financial statements for the accounting policy in relation to business combinations, intangible assets and goodwill. In addition, detailed disclosures have been made in relation to each business combination in note 28 to the financial statements. Detailed disclosures are made in note 11 relating to goodwill, and note 12 in relation to intangible assets.

Audit Response

We have reviewed the Directors assessment of the carrying value of goodwill and intangible assets. We have challenged the Directors assumptions in relation to CGU identification, cash flow forecasting, discount rates applied, and future growth rates.

Our procedures included;

- We have evaluated that the CGU identified is the lowest level at which management monitors goodwill and intangible assets,
- We have reviewed the accuracy of the cash flow forecasts used, and ensured that these represent those which are reviewed by the Board,
- We have reviewed and assessed the accuracy of the historical forecasts prepared by the Group,
- We have assessed the key estimates and inputs into the discounted cash flow models, including the growth rates assumed, and tested these where possible to supporting evidence such as post year end activities,
- We have completed sensitivity analyses in relation to the cash flow models and have stress tested all key assumptions used, and
- We have considered the appropriateness of the disclosures relating to the valuation of goodwill and intangible assets in the financial statements.

Our application of materiality

We apply the concept of materiality both in planning and performing our audit, and in evaluating the effect of misstatements. We consider materiality to be the magnitude by which misstatements, including omissions in the financial statements, could influence the economic decisions of reasonable users that are taken on the basis of the financial statements.

Importantly, misstatements below these levels will not necessarily be evaluated as immaterial as we also take into account the nature of identified misstatements, and in particular the circumstances of their occurrence, when evaluating their effect on the financial statements as a whole.

We determined materiality for the financial statements as a whole to be €1.75m, which represents 10% of profit before taxation and represents less than 2% of equity. We consider profit before income tax to be the most significant determinant of the group’s financial performance used by shareholders and other users and therefore consider this as an appropriate basis for materiality. Our materiality is lower than the level we set for the year ended 31 December 2018 (€2.2m), due to the decreased profits of the group.

Our application of materiality continued

We agreed with the Audit Committee that we would report to the Committee all individual differences identified during the course of our audit in excess of €87,500, (2018: €110,000). We also agreed to report differences below this threshold that, in our view, warranted reporting on qualitative grounds.

Materiality for the parent company financial statements as a whole was also considered. As the parent company's primary function is that of a holding company, a benchmark based on 5% of total assets was deemed appropriate. The resulting materiality figure for the parent company financial statements was €8.9m. As this amount was greater than the materiality applied to the group financial statements, the lower group financial statement materiality figure of €1.75m was applied in relation to the parent company financial statements also.

An overview of the scope of our audit

Our audit was scoped by obtaining an understanding of the Group and its environment, including the group wide controls, and assessing the risks of material misstatement identified at group level. The Group has operations in 21 countries, and 77 wholly owned subsidiary entities.

Based on our assessment, we have completed full scope audit procedures in relation to the following entities; Keywords Studios plc, Keywords International Limited, Sperasoft Studios LLC, Cord Worldwide Limited, Studio Gobo Limited, Electric Square Limited, Keywords Studios QC-Games Inc (formerly Babel Games Services Inc), Keywords France, Keywords China and Keywords Studios Italia S.R.L (formerly Binari Sonori S.R.L & Sillabit S.R.L).

In addition, specific audit procedures have been completed in relation to certain material balances and transaction streams in VMC Embedded Services, Keywords Canada Holdings Inc (formerly Volt Canada Inc), Keywords Studios QC-Tech Inc (formerly Alchemic Dream Inc), and Keywords Studios Japan.

The above entities represent 74% of Group revenues. Analytical review procedures have been performed on the remaining non-significant components in the group.

Whilst materiality for the financial statements as a whole was €1.75m, each component of the group was audited to a lower level of materiality. Audits of these components were performed at a materiality level calculated by reference to a proportion of group materiality appropriate to the relative scale of the business concerned.

The Group auditor, BDO Dublin, has audited Keywords Studios plc, Keywords International Limited, Cord Worldwide Limited, Studio Gobo Limited, Electric Square Limited. Their involvement in the work performed by other component auditors varies by location and involves, at a minimum, direction of the audit procedures to be completed, and review of the reports received in relation to the results of the audit work undertaken by component audit teams.

In the current year, the Senior Statutory auditor or senior members of the Group audit team have visited the following reporting locations on planned visits: Brighton, UK (Electric Square) and Canada to meet with local auditors and local Keywords Management.

At the parent company level we have also tested the consolidation process and carried out additional procedures to confirm our conclusion that there were no significant risks of material misstatement of the aggregated financial information of the remaining components not subject to full scope or specific procedures.

Other information

The directors are responsible for the other information. The other information comprises the information included in the annual report, other than the financial statements and our auditor's report thereon. Our opinion on the financial statements does not cover the other information and, except to the extent otherwise explicitly stated in our report, we do not express any form of assurance conclusion thereon.

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

Independent Auditor's report to the members of Keywords Studios plc continued

Opinions on other matters prescribed by the Companies Act 2006

In our opinion, based on the work undertaken in the course of the audit:

- the information given in the strategic report and the directors' report for the financial year for which the financial statements are prepared is consistent with the financial statements; and
- the strategic report and the directors' report have been prepared in accordance with applicable legal requirements.

Matters on which we are required to report by exception

In the light of the knowledge and understanding of the group and the parent company and its environment obtained in the course of the audit, we have not identified material misstatements in the strategic report or the directors' report.

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

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

Responsibilities of directors

As explained more fully in the directors' responsibilities statement set out on page 73 the directors are responsible for the preparation of the financial statements and for being satisfied that they give a true and fair view, and for such internal control as the directors determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

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

Auditor's responsibilities for the audit of the financial statements

This report is made solely to the company's members, as a body, in accordance with Chapter 3 of Part 16 of the Companies Act 2006. Our audit work has been undertaken so that we might state to the company's members those matters we are required to state to them in an auditor's report and for no other purpose. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the company and the company's members as a body, for our audit work, for this report, or for the opinions we have formed.

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs (UK) will always detect a material misstatement when it exists.

Misstatements can arise from fraud or error and are considered material if, individually or in aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

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

John O'Callaghan (Senior Statutory Auditor)
For and on behalf of BDO, Statutory Auditor

Dublin 2, Ireland

16 April 2020

Consolidated statement of comprehensive income

	Note	Years ended 31 December 2019 €'000	2018 €'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 from page 86 onwards form an integral part of these consolidated financial statements.

On behalf of the Board

Andrew Day
Director

Jon Hauck
Director

16 April 2020

Consolidated statement of financial position

	Note	At 31 December 2019 €'000	2018 €'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 from page 86 onwards 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

Jon Hauck
Director

16 April 2020

Consolidated statement of changes in equity

	Share capital €'000	Share capital – to be issued €'000	Share premium €'000	Merger reserve €'000	Foreign exchange reserve €'000	Shares held in EBT €'000	Share option reserve €'000	Retained earnings €'000	Total attributable to owners of parent €'000	Non-controlling interest €'000	Total equity €'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	2019 €'000	2018* Restated €'000
		Years ended 31 December	
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 VGTR 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 paid		**(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 appropriate.

Company statement of financial position

	Note	At 31 December 2019 €'000	2018 €'000
Non-current assets			
Property, plant and equipment	13	**357**	389
Investment in subsidiaries	21	**30,670**	30,670
Other receivables	15	**208,352**	175,509
Right of use assets	24	**619**	–
		239,998	206,568
Current assets			
Other receivables	15	**16,096**	1,737
Cash and cash equivalents		**599**	438
		16,695	2,175
Total assets		**256,693**	208,743
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		**56,132**	41,677
Shares held in EBT	16	**(1,997)**	(1,997)
Share option reserve		**16,449**	6,674
Retained earnings		**(84)**	(2,538)
Total equity		**179,569**	162,452
Current liabilities			
Trade payables		**139**	285
Other payables	18	**11,298**	5,435
Loans and borrowings	20	**–**	40,000
Corporation tax liabilities		**–**	3
Lease liability	24	**204**	–
		11,641	45,723
Non-current liabilities			
Other payables	18	**5,561**	568
Loans and borrowings	20	**59,500**	–
Lease liability	24	**422**	–
		65,483	568
Total equity and liabilities		**256,693**	208,743

In accordance with Companies Act 2006, the Company is availing of the exemption from presenting its individual Statement of Comprehensive Income to the Annual General Meeting and from filing it with Companies House. The amount of profit after tax dealt with in the parent undertaking is €3,651k (2018: loss of €1,147k).

The notes on pages 86 onwards form an integral part of these 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

Jon Hauck
Director

16 April 2020

Company statement of changes in equity

	Share capital €'000	Share capital – to be issued €'000	Share premium €'000	Merger reserve – restructuring €'000	Merger reserve – acquisitions €'000	Shares held in EBT €'000	Share option reserve €'000	Retained earnings €'000	Total equity €'000
At 1 January 2018	**737**	**11,739**	**102,054**	**5,313**	**29,248**	**(1,997)**	**2,545**	**(311)**	**149,328**
Profit / (loss) for the period	–	–	–	–	–	–	–	(1,147)	(1,147)
Total comprehensive income for the period	–	–	–	–	–	–	–	(1,147)	(1,147)
Contributions by and contributions to the owners:									
Share option expense	–	–	–	–	–	–	4,129	–	4,129
Share options exercised	3	–	171	–	–	–	–	–	174
Dividends (note 9)	–	–	–	–	–	–	–	(1,080)	(1,080)
Acquisition related issuance of shares (note 16)	23	3,909	–	–	7,116	–	–	–	11,048
Contributions by and contributions to the owners	**26**	**3,909**	**171**	**–**	**7,116**	**–**	**4,129**	**(1,080)**	**14,271**
At 31 December 2018	**763**	**15,648**	**102,225**	**5,313**	**36,364**	**(1,997)**	**6,674**	**(2,538)**	**162,452**
Profit / (loss) for the period	–	–	–	–	–	–	–	3,651	3,651
Total comprehensive income for the period	–	–	–	–	–	–	–	3,651	3,651
Contributions by and contributions to the owners:									
Share option expense	–	–	–	–	–	–	9,775	–	9,775
Share options exercised	7	–	754	–	–	–	–	–	761
Dividends (note 9)	–	–	–	–	–	–	–	(1,197)	(1,197)
Acquisition related issuance of shares (note 16)	10	(10,338)	–	–	14,455	–	–	–	4,127
Contributions by and contributions to the owners	17	(10,338)	754	–	14,455	–	9,775	(1,197)	13,466
At 31 December 2019	**780**	**5,310**	**102,979**	**5,313**	**50,819**	**(1,997)**	**16,449**	**(84)**	**179,569**

Company statement of cash flows

	Note	Years ended 31 December 2019 €'000	2018 €'000
Cash flows from operating activities			
Profit / (loss) after tax		**3,651**	(1,147)
Income and expenses not affecting operating cash flows			
Share option expense		**693**	255
Interest receivable		**(1)**	(12)
Interest expense		**984**	669
Depreciation – property, plant and equipment	13	**45**	27
Depreciation – right of use assets	24	**200**	–
Amounts written off financial assets		**92**	127
		2,013	1,066
Changes in operating assets and liabilities			
(Increase) / decrease in other receivables		**(17,200)**	2,393
Increase / (decrease) in trade and other payables		**10,641**	4,505
		(6,559)	6,898
Taxation paid		**–**	–
Net cash generated by / (used in) operating activities		**(895)**	6,817
Cash flows from investing activities			
Acquisition of property, plant and equipment	13	**(13)**	(415)
Interest received		**1**	12
Net cash generated by / (used in) investing activities		**(12)**	(403)
Cash flows from financing activities			
Repayment of loans	29	**(7,500)**	(10,100)
Financing Group acquisitions		**(16,368)**	(32,401)
Loan to finance acquisitions	29	**27,000**	31,850
Payments of principal on lease liability		**(192)**	–
Interest paid on principal of lease liability		**(16)**	–
Dividends paid	9	**(1,197)**	(1,080)
Shares options exercised	16	**761**	174
Interest paid		**(1,420)**	(680)
Net cash generated by / (used in) financing activities		**1,068**	(12,237)
Increase / (decrease) in cash and cash equivalents		**161**	(5,823)
Cash and cash equivalents at beginning of the period		**438**	6,261
Cash and cash equivalents at end of period		**599**	438

Notes forming part of the consolidated and company 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 parent company financial statements present information about the Company as a separate entity and not the Group.

The consolidated and Company 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.

Notes forming part of the consolidated and company financial statements continued

2 Significant Accounting Policies continued

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.

2 Significant Accounting Policies continued

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.

Notes forming part of the consolidated and company financial statements continued

2 Significant Accounting Policies continued

Revenue from Contracts with Customers continued

- 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").

2 Significant Accounting Policies continued

Share-based Payments continued

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.

Notes forming part of the consolidated and company financial statements continued

2 Significant Accounting Policies continued

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.

2 Significant Accounting Policies continued

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. The Company has applied the Group policies as set out below.

Accounting policy applicable from 1 January 2019

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.

Notes forming part of the consolidated and company financial statements continued

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.
- **Expected Credit Loss Provision on Company Receivables From Subsidiaries:** As outlined in note 22, the Company has significant receivables from subsidiaries primarily related to investments in acquisitions. The Directors have assessed that they view a significant increase in credit risk to exist if there is evidence that a loan is 30 days past due its recoverable date, or if there is external or internal indicators that the subsidiary will not be in a position to repay its loan balances as it falls due. Similarly, the Group will conclude that a loan is in default if the scheduled repayments of either principal or interest are not being met. The Directors have assessed that loans due from subsidiaries of €205.1m (2018: €175.5m) (within Stage 1 of the IFRS 9 impairment assessment model), are within their repayment terms, and no significant increase in credit risk is noted. Furthermore having assessed the ongoing expected recovery strategy of these loans, the Directors have concluded that no material provision for expected credit losses is required. Separately the Company has balances of €15.2m (2018: €1.6m) which are technically repayable upon demand. These loans are within Stage 3 of the IFRS 9 impairment assessment model. The Directors have reviewed in detail the recovery strategy in relation to these loans and have concluded that the majority of these loans will be recoverable and therefore there is no material expected credit loss provision required. A small number of such loans are technically in a credit-impaired status. An expected credit loss of €212k (2018: €183k) has been recognised in relation to these balances. Following on the rapid expansion of the Group, the Directors have commenced a re-structuring program with a view to optimising the Group structure, facilitate tax efficient repatriation of cash and re-payment of loans throughout the Group. The Directors have taken into account both the re-structuring program and the cash generating capacity of the Group, in concluding that all such loans are recoverable and the expected credit loss provisions are adequate.
- **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.

3 Critical Accounting Estimates and Judgements continued

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 €'000	2018 €'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

* 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.

Notes forming part of the consolidated and company financial statements continued

4 Revenue From Contracts With Customers and Segmental Analysis continued

Revenue From Contracts with Customers continued

Geographical analysis of revenues	2019 €'000	2018 €'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 €'000	Scheduled completion within 1 year €'000	Scheduled completion 1-2 years €'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.

4 Revenue From Contracts With Customers and Segmental Analysis continued

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

Notes forming part of the consolidated and company financial statements continued

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 €'000	2018 €'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 €'000	2018 €'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 €'000	2018 €'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 €'000	2018 €'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 €'000	2018 €'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%

Notes forming part of the consolidated and company financial statements continued

7 Taxation continued

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 €'000	2018 €'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 € cent	2018 € cent
Basic	**15.23**	23.16
Diluted	**14.73**	22.24
	€'000	€'000
Profit for the period from continuing operations	**9,909**	14,903
	Number	Number
Denominator (weighted average number of equity shares)		
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 Number	2018 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 €'000**	2018 €'000
Salaries and related costs	**201,158**	146,785
Share option expense	**9,775**	4,129
	210,933	150,914

Company	**2019 €'000**	2018 €'000
Salaries and related costs	**1,916**	1,525
Share option expense	**9,775**	4,011
	11,691	5,536

Notes forming part of the consolidated and company financial statements continued

10 Staff Costs continued

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

Company	2019	2018
Average number of employees		
Operations	**–**	–
General and administration	**26**	13
	26	13

Key management compensation is as follows:

	2019 €'000	2018 €'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 rate 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.

11 Goodwill continued

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 €'000	Intellectual property / Development costs €'000	Music licences €'000	Total €'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.

Notes forming part of the consolidated and company financial statements continued

13 Property, Plant and Equipment

Group

	Computers and software €'000	Office furniture and equipment €'000	Leasehold improvements €'000	Total €'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**

13 Property, Plant and Equipment continued

Company

	Computers and software €'000	Office furniture and equipment €'000	Leasehold improvements €'000	Total €'000
Cost				
At 1 January 2018	2	–	–	2
Additions	2	145	268	415
At 31 December 2018	**4**	**145**	**268**	**417**
Additions	**1**	**–**	**12**	**13**
At 31 December 2019	**5**	**145**	**280**	**430**
Accumulated depreciation				
At 1 January 2018	1	–	–	1
Depreciation charge	1	8	18	27
At 31 December 2018	**2**	**8**	**18**	**28**
Depreciation charge	**1**	**15**	**29**	**45**
At 31 December 2019	**3**	**23**	**47**	**73**
Net book value				
At 31 December 2018	2	137	250	389
At 31 December 2019	**2**	**122**	**233**	**357**

14 Trade Receivables

Group

	2019 €'000	2018 €'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 €'000	2018 €'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

Notes forming part of the consolidated and company financial statements continued

15 Other Receivables continued

Company – Short Term

	2019 €'000	2018 €'000
Intercompany receivables (financial assets held at amortised cost)	**15,220**	1,600
Prepayments	**702**	109
Other receivables	**174**	28
	16,096	1,737

Company – Long Term

	2019 €'000	2018 €'000
Intercompany receivables (financial assets held at amortised cost)	**208,352**	175,509
	208,352	175,509

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**

16 Shareholders' Equity continued

Share Capital continued

	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
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	
	Number	**€'000**	Number	€'000
Ordinary shares held in the EBT	**335,425**	**1,997**	335,425	1,997

Notes forming part of the consolidated and company financial statements continued

16 Shareholders' Equity continued

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 €'000	2018 €'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	

17 Share Options continued

Share Option Scheme continued

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 KWS performance verses 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	

Notes forming part of the consolidated and company financial statements continued

17 Share Options continued

Long Term Incentive Plan continued

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 €'000	2018 €'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

Company

	2019 €'000	2018 €'000
Current liabilities		
Intercompany payables	**10,091**	4,572
Accrued expenses	**818**	784
Payroll taxes	**118**	66
Other payables	**271**	13
Deferred and contingent consideration (i)	**–**	–
	11,298	5,435
Non-current liabilities		
Intercompany payables	**5,561**	568
Other payables	**–**	–
Deferred and contingent consideration (i)	**–**	–
	5,561	568

Notes forming part of the consolidated and company financial statements continued

18 Other Payables continued

Group

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

	2019 €'000	2018 €'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

Company

	2019 €'000	2018 €'000
Opening balance	**–**	971
Consideration settled by shares	**–**	(1,000)
Unwinding of discount	**–**	29
	–	–

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.

19 Employee Defined Benefit Plans continued

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 €'000	2018 €'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.

Cost for year	2019 €'000	2018 €'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

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

Notes forming part of the consolidated and company financial statements continued

19 Employee Defined Benefit Plans continued

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.

	2019	2018
Economic and Financial Assumptions		
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

	2019 €'000	2018 €'000
Interest Rate Sensitivities		
(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 €'000	2018 €'000
Euro	**59,500**	40,000
Canadian Dollars	**251**	301
	59,751	40,301

Company

	2019 €'000	2018 €'000
Euro	**59,500**	40,000
	59,500	40,000

Notes forming part of the consolidated and company financial statements continued

21 Investment in Subsidiaries

Company

	2019 €'000	2018 €'000
	30,670	30,670

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

Details of the Company's direct and indirect subsidiaries 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

21 Investment in Subsidiaries continued

Company continued

Name	Country of incorporation	Date of incorporation / acquisition	Proportion of voting rights and ordinary share capital held	Registered office
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%	Jl. 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

Notes forming part of the consolidated and company financial statements continued

21 Investment in Subsidiaries continued

Company continued

Name	Country of incorporation	Date of incorporation / acquisition	Proportion of voting rights and ordinary share capital held	Registered office
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

21 Investment in Subsidiaries continued

Company continued

Name	Country of incorporation	Date of incorporation / acquisition	Proportion of voting rights and ordinary share capital held	Registered office
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.

Notes forming part of the consolidated and company financial statements continued

21 Investment in Subsidiaries continued

Company continued

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

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

	2019 €'000	2018 €'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 €'000	2018 €'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.

22 Related Parties and Shareholders continued

As at 31 December 2019 and 2018, the Company had amounts receivable from its subsidiaries as follows:

	2019 €'000	2018 €'000
Receivables from subsidiaries related to investment in acquisitions	**208,352**	175,509
Receivables from subsidiaries relating to trading activities	**15,220**	1,600
	223,572	177,109

	2019 €'000	2018 €'000
Company – Short Term (note 15)	**15,220**	1,600
Company – Long Term (note 15)	**208,352**	175,509
	223,572	177,109

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:

	2019 €'000	2019 €'000	2018 €'000	2018 €'000
	1% Strengthening	**1% Weakening**	1% Strengthening	1% Weakening
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.

Notes forming part of the consolidated and company financial statements continued

23 Financial Instruments and Risk Management continued

The ageing of trade receivables can be analysed as follows:

Group

	Total €'000	Not past due €'000	1-2 months past due €'000	More than 2 months past due €'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 €'000	2018 €'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 €'000	Not past due €'000	1-2 months past due €'000	More than 2 months past due €'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**

	Total €'000	Not past due €'000	1-2 months past due €'000	More than 2 months past due €'000
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).

23 Financial Instruments and Risk Management continued

Company

As presented in note 22, receivables from subsidiaries relating to investments in acquisitions, comprise term loans extended to subsidiaries, while receivables from subsidiaries relating to trading activities, comprise trading balances repayable on demand. Balances are analysed in terms of the risk profile of the subsidiary. A small number of balances were deemed to be technically credit impaired under IFRS 9, and an expected credit loss of €212k (2018: €183k), was recognised in the period relating to these receivables. Taking into account internal and external information, it was determined that a significant increase in credit risk had not occurred in the reporting period for the remaining receivables from subsidiaries. A 12 month expected credit loss of €nil (2018: €nil) was recognised in the period relating to these receivables.

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:

	2019 €'000	**2019 €'000**	2018 €'000	2018 €'000
	10% Strengthening	**10% Weakening**	10% Strengthening	10% Weakening
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 and Company Statements 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.

Notes forming part of the consolidated and company financial statements continued

23 Financial Instruments and Risk Management continued

Liquidity Risk continued

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

Group

At 31 December 2019	Total €'000	Within 1 year €'000	1-2 years €'000	2-5 years €'000	Over 5 years €'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 €'000	Within 1 year €'000	1-2 years €'000	2-5 years €'000	Over 5 years €'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	–

Company

At 31 December 2019	Total €'000	Within 1 year €'000	1-2 years €'000	2-5 years €'000	Over 5 years €'000
Trade payables	139	139	–	–	–
Deferred and contingent consideration (i)	–	–	–	–	–
Other payables	16,859	11,298	–	5,561	–
Loans and borrowings	59,500	–	–	59,500	–
Loan interest	102	102	–	–	–
Lease liability	626	203	209	214	–
Total	**77,226**	**11,742**	**209**	**65,275**	**–**

At 31 December 2018	Total €'000	Within 1 year €'000	1-2 years €'000	2-5 years €'000	Over 5 years €'000
Trade payables	285	285	–	–	–
Deferred and contingent consideration (i)	–	–	–	–	–
Other payables	6,003	5,435	–	568	–
Loans and borrowings	40,000	40,000	–	–	–
Loan interest	55	55	–	–	–
Lease liability	n/a	n/a	n/a	n/a	n/a
Total	46,343	45,775	–	568	–

(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

Notes forming part of the consolidated and company financial statements continued

24 Leasing continued

Group continued

Lease liabilities

The maturity analysis of the lease liabilities are as follows:

	2019 €'000 Lease payments	2019 €'000 Finance charges	2019 €'000 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:

IFRS performance measure	2019 €'000 Operating profit	2019 €'000 Profit after tax	2019 € cent 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

24 Leasing continued

Company

Right of use assets

	2019 €'000
Cost	
At 1 January 2019	–
Adjustments from adoption of IFRS 16	**785**
Additions	–
Acquisitions through business combinations at fair value	–
Currency revaluation	**40**
At 31 December 2019	**825**
Accumulated depreciation	
At 1 January 2019	–
Depreciation charge	**200**
Currency revaluation	**6**
At 31 December 2019	**206**
Net book value	
At 1 January 2019	–
At 31 December 2019	**619**

Lease payments not recognised as a liability

The Company 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	–
Leases of low value assets	–
	–

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

	2019 €'000
Not later than one year	–
Later than one year and not later than five years	–
Later than five years	–
	–

Notes forming part of the consolidated and company financial statements continued

24 Leasing continued

Company continued

Lease liability

The maturity analysis of the lease liability is as follows:

	2019 €'000 Lease payments	2019 €'000 Finance charges	2019 €'000 Liability
Not later than one year	216	12	204
Later than one year and not later than five years	431	9	422
Later than five years	–	–	–
	647	21	626

25 Capital Management

Group

	2019 €'000	2018 €'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 €'000 Assets	2019 €'000 Liabilities	2019 €'000 Net	2019 €'000 (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)

26 Deferred Tax continued

	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.

Notes forming part of the consolidated and company financial statements continued

28 Business Combinations / Acquisitions Completed in the Current Year

	Sunny Side Up €'000	AppSecTest €'000	GetSocial €'000	Wizcorp €'000	Descriptive Video Works €'000	TV+SYNCHRON €'000	Ichi €'000	Syllabes €'000	Kantan €'000	**Total €'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**

28 Business Combinations / Acquisitions Completed in the Current Year continued

	Sunny Side Up €'000	AppSecTest €'000	GetSocial €'000	Wizcorp €'000	Descriptive Video Works €'000	TV+SYNCHRON €'000	Ichi €'000	Syllabes €'000	Kantan €'000	**Total €'000**
% 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										
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)**

Notes forming part of the consolidated and company financial statements continued

28 Business Combinations / Acquisitions Completed in the Current Year continued

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 €'000	Non-current €'000	Total €'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**

Company movement on Loans

	Current €'000	Non-current €'000	Total €'000
At 1 January 2018	18,250	–	18,250
Cash flows:			
Cash received via additional loans in the year	31,850	–	31,850
Repayment of loans	(10,100)	–	(10,100)
At 31 December 2018	**40,000**	**–**	**40,000**
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**
Repayment of loans	**–**	**(7,500)**	**(7,500)**
At 31 December 2019	**–**	**59,500**	**59,500**

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

Notes forming part of the consolidated and company financial statements continued

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 aquisition 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.

Alternative performance measures continued

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 AER €m	**2019 Revenue CER €m**	2018* Revenue AER €m	Change from 2018 FY, AER %	Change from 2018 FY, CER %
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 €m	**2019 Pre-acquisition revenue AER €m**	**2019 Pro forma Revenue AER €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 €m	2018 Pre-acquisition revenue €m	2018 Like for like revenue €m	Revenue growth €m	**2019 Revenue at CER €m**	**2019 Organic revenue growth %**
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%

Alternative performance measures continued

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 and 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.

Alternative performance measures continued

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%

Alternative performance measures continued

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.

Company information

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